DIRECTORATE GENERAL OF SEA TRANSPORTATION
MINISTRY OF TRANSPORTATION
THE REPUBLIC OF INDONESIA

Project on Enhancing of Vessel Traffic Service System Management Capability Phase 2 (Dumai VTS Operator Training)

Training Completion Report

- Volume 1 -

May 2017

JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)

JAPAN AIDS TO NAVIGATION ASSOCIATION (JANA)

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Chapter 1. Background and Objective

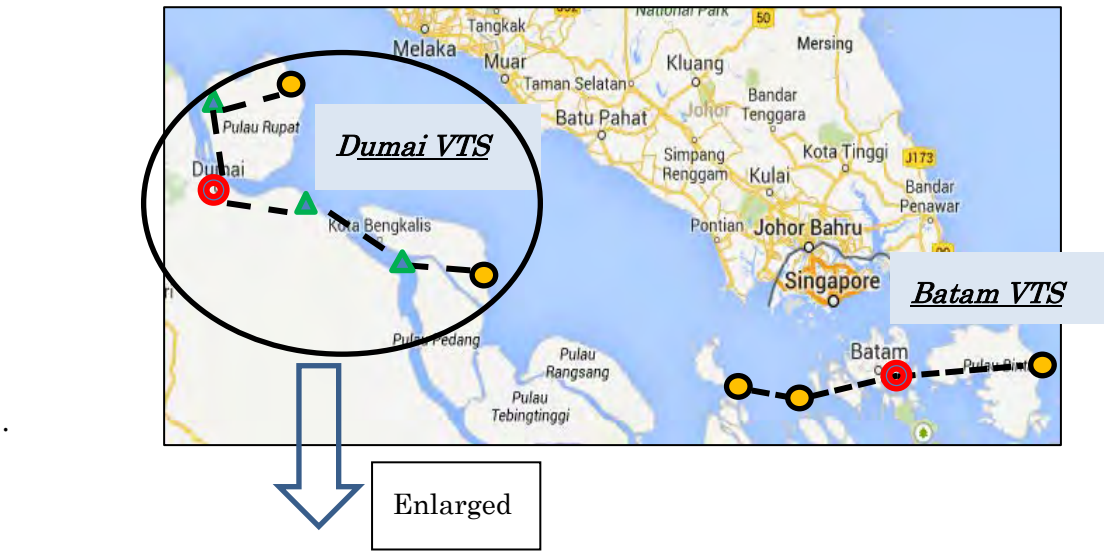
1. Background

Two VTS systems, one is called as the Batam VTS located in the Singapore Strait, and the other called as the Dumai VTS located in the Malacca Strait, had been established by the Japan Grant Aids. In order to operate these VTS systems appropriately and in accordance with the required international level, the Directorate General of Sea Transportation, Indonesia (herein after called as "DGST") requested JICA the technical assistances and in response to this request, JICA initiated the "Project on Enhancing of Vessel Traffic Service System Management Capacity" (herein after called as "Project") from 2012. And, in 2013 within this Project's framework, the VTS operator training called as the IALA (International Association of Marine Aids to Navigation and Lighthouse Authorities) accredited VTS Operator basic training for VTS personnel (herein after called as the "training") was implemented for the Batam VTS personnel.
DGST also requested the VTS operator training for VTS personnel of the Dumai VTS. Upon having this request and in considering the Dumai VTS's current situation, JICA decided to implement the VTS operator training as the same as one implemented in Batam and also to develop "SOP" (Standard Operation Procedure) and "User Manual", both of which are imperative documents for Dumai VTS to operate the system properly required by the international standard. .

Facilities locations of the Dumai VTS are showed in the figure below together with facilities of the Batam VTS:
The Dumai VTS consists of:

① VTS Sub-center
② Sensor Stations (SS):
- Tanjung Medan SS: Radar and AIS sensor stations
- Tanjung Parit SS: AIS sensor station

③ Repeater Station (Radar and/or AIS signals relay stations)
- Tanjung Sair : er Radar and AIS signals relay station)
- Selinching: AIS repeater station
- Sympang Ayam: AIS repeater station



Enlarged

Figure 1- Locality map of facilities of the Indonesian's VTS (Batam VTS and Dumai VTS) in the Malacca and Singapore Straits

2. Objective

Objective of the training implemented in Dumai had originally be set as it intended to train VTS personnel of the Dumai VTS to the level that on completion of the training trainees would become well-verses with VTS basic knowledge and technique and be able to perform duties of not only ship

movement monitoring but also information provision services, the primal services that a VTS should perform.

As the Dumai VTS put area of the busy waters of the Malacca Strait with ships' navigations under its responsibility, the training should be such that enables trainees learn systematically and effectively, learning first about what is VTS and then move on to how it should be operated in accordance with the internationally required standard and through procedures recommended by IMO (International Maritime Organization) and IALA. Moreover, effectively workable administrative chain of command and the secured communication system among VTS personnel also need to be discussed in the training.

The training also aimed at extending technical supports and assistances to the Dumai VTS personnel in their efforts to develop a "SOP" (Standard Operation Procedure) and "User Manual", both of which are fundamental documents necessary for the Dumai VTS to operate VTS services appropriately, smoothly and in coordinated ways required.

Chapter 2. Implementation of the VTS Operator Training

Listed below are the basic policies that we, consultant, have been always kept in mind in conducting the training and other works. It seemed that these basic policies resulted in bringing good outcomes.

① Careful consideration was given to keep up the Indonesian's customs and practices as, for example, allocating pray time to trainees on Friday. Thus, in the conformable atmosphere formed by it trainees could concentrate on the training.

② To implement the training in good quality with the effective program, schedule and practical syllabus.

③ To translate instructors' English to Indonesian or vice-versa by placing an interpreter during the training to help trainees' easy understandings of lectures etc. Trainees could thereby be able to up-hold their motivations and interests for long period of time which eventually led the effective implementation of the training.

Special consideration was also given to training materials, textbooks and power-point explanatory notes etc., which had been prepared as such that could facilitate trainees understand lectures easily. .

④ To implement the training as much practically as possible in meeting with Indonesian need in consultation with DGST and JICA experts.

2. Implementation of the Training

2.1 Preparation

Preparation works that we, consultant, had carried out were as follows:

① Review and study of the Project related reports and understanding of the Project's background, etc., and collection and study of the VTS operation related information

Following reports etc., had been collected and thoroughly reviewed/studied in preparation for the training.

Implementation Review Study Report on the "Project for Enhancement of Vessel Traffic System in Malacca and Singapore Straits in Indonesia"

- Record of Discussion on "Technical Cooperation Project on Enhancing of Vessel Traffic Service System Management Capacity in the Republic of Indonesia"
- Final Report of the "Soft-Component Works" (technical assistance)
- VTS Operation Capacity Building Training Completion Report ("Project on Enhancing of Vessel Traffic Service System Management Capability")
- SOP and "User Manual" of the VTS Batam as well as laws or regulations currently in effect in Indonesia for the operation of VTS, namely the "Ministry of Transportation Number 26 of year 2011" and "Decision of the DGST Number UM.008/12/16".

② Study of the VTS related technical and/or VTS operators training information, materials and publications issued by such organizations as IALA, JCG (Japan Coast Guard) and/or VTS equipment manufactures.

Collected and studied publications are:

- IALA Guideline No.1045 on "Staffing Levels at VTS Centers"
- IALA Recommendation V-128 on "Operational and Technical Performance Requirements for VTS Equipment"
- IALA VTS Training Model Course, V-103 series
- IALA VTS Guides
- JCG possessed VTS operation-related regulations and publications

③ Preparation and submission of the "Work Implementation Plan" and "Training Plan"

With the analyzed results of the collected information, materials and publications above using as references and in considering the present condition of the Dumai VTS, the required measures necessary for the Dumai VTS to start VTS operation officially had carefully been considered and the studied results were reflected in the "Work Implementation Plan" and "Training Plan"


DIRECTORATE GENERAL OF SEA TRANSPORTATION
MINISTRY OF TRANSPORTATION
THE REPUBLIC OF INDONESIA

Project on Enhancing of Vessel Traffic Service System Management Capability Phase 2 (Dumai VTS Operator Training)

Training Plan

October 2016

JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)

JAPAN AIDS TO NAVIGATION ASSOCIATION (JANA)

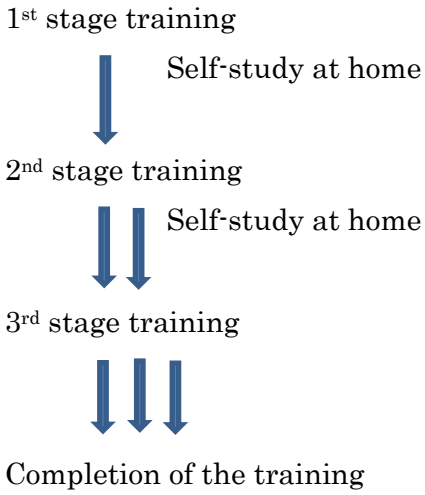
(Cover page of the Training Plan)

④ The training was planned to implement in a framework of and under the banner of WWA (World-wide Academy) of IALA so that it could be implemented as the IALA accredited VTS operator training. The training site was a meeting room of the Grand Zuri Hotel (Theoretical studies) and alao at the Dumai VTS Sub center in Dumai.

IALA in its published recommendation V-103 on "Standards for Training and Certificate of VTS Personnel" (see attached reference material) recommended the model courses of VTS trainings of V-103/1, V-103/2, V-103/3 and V-103/4. Of them, the training conducted was the V-103/1 training namely "Vessel Traffic Services Operator Training". Learning subjects and time allocations to each training subject were appropriately decided in accordance with the recommended syllabus.

Starting the training first from reviewing the basic and fundamentals of VTS theories, the training was continued to cover the syllabus's subjects of V-103/1 which comprised of 8 Modules (V-103/1 Module)

In considering the time allocation to each subject recommended, the training was planned as the three-month period of training. However, in order not to degrade the quality of the training, the whole training was spirit into three stages as indicated below, 1st, 2nd and 3rd stages – starting the training from the 1st stage then move on to 2nd stage, and to complete the training after finishing 3rd stage. In between each of the 1st and 2nd stage and 2nd and 3rd stage, 30-day period of time was set as time for trainees' self-study at home.



2.2 Discussion and Submission of the Training Plan

Discussion of the "Work Implementation Plan" and "Training Plan" with DGST and a JICA expert.

Work at site started first by visiting DGST Hqs., then the Dumai DGST Regional Hqs. and Dumai VTS Sub-center, respectively on November 2, and 4, 2016. At these DGST offices, the implementation schedule of the VTS operation training and the training's details syllabus was explained in details to DGST by presenting the previously prepared "Work

Implementation Plan" and the "Training Plan." After having had opinions and views exchanged, DGST consented to the training implementation plans without any particular changes or modifications made. Both the "Work Implementation Plan" and the "Training Plan" were consequently submitted to DGST.

In accordance with the training plan, the 1st stage of the training has been conducted for 38 days from October 31, 2016 with twenty (20) trainees participated – eighteen (18) from DGST Dumai District office and two (2) trainees from the Batam VTS Center. It was then followed by 2nd stage training which started from January 9, 2017 and 3rd stage from February 22, 2017, respectively for 23 days and 37 days. See attachment 1 "Participant List" (Listed only trainees participated from DGST Dumai). The "Training Implementation Schedule" is attached as Attachment 2.
As mentioned in Chapter 1 "Background" above, the conducted training was the IALA accredited VTS operator basic training course and the training was implemented in accordance with model course recommended by IALA V-103/1 which states training subjects as "Module" (IALA classifies subjects as "Module") that trainees should learn. See attachment 3 "Subjects covered in the training" for more detailed subjects' content.

- Language (Module 1)
  - Language structure
  - Construction of VTS message
  - Standard Marine Communication Phrases (SMCP)

- Traffic Management (Module 2))
  - Regulatory requirements
  - Role and responsibility
  - VTS environ
  - Principle of waterway and traffic management
  - Traffic monitoring and organization

- Equipment (Module 3)
  - Radar, AIS, Audio Video and other sensors
  - VHF
  - Tracking system

- Nautical Knowledge (Module 4)
  - Chart work
  - Collision regulations
  - Aids to navigation

- Port operation
- Shipboard knowledge

- Communication Coordination (Module 5)
  - General communication skills
  - Log keeping

- VHF Radio (Module 6)
  - Radio operator practice and procedure
  - VHF Radio systems and their use in VTS
  - Operation of radio equipment
  - Communication procedures, including SAR

- Personal Attribute (Module 7)
  - Diplomacy
  - Interaction with others

- Emergency Situation (Module 8)
  - International, national, regional, local regulations
  - Response to contingency plans
  - Prioritize and respond to situation
  - Coordination with, and support to allied service
  - Maintain a safe waterway throughout emergency

2.3 1st Stage Training

① Development of SOP and User Manual

Concentrated works particularly emphasized on and implemented during the 1st stage training was development of SOP and User Manual, both of which are of essential documents for the Dumai VTS to start the VTS services officially. SOP is the in-office (Dumai VTS Sub-center) utilized manual regulating standardization procedures of VTS operation and defining clearly operators' jobs to perform..

Listed below are some operators' jobs (duties) of the Dumai VTS that have been included in SOP:

- Monitor shipping traffic situation and flaw in the designated area of Dumai VTS
- Observation, detection and tracking ships
- Environmental protection
- Enhancement of the security of shipping traffic
- Improvement of the efficiency of ships' navigation

- Provision of general information
- Provision of specific information for safe navigation
- Assist ships that require specific assistance

Whereas, the User Manual is the informative booklet intended to distribute among mariners and VTS users for the purpose of letting them know about VTS and also to invite them to participate in the Dumai VTS services. Included in the Manual, among other things, are:

- Primal function of VTS
- VTS tools to gather and disseminate ship traffic information
- VTS responsible area
- VHF communication channels with the Dumai VTS Sub-center
- "Monitor", "inform", "recommend" and "direct" to facilitate ships safe navigation
- Other information necessary for VTS users, for instance, reporting procedures to the VTS Sub-center

Both of SOP and User Manual had successfully been drafted, first drafted in English and then translated into local language (Indonesian). Drafts of both English and Indonesian editions are attached hereto as attachment 4. An early approval of both documents by the DGST authority is highly expected so that the Dumai VTS could start the VTS operation officially.

② Training on "Traffic Management (Module 2)" and "Nautical Knowledge (Module 4)"

In the course of and through developments of "SOP" and "User Manual", training on the subjects of "Traffic Management" (Module 2) as well as "Nautical Knowledge" (Module 4) was implemented.


REPUBLIK INDONESIA

KEMENTERIAN PERHUBUNGAN

MINISTRY OF TRANSPORTATION

PROSEDUR OPERASI STANDAR

STANDARD OPERATION PROCEDURES

(SOP)

VTS DUMAI

Directorate Navigation

Directorate General Sea Transportation

(Cover page of SOP)

(Training Scene)

③ Language (English) training (Module 1)

Also conducted intensively in the 1st stage training was language training, training on basic general English and marine English, specifically "Construction of the VTS Messages" and "Standard Marine Communication Phrases (SMCP)" and the English training ended successfully.

SMCP is the Marine English defined by IMO for use among ships and between ships VTS Center. The English was conducted by UIB (University International Batam) with whom the employment contract had been made. Trainees learned a lot about the required English knowledge and speaking abilities and they can now communicate with ships via VHF by commanding required Marine English properly.

④ Special lecture by Port Authority

It is vitally important for VTS operators to get familiar with the geographical locations of the prominent features, such as berths, buildings, bridges, oil tanks, aids to navigation and other port facilities located in the VTS responsible area. Also, important for operators is knowledge of ships' navigation channel, restricted areas and ships navigation situation in VTS area. So that for the purpose of letting trainees learn situation of the VTS responsible area including Dumai port, two lectures, one from DGST Dumai and the other from the Port Authority of Duma were specially invited and on November 15, 2016, they delivered lectures on subjects of the following themes.

- "Safety measures being implemented in Dumai area by District Navigation, Dumai"

  By Captain Johnson Manurang M. Mar

  Vice Director, District Navigation, Dumai, DGST
- "Current situation of shipping traffic in Dumai port"

  By Mr. Radin

  Staff of PT Pelindo Cabang Dumai (Port authority of Dumai)
- "Pilot operation being operated in Dumai port"

  By Mr. Digro Widioro

  Staff of PT Pelindo Cabang Dumai (Port authority of Dumai port)

Their lectures were very much informative and trainees learned a lot about the VTS area they as operators will be responsible for.

⑤ Field study trip

Following the above mentioned special lectures, site observation study trip was conducted on November 30, 2016. Trainees boarded a speed boat and went out for one-day field study

trip in and around the port of Dumai. In this field trip, trainees could confirm not only what they had learned at the previous lectures but also to check locations of various port facilities as well as the shipping traffic situation in the port. Staff of DGST Dumai and Port Authority boarded the boat and led the training as instructors.

2.4 2nd Stage Training

The training continued to the 2nd stage. In this stage, the training was conducted with the already developed "SOP" and "User Manual" using as the reference. Subjects (Module) covered in the training were "Traffic Management" (Module 2), "Equipment" (Module 3) as well as "Communication Coordination" (Module 5).
The training successfully completed without any difficulties encountered.

2.5 3rd Stage Training

① Consequently, the 3rd stage training continued. In this stage, training on such subjects that had not yet been covered in the previous stages, namely "Ship Operation (Module 2)", "VHF radio" (Module 6), "Communication Coordination" (Module 5) "Personal Attribute" (Module 7) and "Equipment" (Module 3) and "Emergency" (Module 8) were intensively implemented.

② IALA WWA VTS expert lecture

In the course of this training, Mr. Kevin Gregory, a representative of IALA WWA (World-Wide Academy), was invited. He is a chair of IALA VTS Committee and on March 5 and 6, 2017 he presented trainees and other participants from DGST Dumai district the VTS & IALA them as indicted below.

- Introduction to IALA and WWA
- IALA training and Accreditation Process
- International Obligation relating to VTS
- Introduction to Aids to Navigation
- Introduction to Risk
- Nautical publications and others

(Lecture by Mr. Kevin Gregory, IALA)

Participants in his lectures were not only trainees but also those of DGST Dumai staff and officials from other government organizations, such as Dumai Port Authority etc. His lecture was very informative and valuable one for those of trainees who would soon be involved in VTS operation. After having had active questions and answers session, he finished his presentations. All the participants thanked him a lot for his specially arranged presentation.

③ Site Training at the Batam VTS Center

Organized also as the study tour during the 3rd stage training was a technical visit to Batam VTS Center. (Operationally the Dumai VTS functions as its sub center) After splitting 18 trainees into two groups, each group visited the Batam VTS Center each for two-day training there.

At the Batam VTS Center, what trainees had learned, among other things, were:

- Organizational structure of the Batam VTS Center and personnel's on-the-watch formation, operators' and technicians' duties, system and equipment, VTS services being implemented
- VTS operation practice training, MFC (Multi-function console)and other equipment utilization practice, utilization of the recorded data and study of MEH (Marine Electric Highway, IMO project)

What trainees had learned at the Batam VTS Center could no doubt be beneficially worked out for their VTS operation expected to be started soon.

(Batam VTS Center)

(Training at the Batam VTS Center)

2.6 Evaluation, Assessments and Training Completion Certificate

Accomplishments that trainees have obtained through the training were evaluated first by respective instructors and then by examiners as stated below.

Evaluation:

Instructors' evaluations by written and/or practical test

↓ If passed

Assessment:

Assessors' assessment of the trainees' competencies by interview

↓ If passed

Award of Certificate:

Trainee receives a Certificate (IALA accredited VTS Operator Course Certificate) which carries a logo of IALA printed on it

As stated above, trainees' accomplishments were first evaluated by respective instructors at the end of every stages of the training (at the end of 1st, 2nd and 3rd). Even though some had good scores to the instructors' evaluation there were trainees who could get only just over 60 points (pass/failure points) out of 100, but as a whole it was evaluated that trainees attained the satisfactory level of accomplishment. Then, at the completion of the training, trainees' abilities and competencies to perform the VTS duties were comprehensible assessed by assessors in accordance with the IALA recommendation V-103 on "Standards for Training and Certification of VTS Personnel" (see attached reference material). Two well-qualified assessors had been dispatched and they conducted the assessment by having interview with trainees.

All the twenty trainees participated in the training had successfully passed the assessments and received the IALA accredited V-103/1 VTS Operator Training Course Certificate, a copy of which is attached as Attachment 5.

2.7 Instructors

Instructors who conducted the training were as followed:

Name	Affiliated office	Subjects in charge
Mr. Setsuo AKAISHI	Japan Aids to Navigation Association (JANA)	Module 2,7 and 8 1. Development of SOP and User Manual 2. Traffic Management (Regulatory requirement, role and responsibility and VTS environ), traffic monitoring and organization 3. Emergency situation
Mr. Masami NODA	JANA	Module 3 and 5 1. System and equipment 2. Communication coordination
Mr. Ryozo SHIGEMATSU	JANA	Module 3 and 6 System and equipment and VHF radio
Captain. Kazuki INOUE	Tokyo University of Marine Science and Technology	Module 2 and 4 Traffic management(Principle of waterway and traffic management Nautical knowledge (collision regulations) Ship knowledge
Dr. Hideo NISHIDA	Japan Hydrographic Association	Module 4 Nautical knowledge including chart work and aids to navigation

All the instructors dispatched were professionally qualified and experienced in their respective fields and conducted the training in good manner and effectively.

As for language, the training of the basic English as well as SMCP (Module 1), was implemented by UIB (University international Batam) and they conducted the training successfully.

3 Accomplishment

By having had the training completed, trainees now came to possess not only knowledge of VTS but abilities to perform the assigned VTS duties. Judging from it, it is then evaluated that the initially set objectives of the training could satisfactory be achieved and the training ended successfully. Accomplishments, to name a few, were as follows.

① Development of drafts of both "SOP" and "User Manual" in English and local language (Indonesian).

In the training, SOP and User Manual were drafted but in order for the Dumai VTS to start the VTS operation officially, both documents are needed to be approved by DGST authority, An early approval is highly awaited. Drafts of SOP and User Manual are attached as Attachment 4.

Through working on development of the documents, trainees could understand much and clearly what is VTS about and how should it be operated. Also understood well by trainees were operators' job, duties and responsibilities and the VTS-related rules and regulations as well.

② Trainees understood various VTS-related documentations such as IALA V-103, VTS Manual, IMO or IALA recommendations etc. Also understood by them were internationally agreed VTS operation standard and through the appropriate procedure.

Now, trainees can communicate with ships via VHF as they want by commanding required Marine English, for example, SMCP.

③ Trainees understood and utilized almost all the functions provided to MFC (Multi-function console) and other VTS equipment in accordance with what they want to do in operation.

④ Trainees understood laws, regulations and conventions required for ships' safe navigations. Also understood by trainees were ship's maneuvering, operation, limitations and shipping routes (ship knowledge)

⑤ Trainees understood meanings of information that ENC (Electronic Navigational Chart) of MFC carries on its display - such as the displayed symbologies of aids to navigation, shipping route, anchoring area, limited area and so forth.

⑥ Prepared text books and other teaching materials can be utilized for the VTS trainings to be followed.

Chapter 3 Problems Encountered and Recommendation for Sustainability of Output

1 VTS Personnel

Currently almost all the personnel assigning to the VTS Dumai were transferred from the coastal radio station located at the same premises of the VTS Sub-center and some of them are still engaging in both duties as a radio operator and VTS operator. This is one of the problems that hindered smooth and efficient operation of the VTS Dumai. Early solution is very much be recommended.

2 Preparation of Communication Machine and Office-work Tools in the Operation Room

Communication tools, such as a telephone, e-mail and website necessary for communicating with stake holders (DGST Dumai, Port Authority etc.,), have not been installed at the Center. There are no photo-copy machines nor PCs for use for office-work, for example, to make on-duty logs and/ or daily operation reports. An early supply of necessary communication machine and office-work tool together with a chart table etc., are imperative for efficient implementation of the VTS operation.

3 Cooperation with Port Authority and other VTS-related Agencies

Cooperation with VTS-related agencies, such as port authority and shipping agencies etc., (stake holder) is a fundamental tool and key to success for the Dumai VTS to conduct the effective and smooth VTS operation. Toward establishment of the cooperation, starting discussion and negotiation with agencies concerned is very much advisable.

Attachment 1

Participant List

Attachment 1
Participants List

KEMENTERIAN PERHUBUNGAN
DIREKTORAT JENDERAL PERHUBUNG
DISTRIK NAVIGASI KELAS I DUMAI

JALAN DATUK LAKSAMANA
DUMAI 28814

TELP. (0765) 35067, 33205
FAX (0765) 37255,31228

TLX 56165
E-MAIL disnavdumai@dephub.go.id
dumai@indomarinav.net

Nomor : UM.001/ 6 / 6 /DNG.Dmi-2016
Klasifikasi : Biasa
Lampiran : 2 (dua), lembar
Perihal : Konfirmasi Nama Peserta Kegiatan VTS Operator Trained Based on IALA V103/1 in Dumai.

Dumai, 19 September 2016

K e p a d a

Yth. Direktur Kenavigasian Ditjen Perhubungan Laut.

di-

JAKARTA

1. Menindaklanjuti Surat JICA Expert on Maritime Safety and Security tanggal 18 Agustus 2016 perihal VTS Operator Trained Based on IALA V103/1 in Dumai.

2. Tersebut butir 1 (satu), bersama ini kami sampaikan nama-nama peserta untuk kegiatan VTS Operator Trained Based on IALA V103/1 in Dumai (Daftar Nama Terlampir).

3. *Demikian disampaikan, atas perhatiannya diucapkan terima kasih.*

KEPALA DISTRIK NAVIGASI KELAS I DUMAI
Pelaksana Harian,

LA ANTJI, SE
Penata Tk. I (III/d)
NIP. 19600906 198103 1 001

Tembusan :
1. Kabag Kepeg Setditjen Hubla.

Lampiran : Surat Kepala Distrik Navigasi Kelas I Dumai
Nomor : UM.001/ 6 / 6 /DNG.Dmi-2016
Tanggal : 14 September 2016

DAFTAR NAMA PESERTA VTS OPERATOR TRAINING BASED ON IALA V103/1
KANTOR DISTRIK NAVIGASI KELAS I DUMAI

NO.	NAMA / NIP	PANGKAT / GOLONGAN	JABATAN
1	2	3	4
1.	YUZNIZAR 196405301988031002	Penata (III/c)	PKP Penyelia
2.	~~SYOFWAN~~ NASRIL ~~196501161988031001~~	Penata (III/c)	PKP Penyelia
3.	ARIS NUGROHO 196505221988031001	Penata (III/c)	PKP Penyelia
4.	ASWANDI 196508131988031001	Penata (III/c)	PKP Penyelia
5.	SYAFRI EDI 196512171988031001	Penata (III/c)	PKP Penyelia
6.	SURYANTO 196607081989031003	Penata (III/c)	PKP Penyelia
7.	SUPARNI 196608021987121001	Penata (III/c)	PKP Penyelia
8.	HARMEN JONI 196706121989031003	Penata (III/c)	PKP Penyelia
9.	HENDRA 196812261989031001	Penata (III/c)	PKP Penyelia
10.	SUDARNO 197402111995031001	Penata Muda Tk.I (III/b)	PKP Pelaksana Lanjutan
11.	SUPRAPTO 197307101997031002	Penata Muda Tk.I (III/b)	PKP Pelaksana Lanjutan
12.	MUHAMMAD 196606121988031003	Penata Muda (III/a)	Markonis Telkompel
13.	ADITIA MAHESA, A.Md 198806182014021005	Pengatur (II/c)	Operator Radio Pelayaran
14.	GUNAWAN MANALU, A.Md 198806232014021002	Pengatur (II/c)	Operator Radio Pelayaran

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1	2	3	4
15.	IMAN SAHDIWAN 197905172007121001	Pengatur Muda Tk.I (II/b)	PKP Pelaksana
16.	MERIANI NAJOAN 198005232010122002	Pengatur Muda Tk.I (II/b)	Markonis Telkompel
17.	SEVIA DIANTIKA 198809192010122005	Pengatur Muda Tk.I (II/b)	Operator Radio Pelayaran
18.	NESSIH PRONANTI 198104192014022001	Pengatur Muda (II/a)	Operator Radio Pelayaran

KEPALA DISTRIK NAVIGASI KELAS I DUMAI
Pelaksana Harian,

LA ANTJI, SE
Penata Tk. I (III/d)
NIP. 19600906 198103 1 001

Attachment 2

Training Implementation Schedule

Dumai VTS Operator Training Implementation Schedule

First (1st)Stage Training

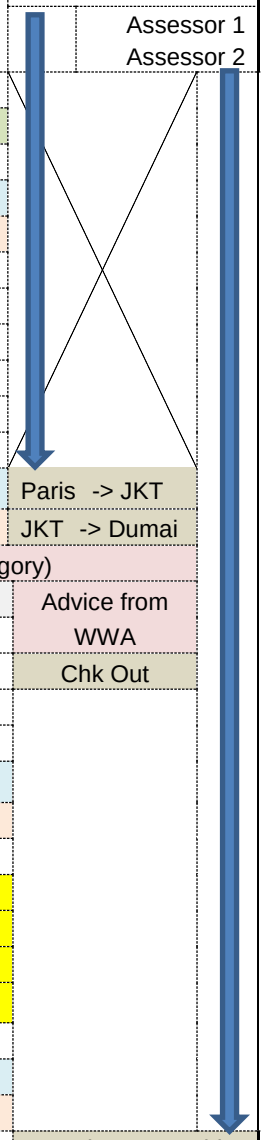
Number of Days	Month /Date	Week	Instructor 1 Module 2 Traffic Management		Instructor 2 Module 3 & 6 System, Equipment		Instructor 3 Module 1 & 5 Language, VHF Comm.	
1	Oct/31	Mon	Narita -> Jakarta					
2	Nov.1	TUE	Meeting with JICA・Embassy of Japan, DGST					
3	2	WED	Meeting with DGST					
4	3	THU	Jakarta->Dumai					
5	4	FRI	Dumai Navigasi meeting					
6	5	SAT	Preparation for the training of the next week					
7	6	SUN						
8	7	MON	Orientation (Briefing on Overall Plan of Training)				Batam -> Dumai	
9	8	TUE	AM	Opening ceremony (Guests, All Instructor and Trainee)				
			PM	All Instructor and Trainee visit Dumai Sub-Center				
10	9	WED	To support the creation of the SOP-1		AM		Basic English-1	PM
11	10	THU	To support the creation of the SOP-2		PM		Basic English-2	AM
12	11	FRI	To support the creation of the SOP-3		AM		Basic English-3	PM
13	12	SAT	Preparation for the training of the next week					
14	13	SUN						
15	14	MON	To support the creation of the SOP-4		PM		Basic English-4	AM
16	15	TUE	Special lectures by DGST and Pelindo (Dumai's Port Authority)		AM		Basic English-5	PM
17	16	WED	To support the creation of the SOP-6		PM		Basic English-6	AM
18	17	THU	To support the creation of the SOP-7		AM		Basic English-7	PM
19	18	FRI	To support the creation of the SOP-8		PM		Basic English-8	AM
20	19	SAT	Preparation for the training of the next week					
21	20	SUN						
22	21	MON	To support the creation of the SOP-9		AM		Basic English-9	PM
23	22	TUE	Creation of the User Manual-1		PM		SMCP lecture-1	AM
24	23	WED	Creation of the User Manual-2		AM		SMCP lecture-2	PM
25	24	THU	Creation of the User Manual-3		PM		SMCP lecture-3	AM
26	25	FRI	Creation of the User Manual-4		AM		SMCP lecture-4	PM
27	26	SAT	Preparation for the training of the next week					
28	27	SUN						
29	28	MON	Creation of the User Manual-5		PM		SMCP lecture-5	AM
30	29	TUE	Creation of the User Manual-6		AM		Examination	PM
31	30	WED	Port Cruising-including visit the Dumai Port Authority				Dumai->Batam	
32	Dec.1	THU	Creation of the User Manual-7					
33	2	FRI	Examination & Evaluation (SOP and User Manual)					
34	3	SAT	Preparation for the training of the next week					
35	4	SUN						
36	5	MON	1st stage closing: Evaluation of the results. Briefing for overview of the next training. Storing the training equipment to Dumai Sub-Center					
37	6	TUE	Dumai-> (Jakarta) , Jakarta-> to Tokyo (Night Flight)					
38	7	WED	-> Narita					

Second(2nd) Stage Training								
Number of Days			Instructor 1 Module 2 Traffic Management		Instructor 2 Module 3 System, Equipment		Instructor 4 Module 4b Nautical Chart	
	Month /Date	Week						
1	Jan/9	Mon	Narita -> Jakarta					
2	10	TUE	Jakarta -> Dumai					
3	11	WED	Report to Dumai Navigasi				Narita -> Jakarta	
4	12	THU	Preparation for the training				Jakarta -> Dumai	
5	13	FRI	Guidance for 2nd Stage					
6	14	SAT	Preparation for Training					
7	15	SUN						
8	16	MON	Traffic Management-1	A0	System, Equipment -1	P1	Nautical Chart-1	P2
9	17	TUE	Traffic Management-2	P1	System, Equipment -2	P2	Nautical Chart-2	A0
10	18	WED	Traffic Management-3	P2	System, Equipment -3	A0	Nautical Chart-3	P1
11	19	THU	Traffic Management-4	A0	System, Equipment -4	P1	Nautical Chart-4	P2
12	20	FRI	Traffic Management-5	P1	System, Equipment -5	P2	Nautical Chart-5	A0
13	21	SAT	Preparation for Training					
14	22	SUN						
15	23	MON	Traffic Management-6	P2	System, Equipment -6	A0	Nautical Chart-6	P1
16	24	TUE	Traffic Management-7	A0	System, Equipment -7	P1	Nautical Chart-7	P2
17	25	WED	Traffic Management-8	P1	System, Equipment -8	P2	Nautical Chart-8	A0
18	26	THU	Traffic Management-9	P2	System, Equipment -9	A0	Nautical Chart-9	P1
19	27	FRI	Examination	P1	Examination	P2	Examination	A0
20	28	SAT	Report evaluation results				Report evaluation results	
21	29	SUN	Storing the training equipment to Dumai Sub-Center				Dumai -> Jakarta ->	
22	30	MON	Dumai -> Jakarta -> to Tokyo (Night Flight)				-> Narita	
23	31	TUE	-> Narita					

Dumai VTS Operator Training Implementation Schedule

Third (3rd) Stage Training

Number of Days	Month Date	Week	Instructor 1 Module 5,6,7,8 Int.-personel, Emergency &VHF	Instructor 2 Module 5 & 6 Communication & VHF (VHF Communication)	Instructor 5 Module 4a Ship operation	Instructor from IALA WWA
						Assessor 1 Assessor 2
1	Feb 22	WED	Narita -> Jakarta			
2	23	THU	Meeting DGST	Jakarta -> Dumai (Inoue & Shigematsu)		
3	24	FRI	Jakarta -> Dumai	PM 2:00 Guidance for Trainee		
4	25	SAT	Meeting: All Instructors & assistants			
5	26	SUN	To organize the trainees into two groups. (G1 & G2)			
	Date	Week	G1: AM & PM	G2: AM	G2: PM	
6	27	MON	Dumai->Batam (Trip)	Ship Opr. 1	VHF Opr. 1	
7	28	TUE	Batam VTS Exercise	VHF Opr. 2	Ship-Opr. 2	
8	Mar 1	WED	Discussion (AM) : PM Free	Ship Opr. 3	VHF Opr. 3	
9	2	THU	Batam -> Dumai (Trip)	VHF Opr.4	Ship Opr. 4	
10	3	FRI	Make Report (Room 2/2)	Ship Opr. 5 (Room 1/2)		
11	4	SAT	Ready for Training Text			Paris -> JKT
12	5	SUN	Pick Up Mr. Gregory at Dumai Airport			JKT -> Dumai
13	6	MON	WWA Special Lecture & Discussion 1 (By Mr. Kevin Gregory)			
	7	TUE	0900~1200	1300~1425	1435~1600	Advice from WWA
14			WWA Special Lecture 2	Ship Opr. S1	Int. Personel 1	
15	8	WED	Int. Personel 2	VHF Opr. S1	Ship-Opr. S2	Chk Out
16	9	THU	Ship Opr. S3	Emergency 1	VHF Opr. S2	
17	10	FRI	VHF Opr. S3	Ship Opr. S4	Emergency 2	
18	11	SAT	Ready for Training Text			
19	12	SUN	* Note: Ship Opr S:International law; VHF Opr S: Module 5			
20	13	MON	AM	PM	AM & PM	
			Ship Opr. 1	VHF. Opr. 1	Dumai->Batam (Trip)	
21	14	TUE	VHF. Opr. 2	Ship-Opr. 2	Batam VTS Exercise	
22	15	WED	Ship Opr. 3	VHF. Opr. 3	Discussion (AM) : PM Free	
23	16	THU	VHF. Opr. 4	Ship Opr. 4	Batam -> Dumai (Trip)	
24	17	FRI	Ship Opr. 5 (Room 1/2)		Make Report (Room 2/2)	
25	18	SAT	Ready for Exam. & Assessment 1			
26	19	SUN	Ready for Exam. & Assessment 2			
27	20	MON	Review of the entire training			Noda & Hayashi Narita -> JKT
28	21	TUE	Examination: AM: Module 4a, 5,6: PM: Module,7, 8			JKT -> Dumai
29	22	WED	Ready for Assessment		Shigematsu & Inoue Dumai -> JKT->-> Narita	Assess 1: Interview
30	23	THU	Assess 2: Evaluate operational skill (Sub-Center) & Ready for Closing			
			Closing Ceremony (start from 6:30 PM to 8:30)			
31	24	FRI	Akaishi & Noda Closing Work (Packing and Payment)			Hayashi Dumai -> JKT
32	25	SAT	Closing Work			.
33	26	SUN	Akaishi & Noda Dumai -> JKT			
34	27	MON	Report to DGST			
35	28	TUE	Report to JICA and (Embassy Japan)			
36	29	WED	Akaishi, Noda & Hayashi Dumai Jakarta-> to Tokyo			
37	30	THR	-> Arrive at Narita			



Attachment 3

Training Subjects Covered

Attachment 3 : Subjects covered in the training

Module no,	Subject Area	Description
Module 1 Language Instructor: Universitas International Batam (Local Consultant)		*Have a sufficient knowledge of the English language to be able to use charts and other nautical publications, understand meteorological and oceanographic information and communicate with vessels and allied services for VTS mission purposes.*
	■ **Language structure** > Message construction in English > English for special purposes, redundancy and precision > Elimination of ambiguity by choice of words > Elimination of ambiguity by special techniques > Status of a message	**Language structure** Explain the use of English for special purposes, redundancy and precision. → The exclusion of all items, except those directly applicable to the subject → Legal and engineering terminology and their different structures → Advantages and disadvantages of redundancy → The choice of precise words to express meaning --- Describe the techniques to eliminate ambiguity → 'Conditional' words and their elimination in VTS messages → Consequences of misuse of 'conditional' words --- Describe the use of message markers and the meaning they imply → Legal implications of using message markers, particularly "Warning", "Information", "Advice" and "Instruction" → Legal and psychological relationship between master, pilot and VTS, and the use of message markers → Examples from operational VTS
	■ **Specific VTS messages construction** > Construction of messages > Speech devices to imply higher message status	**Specific VTS messages constructio** Construct VTS messages → Practical communications → Examples from 'Basic English' and 'ICAO English' --- Explain speech techniques to imply higher message status
	■ **Standard phrases** > The advantages, disadvantages and application of Standard Marine Communication Phrases > The IMO SMCP in general > The IMO SMCP, part 3, section 6, VTS	**Standard phrases** State the advantages, disadvantages and application of SMCP → Use of standard phrases to trigger predictable actions → Limiting the number of standard phrases to ensure recognition and memory retention → When standard phrases are not the best method available --- Demonstrate the use of IMO Standard Marine Communication Phrases (SMCP) → Introduction to the SMCP - Its overall construction and origins → The use of the SMCP on ships, particularly during emergency situations and distress → When and how to use the SMCP in response to ships using the system → Exercise: Use of SMCP in simulation and in actual recorded events --- Explain when and how to use the SMCP within a VTS (Part 3, section 6 of the SMCP) → General layout → Exercise: Use of SMCP by a VTS in simulation and recorded VTS events
	■ **Collecting informaiton** > Questioning techniques	**Collecting informaiton** Describe information collection and questioning techniques → Direct questioning using message markers → Linguistic problems in using voice tone to pose a question → Rejection of abstract questions and double questions → Sarcasm in questioning.

Module no,	Subject Area	Description
Module 2 Traffic Management Instructor: Mr. S.Akaishi	■ **Regulatory requirements** > International regulations > National regulations including local bye laws > Legal liabilities of VTS functions > Safety related ship certificates	**Regulatory requirements** Identify the legislative requirements relating to the VTS area and protection of the marine environment --- International regulations → Sources of literature on international legislative requirements IMO Resolution 857(20), Ship reporting systems, carriage of dangerous goods. World VTS Guide; etc. --- National regulations, including local bye laws → Sources of national legislation and promulgation → Bye laws → Notices to Mariners and other nautical publications --- Carriage of relevant ship certificate
	■ **Roles and responsibilities** > ship masters > Marine pilots > VTS > Allied services	**Roles and responsibilities** *Explain the roles, responsibilities of and relationships between ship masters, marine pilots, VTS and Allied services* --- Ship masters → Responsibility of the ship master → Responsibility of the ship master to VTS --- Marine pilots → Responsibility of the pilot to the ship master → Responsibility of the pilot to VTS --- VTS → Responsibility of the master and pilot → Responsibility of VTS to allied services --- Allied services → Knowledge of allied services (i.e. harbour master, port authority)
	■ **VTS environment** > Area limits, boundaries, separation zones, shipping lanes and channels > Prohibited or dangerous areas, safety zones, anchorages and restricted areas > Traffic separation schemes > Traffic separation criteria > Geographical constraints	**VTS environment** *Demonstrate a knowledge of the VTS operational area, including geographical features, traffic routing measures and aids to navigation* --- Area limits, boundaries, separation zones, shipping lanes and channels --- Prohibited or dangerous areas, safety zones, anchorages and restricted areas --- Traffic separation schemes --- Traffic separation criteria --- Geographical constraints --- Aids to navigation (e-navigation, virtual aids to navigation)

Module no,	Subject Area	Description
Module 2 Traffic Management Instructor: Captain K. Inoue	■ **Principles of waterway and traffic management** > Planning > Risk Management > Allocation of space > Criteria which determines the parameters for the safe passage of shipping > Ais to navigation	**Principles of waterway and traffic management** *Demonstrate a knowledge of the procedures for maintaining a safe and efficient waterway* --- Planning → Routing Channel geography Traffic restriction area Anchorage areas Obstructions → Type of traffic Ship characteristics Cargo characteristics → Information Traffic Waterway (Notice to shipping, regattas) Environmental (visibility, waterspouts, dust storms, pollution) --- Risk management → Controllable risks Experience of VTS Operators Utilisation of equipment Contingency plans/pollution → Uncontrollable risks Geography Meteorological factors Hydrographic factors Traffic congestion → Procedures to mitigate risks --- Allocation of space → Ships domain → Authorising ship movements → Allocation of priorities Criteria which determine the parameters for the safe passage of shipping → Water reference level Tide gauges Correlation between predicted and actual water levels Allowance for delayed manoeuvres → Safe underkeel clearance Draught measurements vertical ship movements, allowance for squat and swell Safety margins in rock and soft sea-bed conditions Net under-keel clearance Gross under-keel clearance, including allowance for weather; exposure and topography → Safe air draft Factors affecting and sources of information for calculating air draft → Safe channel width Principles of devising a safe width under calm and adverse conditions Limiting factors in precise navigation Adequacy of safe under-keel clearance across channel width Calculation of safe channel or fairway width → Shipping movements Movements authorized only when safe criteria have been determined and conditions satisfactorily met

Module no,	Subject Area	Description
Module 2 Traffic Management Instructor: Captain K. Inoue	■ **Traffic monitoring and organisation** > Traffic patterns > VTS sailing or route plans > Situation analysis	**Traffic monitoring and organisation** *Demonstrate a knowledge of traffic patterns, sailing/route plans and perform situational analysis required to maintain a safe and efficient waterway* --- Traffic patterns → Normal traffic patterns → Non-routine items affecting traffic patterns (rogue vessels, weather) --- VTS sailing or route plan → Developing a plan to ensure safe and efficient movement of vessel traffic --- Situation analysis → Conflict assessment Spatial separation → Determination of relevant traffic Participating/non-participating traffic National and international regulations Local procedures Tools for determining relevant traffic - risk of collision, unclear intentions, non-routine action, blind corner etc
Module 3 Equipment Instructors: Mr. M.Noda & Mr.R.Shigematsu	■ **Telecommunications** > Fax > Telephone > Telex > E-mail > Electronic Messaging	**Telecommunications** → Fax Explain and demonstrate the transmission and reception of facsimile message --- → Telephone Describe the operation of differenct telephone system/telephonologies and their functionalities State the necessary of prioritisation --- → Telex Explain the fundamental operation of telex Describe how to transmit/receive telex messages --- → E-mail Explain the fundamental electronic mail Demonstrate how to transmit/receive E-mail --- → Electronic messaging Discuss and explain the evolving electronic messaging system
	■ **Radar, audio, video and other sensors** > Basics of coastal radar and its applications to VTS > Generic VTS radar display features > Audio equipment > Video equipment > Recording/replay equipment > Meteorological and hydrological sensors	**Radar, audio, video and other sensors** Radar → Describe the basics of coastal radar and its application to VTS Coastal radar concepts Application of coastal radar to VTS Sensor fusion System warnings → List the features of generic VTS radar display Detection, acquisition and tracking VTS traffic image warnigs --- Audio → Describe the function and different types of audio equipment VHF radio Telephone system

Module no,	Subject Area	Description
Module 3 Equipment Instructors: Mr. M.Noda & Mr. Shigematsu	■ Radar, audio, video and other sensors > Basics of coastal radar and its applications to VTS > Generic VTS radar display features > Audio equipment > Video equipment > Recording/replay equipment > Meteorological and hydrological sensors	Video → Describe the function and different types of recording/replay equipment Closed circuit (CCTV) Low light (LLTV) Infra-red --- Recording/replay → Describe the function and differnt types of recording/replay equipment Audio recording Video recording Data recording Synchronization for replay --- Meteorological and hydrological → Describe the application of meteorological and hydrological equipment Tide gauges - remote height of tide indicators Tidal stream indicator - remote indications Barometer Temperature/humidity indicators Anemometers Visibility
	■ **VHF/Direction finding** > Purpose and basic principles of VHF/DF > Accuracies of VHF/DF bearings	**VHF/Direction finding** Describe the purpose and basic principles of VHF/Direction finding --- State the accuracies of VHF/DF bearings
	■ **Tracking systems** > Introduction to radar tracking systems and ARPA > Introduction to manual tracking systems > Introduction to use of Automatic Identification Systems (AIS) for tracking	**Tracking systems** Explain the principles of radar tracking and Automatic Radar Plotting Aid (ARPA) → ARPA theory → Vector analysis → Limitations and capabilities → Tracking tags → Information available → Limitations/dangers --- Explain the application of manual tracking systems → Strips → Cards → Electronic strips and information management → Ship movement reports --- Describe the application of Automatic Identification Systems (AIS) for tracking → Modes of operation of AIS
	■ **Information management** > VTMIS > Vessel information > Allied services	**Information management** Explain and demonstrate the use Vessel Traffic Management Information Systems (VTMIS) → Introduction to VTMIS → Co-ordination of information with users/allied services --- List and describe the relevance of vessel information → Prioritizing of participating vessels → Anticipating calls using radar images → Information from ships - name, call sign, type, position, speed, destination, ETA,special reports → Information to ships - content, timely, relevant --- Identify and describe the different allied services within a VTS area → Information from allied services → Information to allied services - content, timely, relevant

Module no,	Subject Area	Description
Module 3 Equipment Instructors: Mr. M.Noda & Mr.R.Shigematsu	■ **Equipment performance monitoring** > Normal operation expectations > Troubleshooting	**Equipment performance monitoring** Describe the expected normal operating parameters of equipment Describe and demonstrate the different troubleshooting methods
	■ **Evolving technologies** > New technologies as appropriate	**Evolving technologies** Describe new technologies, as appropriate
Module 4 Nautical Knowledge Instructor: Doctor H. Nishida	■ **Chart work** > Chart information and terminology > Plotting positions on paper charts > Course/speed/distance and time calculations > True and magnetic courses > Passage planning > Tides and tidal streams > Correcting paper charts and publications	**Chart work** Chart information and terminology Demonstrate knowledge of chars and the information contained thereon → Finding positions on the globe - lat/long, great circle → Chart projections and geodetic datums Use of charts in VTS → Identify and describe chart symbols Symbols associated with VTS Importance of symbols in a VTS area Importance of symbols to the mariner
		Plotting positions on paper charts → Demonstrate the basic plotting instruments Parallel rules Compass/dividers Loran-C interpolations, if applicable → Demonstrate the ability to plotting on charts (using various projections as appropriate) Using parallel rulers Using parallel rulers and compass/dividers Measuring distance on charts → Explain the use of Lines of Positions (LOPs) Bearing Ranges Loran-C, if applicable Combination of LOPs Definition of "cocked hat" LOPs given from ships and calculated from shore positions
		Perform exercises on speed/distance/time caluculations → Introduction of S, D, T formula (S x T = D) → Use of formula in simple situations → Use of formula in complex situations --- Explain the theory and practice use of true and magnetic courses → Perform exercise in laying of a true course Using parallel rulers to compass rose Using parallel rulers to line of longitude on Mercator charts Reading courses off charts → Perform exercizse in Dead Reckoning (DR) positions Accepted symbology used on charts Caluculating and measuring for DR positions → Perform exercise in compass and magnetic courses Definition of variation, deviation and compass error Problems assoicated with using magnetic compass or true courses from shore-based position

Module no,	Subject Area	Description
Module 4 Nautical Knowledge Instructor: Doctor H. Nishida	■ **Chart work** > Chart information and terminology > Plotting positions on paper charts > Course/speed/distance and time calculations > True and magnetic courses > Passage planning > Tides and tidal streams > Correcting paper charts and publications	Describe the importance of passage planning → The requirement for a vessel to create and use a passage plan → The four key elements of a pasage plan - appraisal, planning, execution and monitoring → Ascertaining waterway infromation using charts and symbols → Formulating plans of action using infromation provided, chart information, tidal information, etc. → Continggency planning
		Describe the effect of tides and tidal streams Introduction to tide and tidal stream → Explain the definition of terms relating to tides and tidal streams Chart datume Spring/neap tides Ebb/flow/slack/eddies Set/drift/rate Diurnal/semi-diurnal → Demonstrate the use of tide and current tables Information contained in tide tables Reading tide tables Reading current tables Overview of calculating intermediate heights and times Overview of primary and secondary ports → Demonstrate the method of using of tidal streams in calculating an Estimated Position (EP) Review of Dead Reckoning Position (DR) Explanation of EP Effect of tides and currents Effect of wind/leeway
		Correcting paper charts and publications → Introduction to Notices to Mariners Introduction to written Notices to Mariners Introduction to broadcast notices to shipping, including fishing vessels → Methods of correcting publications Procedures for corrections Recording corrections → Methods of correcting paper charts Procedures for corrections Recording corrections Temporary and preliminary corrections

Module no,	Subject Area	Description
Module 4 Nautical Knowledge Instructor: Doctor H. Nishida	■ **Collision regulations** > International Regulations for Preventing Collisions at Sea (COLREGS)	**Collision regulations** Cite and explain the international Regulations for Preventing Collisions at Sea Definition of Specific terms in the Collision Regulations → Application of the Collision Regulations → Application for ships → Application as pertains to VTS → Enforcement of regulations Basic steering and sailing rules → International regulations → National specifications and variances Conduct of vessels in specific conditions → Conduct in narrow channels → Conduct in Traffic Separation Schemes International Distress Signals → Annex IV to the Collision Regulations Basic lights, shapes and sounds ans described in the Regulations Description of the contents of Annexes I and III, and parts E and F
	■ **Aids to navigation** > International Maritime Buoyage > Radar beacons > Satellite and differential satellite position fixing > Terrestrial position fixing systems > Virtual aids to navigation	**Aids to navigation** Describe international maritime bouyages → Introduction to the International Maritime Buoyage System Latest systems (IALA A & B) Cardinal systems Implications of various systems Regulations pertaining to buoyage systems → Characteristics of floating aids Types of buoys Placement of buoys Fundamental rules for safe navigation Chart symbols and abbreviations for floating aids Numbering of aids Topmarks → Characteristics of fixed aids Day beacons Light beacons Ranges Sector lights Leading lights Fog signals

Module no,	Subject Area	Description
Module 4 Nautical Knowledge Instructor: Doctor H. Nishida	■ Aids to navigation > International Maritime Buoyage > Radar beacons > Satellite and differential satellite position fixing > Terrestrial position fixing systems > Virtual aids to navigation	Explain the function of radar beacons → Introduction to radar beacons (RACONS / Ramarks) Purpose Special characteristics Recognition and identification → Implications of radar beacons (RACONS / Ramarks) Limitations Users --- Explain the theory and use of satellite and differential satellite position fixing systems → Introudction to global navigation satellite systems (GNSS) Purpose of GNSS and DGNSS Types of GNSS and DGNSS → Implications to VTS Limitations --- Explain the theory and use of virtual aids to navigation → Introduction to and purpose of virtual aids to navigation
	■ **Navigational Aids (Shipborne)** > Radar > Gyro andmagnetic compasses > Other navigational aids	**Navigational Aids (Shipborne)** Explain the theory of radar and demonstrate its operation → Use of radars on board ships Fundamentals of RADAR theory Radar controls Factors affecting radar detection Limitations of ships radars Head up/North up display Relative/true motion Factors affecting iterpretation Introduction to tracking systems and ARPA ARPA features and use of radar for collision avoidance Regulations and acts governing performance and carriage of radar --- Explain the theory and use of gyro and magnetic compasses → Use of magnetic compass on board vessels Sources of error Corrections Reliability → Use of gyro compass on board vessels Accuracy Corrections Reliability --- Explain the theory and use of other navigational aids → Introduction to echo sounders → Introduction to speed logs Principles of speed logs Accuracy of speed logs → Introduction to ECDIS and ECS Means of displaying information Symbology Uses and limitations Chart datums

Module no,	Subject Area	Description
Module 4 Nautical Knowledge Instructor: Doctor H. Nishida	■ **Shipboard knowledge** > Ship terminology – Technical > Ship terminology - Nautical phrases > Types of vessels > Types of cargo > Ship stability > Propulsion systems > External forces > Vessel bridge procedures	**Shipboard knowledge** List and explain the ship terminology - technical → Ship construction terms → Ship dimensions - i.e. LOA, LBP, beam, draught, air draught → Hull structure - i.e. types of bows, sterns → Loadlines draught marks --- List and explain the ship terminology - nautical phrases → Directions/relative bearings → Numbers → Mooring/anchoring terms List and describe the types of vessels → General cargo ships → Tankers → Bulk carriers → Combination carriers → Container ships → Passenger ships → Ro-ro ships → Fishing vessels → Offshore vessels → Rigs → Offshore supply → Offshore tugs → Tugs → Pilot boats → SAR vessels → Seaplanes → WIG → Ships operated by allied services --- List and describe the types of cargo → General cargo → Refrigerated → Liquid → LPG/LNG → Bulk → Containers → Ro-ro → Fish → Livestock → Dangerous goods List and ship stability → Introduction to ship stability Definitions of heel, list and trim Factors influencing ship stability Recognising dangerous situations regarding ship stability --- Explain the theory and practice of ship handling → Effect of pivot point on ship handling → Line of approach → Stopping characteristics → Turning characteristics → External forces on ship handling - winds and tides → Effect of interaction and squat → Vessel manoevrability → Different types of rudder → Different types of propeller → Thrusters → Use of tugs

Module no,	Subject Area	Description
Module 4 Nautical Knowledge Instructor: Doctor H. Nishida	■ **Shipboard knowledge** > Ship terminology – Technical > Ship terminology - Nautical phrases > Types of vessels > Types of cargo > Ship stability > Propulsion systems > External forces > Vessel bridge procedur	List and describe different propulation systems → Introduction to propulation systems Diesel, diesel electric Gas turbine Steam Jet --- Explain the list of external forces on vessels → Meteorological elements Effects of wind on safety of watertway and ship manoeuvrability Effects of reduced visibility on safety of waterway Effects of high and low pressure systems on water height and depth → Oceanographic factors Effects of tides and currents on safety of waterway and ship manoueuvability Application of COLREGS with regards to tides and currents Planning waterway movements taking into account tides and currents Describe vessel bridge procedures → Maintaining a navigational watch Under routine circumstances In pilotage waters In non-pilotage restricted waters → Response to emergencies which arise in a VTS area Regulations governing transsit of vessels with regard to special circumstances Expected actions on board vessels during special circumstances → Bridge operations (arrival & departure) Berthing and unberthing Anchoring
	■ **Port operations and other allied services** > Pilotage operations > Port operations, including contingency plans > Security > Tugs and towing > Ships agents	**Port operations and other allied services** Explain pilotage operations → Introduction to pilotage operations Pilotage waters Responsibilities of pilots Master/pilot/VTS relationship --- Describe port operations including contingency plans → Overview of port operations Interaction of all agencies within a port Responsibilities of harbour masters and berthing masters Clearance procedures Intermodal transport → Regulations and acts in effect within harbour limits Contingency plans Pollution SAR Grouding Salvage Fire Security Health Cite and explain the ISPS code with relation to ship and port security → Overview of ISPS code Port plicing Interaction with municipal, national and international security → General overview of security of VTS centres and outstations --- Explain the organisation of tugs and towing → The organisation of tugs within a port --- Explain the role of ships agents → General duties of ships agents → The role of ships agents

Module no,	Subject Area	Description
Module 5 Communication Co-ordination Instructor: Mr. M.Noda	■ **General communication skills** > Inter personal communication > Procedures to enhance effective communication > Verbal and non-verbal communications > Cultural aspects and common understanding of messages communicated	**General communication skills** *Possess the knowledge of the basic principles of communication and coordination .* --- Describe active listening skills → The purpose of interpersonal communication → Effective team communication → Empathy --- State the importance of clear, concise, accurate, timely and meanful communication → Reading - back received message → Breaking message into smaller components → Rephrasing message --- Demonstrate verbal and non-verbal communications → Voice inflection → Non-verbal signals or symbols - internal → Non-verbal signals or symbols - external --- Identify words that have muliple interpretations and could negatively impact communications → Language differences, both cultural and regionally → Alternative meanings of words → Cultural aspects in decision making processes - potential impacts → Cultural aspects in understanding of messages - potential impacts
	■ **Communications** > Collection > Evaluation > Dissemination	**Communications** Demonstrate and explain data collection → Formal messages - ship reporting Ship - ship Ship - shore Shore - ship Shore - shore → Electronic data exchange Ship - ship Ship - shore Shore - ship Shore - shore --- Explain the use of a communication plan of action → Define as routine / non-routine → Define emergencies - incidents / accidents → Identify objecttives → Define resouces → Formulate plan in accordance with contingency plan → Consider "worst case" / "what if" scenario → Modify plan or objectives as necessary

Module no,	Subject Area	Description
Module 5 Communication Co-ordination Instructor: Mr. M.Noda	■ **Communications** > Collection > Evaluation > Dissemination	Demonstrate the use of messages and reports → Formal messages to vessels : information/warning/advice/instruction Phrasing Timing Content → Formal messages - waterway information : information/warning/advice/instruction Phrasing Timing Content → Formal messages - allied services : information/warning/advice/instruction Phrasing Timing Content --- Special reports → Phrasing → Timing → Content Informal messages → Phrasing → Timing → Content
	■ **Log and record keeping** > Objective > Manual log keeping > Electronic log keeping > Statement and report writing	**Log and record keeping** List and describe logs and records used by VTS → Accuracy of logs & records Factual Complete Chronological Legible Standardised → Retention of logs & records Manual : as per national statutory requirements Electronic : as per national statutory requirements Legal implications Statistical process control Local/national/international databese for accident investigation

Module no,	Subject Area	Description
Module 5 Communication Co-ordination Instructor: Mr. M.Noda	**■ Log and record keeping** > Objective > Manual log keeping > Electronic log keeping > Statement and report writing	Describe the methods of keeping a log Manual log keeping → Introduction to manual logs Purpose Benefits Difficulties → Methods of recording Hand written Printed copy → Filing Purpose Storage Access Electronic log keeping → Introduction to electronic logs Purpose Benefits Difficulties → Methods of recording Voice Radar/video Electronic data input devices → Filling Back-up arrangements Storing State the purpose and requirements for statement and report writing → Statutory → Electronic and manual → Legal implications
Module 6 VHF Radio Instructor: Mr. R.Shigematsu	**■ Radio operator practices and procedures** > GMDSS Restricted Operator's Certificate (ROC) or internationally recognized radio certification	**Radio operator practices and procedures** *Describe and perform exercises on radio operator practices and procedures* GMDSS Restricted Operator's Certificate (ROC) Internationally recognized radio ceritication
	■ VHF radio systems and their use in VTS > Frequencies in the VHF maritime mobile band (ITU RR Appendix S18) > National frequency assignments to VTS	**VHF radio systems and their use in VTS** *Describe VHF radio systems and their use in VTS* Frequencies in the international VHF maritime mobile band → Single frequency and two frequency channels Simplex working Semi duplex Duplex working → Port operation and ship movement frequencies → Distress, safety and calling frequencies Radiotelephone DSC → Automatic Identification Systems (AIS) Introduction to AIS Application of AIS to VTS Restrictions on the use of Radio Regulations (RR) Appendix S18 frequencies National frequencies assigned to VTS → Assignment and use of single and two frequency channels for VTS purposes → National restrictions on the use of RR Appendix S18 frequencies

Module no,	Subject Area	Description
Module 6 VHF Radio Instructor: Mr. R.Shigematsu	■ **Operations of radio equipment** > Introduction to basic VTS VHF radiotelephone,DSC and AIS equipment > Controls and operation of VHF radiotelephone equipment, > Controls and operation of VHF DSC equipment, > Controls and operation of VHF AIS equipment	**Operations of radio equipment** *Describe and demonstrate the operation of radio equipment* Introduction to basic VTS VHF radiotlephone, DSC and AIS equipment → Principles, controls and operation of VHF Channel spacing Modulation Range Principles, contorols and operation of DSC → Format of a transmission sequence → Message composition → Error checks Principles, controls and operation of AIS → Format of a transmittion sequence → Message composition → Automatic and manual modes
	■ **Communication procedures, including SAR** > VHF radiotelephone procedures > VHF DSC communication and VHF AIS communication procedures > Equipment failure and channel saturation	**Communication procedures, including SAR** *Describe and demonstrate the communication procedures, including SAR* VHF Radiotelephone procedures → Distress, urgency, safety and calling DSC communication procedures using VHF → Distress, urgency, safety and calling AIS communication procedures using VHF → Distress, urgency, safety and calling Equipment failure and channel saturation
Module 7 Personal Attributes Instructor: Mr. S.Akaishi	■ **Interaction with others and Human relation skills** > Public relations > Establishing and sustaining a good working relationship with VTS stakeholders > Negotiations with VTS stakeholders > Successful conflict resolution > Team working skills	**Interaction with others and Human relation skills** *Have the knowledge and ability to conduct their duties in a manner which conforms to accepted principles and procedures.* Describe public relations policy → General introduction to the maintenance of good public relations. → The media and press and their requirements. → Information that can be provided to others and the manner of its release. → Dealing with traumatized individuals. --- Describe how to establish and sustain working relationships → Internal → External Importance of maintaing the trust of all VTS stakeholders Ship masters Pilots Other authorities and organisations Allied services Other services

Module no,	Subject Area	Description
		Identiy methods of conflict resolution → When and how to intervene
Module 7 Personal Attributes Instructor: Mr. S.Akaishi	**others and Human relation skills** > Public relations > Establishing and sustaining a good working relationship with VTS stakeholders > Negotiations with VTS stakeholders > Successful conflict resolution > Team working skills	→ External --- Describe the benefits of team working skills → Characteristics of leaders and followers → Adaptability/ flexibility → Diplomacy → Ability to analyze the role of VTS → Decision making process Tracking initiative Prioritising tasks Thinking critically Communicating with team members Assertiveness
	■ **Responsibility and reliability** > Safety awareness > Health awareness > Punctualit > Attentiveness > Importance of maintaining the trust of all VTS stakeholders	**Responsibility and reliability** Explain the role of health and safety performing the VTS mission → Personal safety → Safety of VTS stakeholders → Personal health Causes of stress Managing work related stress Managing personal stress Substance abuse Cite the reasons for time management → Relief of watch → Planning → Reducing fatigue Describe how professionalism and mission focus is important → Working climate → Team spirit → Awareness of personal circumstances
Module 8 Emergency Situations Instructor: Mr. S.Akaishi	■ **International, national, regional, local regulations** > Scope of responsibility and authority to act > Local regulations, bye laws	**International, national, regional, local regulations** *Explain national and international regulations and procedures relating to emergency situations, security alerts, pollution response and special circumstances* --- Scope of responsibilities and authority to act in emergency situations (local/regional/national/international) --- Local regulations, bye laws → Supporting and allied services Define the supporting and allied services which are available Define the assets which are available for deployment

Module no,	Subject Area	Description
Module 8 Emergency Situations Instructor: Mr. S.Akaishi	■ **Contingency plans** > Introduction, preparation and implementation of contingency planning > Preparation and use of checklists	**Contingency plans** *Describe the preparation and implementation of contingency plans* --- Introduction, preparation and implementation of contingency plans → Collisions → Groundings → Marine pollution (air/water) → Fire, Hazardous cargoes → SAR incidents, including man overboard → Other contingency plans including, but not limited to the following: medical, casualty, evacuation, special weather conditions Organizations to be alerted → Simultaneous emergencies Describe the preparation and use of checklists → Introduction and use of checklists Description of a checklist → Authority to prepare, implement, issue and update checklists
	■ **Priorities and respond to situations** > Ascertain nature of incident > Commence alerting procedures > Navigational warnings > Co-ordination with, and support to, allied services > Maintaining communications > Updating of situation reports	**Priorities and respond to situations** *Explain the steps in classification of an emergency situation and explain the activation of the relevant contingency plans* --- Prioritise incident:: - Data collection - Evaluation - Classification of incident Response planning and action: - Commence alerting procedures - Maintaining safe and efficient flow of traffic - Co-ordination with, and support to, allied services - Updating of situation reports - Navigational warnings (if required) May include but not be limited to: - Collisions - Groundings - Marine Pollution - Fire - Hazardous cargoes - SAR incidents - Other special circumstances
	■ **Record activities concerning emergencies** > Objective of recording activities during emergency situations > Introduction to methods of recording activities during emergency situations > Information which should be recorded security of recorded information	**Record activities concerning emergencies** *Describe objectives and procedures for recording activities during emergency situations, including methods, the information recorded and security of information* --- Objective of recording activities during emergency situations → Introduction to methods of recording activities during emergency situations → Information which should be recorded → Security of recorded information

Module no,	Subject Area	Description
Module 8 Emergency Situations Instructor: Mr. S.Akaishi	■ **Maintain a safe waterway throughout emergency** situations > Maintaining traffic management and monitoring procedures	**Maintain a safe waterway throughout emergency** *Describe the actions required to ensure the protection of the VTS area and, as far as practicable, maintain a safe and efficient flow of traffic* --- Maintaining traffic management and monitoring procedures → Alternative routing arrangements → Diversionary procedures (traffic in immediate incident area) → Anchorage areas → Introduction of emergency speed restrictions → Emergency alterations to VTS sailing/route plans and passage plans
	■ **Internal/external emergencies** > Procedures for individual emergencies > Maintenance of VTS Operations	**Internal/external emergencies** *Describe the procedures for dealing with internal/external emergencies affecting normal operation of a VTS centre* --- Procedures for individual emergencies → Checklists Maintenance of a VTS Operations → Communications → Traffic image
SOP & User Manual Insturctor: Mr. S.Akaishi	■ **Development of SOP**	**Development of SOP** Development of SOP (Standard Operation Procedure) for the Dumai VTS
	■ Development of the User Manual	**Development of the User Manual** Development of the User Manual for the Dumai VTS

Attachment 4

Drafts of SOP and User Manual

Dumai VTS Sub-Center Standard Operation Procedure (Draft)

Project on Enhancing of Vessel Traffic Service System

Management Capability Phase 2 Training

This "SOP" was created by the trainees themselves as part of improving the ability of Dumai VTS candidate operators. Of course it is not official, nor authenticated. All of us Instructor wish to publish as an official document in the near future after evaluation of DGST as National Competent Authority and Dumai NAVIGASI as VTS Authority.

Instructor: Japan Aids to Navigation Association

JAPAN INTER NATIONAL COOPERATION AGENCY

JAPAN AIDS TO NAVIGATION ASSOCIATION (JANA)

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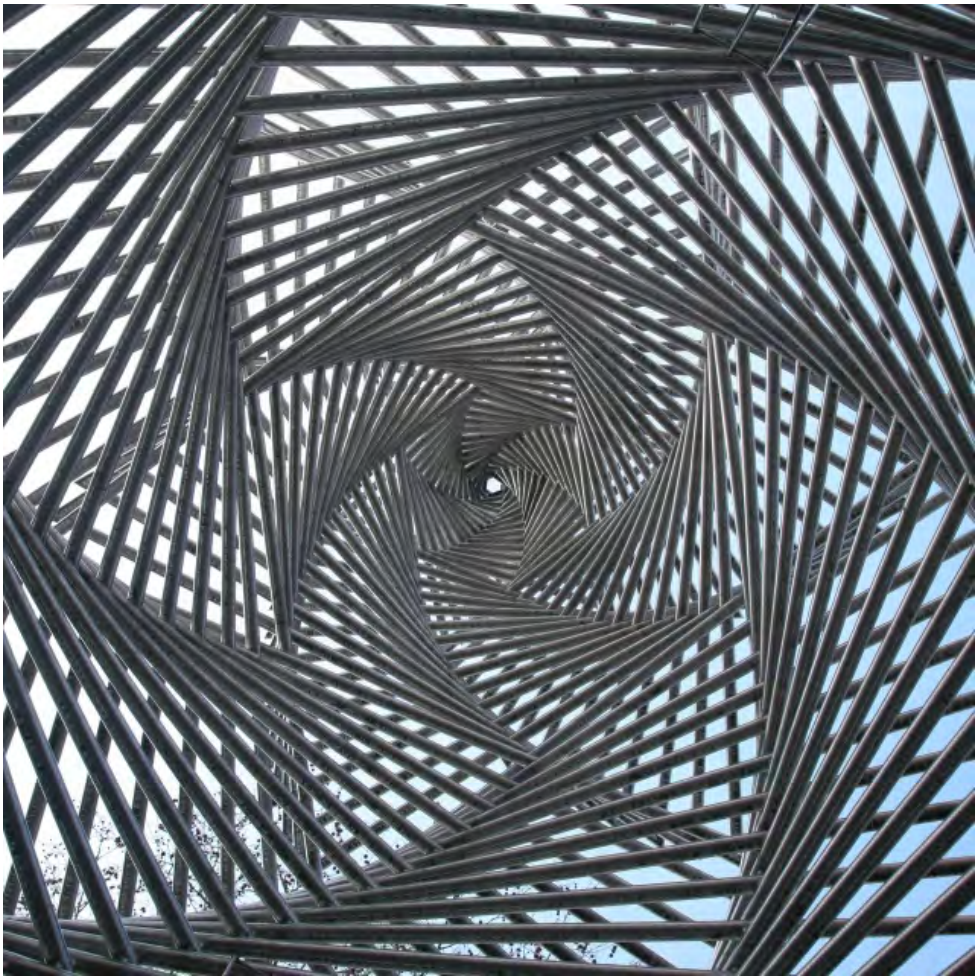


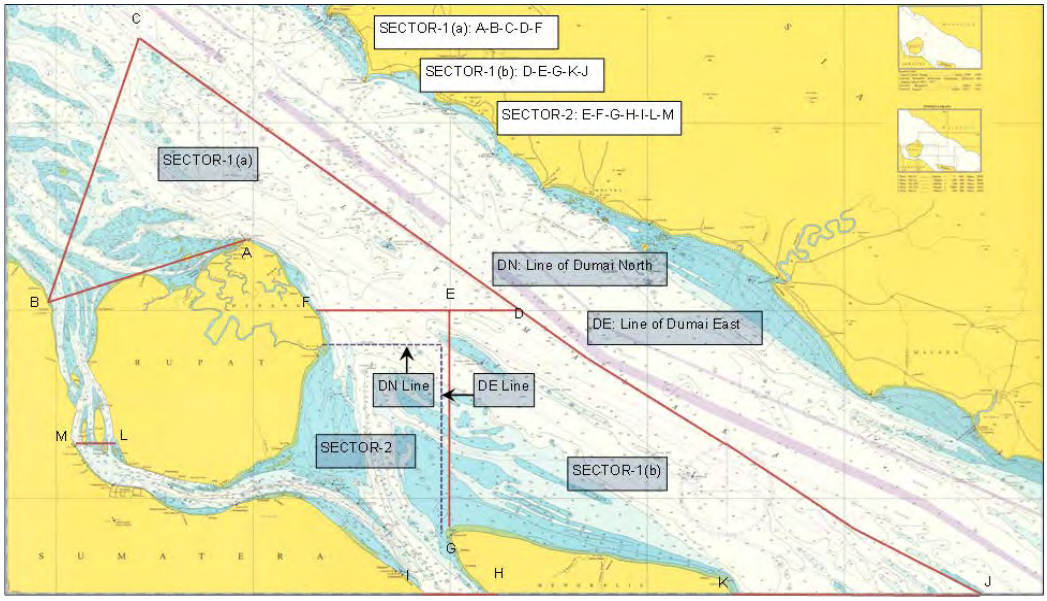
More Detail Go to Next Page

1.1 Introduction
Standard Operations and Procedures of Vessel Traffic Service Dumai are operational guide/ manual for the personnel of VTS in carrying out duties in accordance with instructions and directives which is issued by authorized representative of Directorate General (DGST) of sea Transportation.
This manual of Standard Operating Procedures (SOP) is intended to *provide operational guidance to correctly authorized VTS personnel* in carrying out their duties. Procedures must be administered in *accordance* with *any other instructions or directives as issued by duly authorized representatives of DGST.*
The manual is constructed in four sections; ● Introduction and General Notices ● *Internal Procedures* – procedures that cover the *day-to-day running* of Dumai Sub-centre, including the operation of systems and sensors, *interactions among the staff and the internal management of data.* ● *External Procedures* – procedures that govern the interaction with *participating vessels and allied services* (defined as services actively involved in the safe and efficient passage of the vessel through the VTS area). ● *Annexes* – Compilation of *pro-forma examples* and amplifying information for the application of the SOPs.

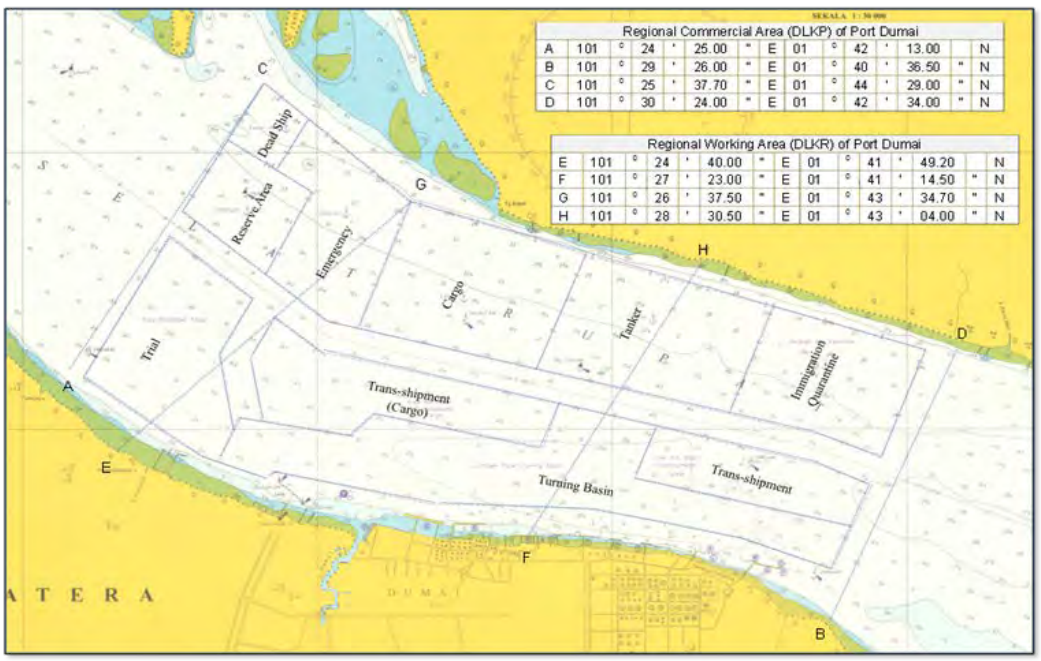
1.1.1 Aims
The aims of Dumai VTS Sub-Center to provide a service for the *marine and public stakeholders* to ensure *Safety of life, Efficient movement of vessel traffic, Protection of the environment, Port security.*

1.1.2 Objectives
● Monitoring and providing information to vessels with in its *prescribed area of operation;*
● *Managing integrated marine information and database systems*;
● *Screening vessel status for compliance with requirements*;
● Co-ordination of communications;
● Participating cooperatively with other VTS Centres in the *mandatory Ship Reporting System in the Malacca and Singapore Straits.*

1.2 Dumai VTS Area Description
1.2.1 Establishment of VTS at Dumai
Dumai VTS Sub-Center has been established at Dumai, Republic of Indonesia for the purpose of *providing a VTS Information service (INS)*. Sensor sites are located at Tg. Medang and Tg. Parit. Equipment includes X-band Radar (Tg. Medang), AIS Base stations (Tg. Medang and Tg. Parit), CCTV (Tg. Medang), Meteorological Sensors (Tg. Medang) and VHF Communication capability (Tg. Medang and Tg. Parit).
Tasks of Dumai VTS –Sub Center involved.
To monitor and interact with *vessels transiting Indonesian waters within the Mallacca Strait Tg. Medang Area Sector 1(a) and Tg. Parit Area Sector 1 (b) and Dumai ports and vicinity (Sector 2) as well as stakeholders*
To *develop VTS staff capabilities,*
VTS area should be included in any publication for the use of Mariners who will be requested or required to participate in it.



SECTOR 1(a)		*SECTOR 1(b)*		*SECTOR 2*	
Indonesian waters within the Mallacca Strait Tg. Medang Area		*Indonesian waters within the Mallacca Strait Tg. Parit Area*		*Dumai ports and vicinity area*	
				I. 1º-35'-0.20" N	*101º-59'55.66" E*
A. 2º-07'-28.58" N	*101º-39'-20.99" E*	*D. 2º-00'-02.31" N*	*102º-06-58.37" E*	*J1º-30'-34.26" N*	*102º-03'18.12" E*
B. 2º-01'-01.66" N	*101º-18'-46.65" E*	*E. 2º-00'-03.45" N*	*101º-59-56.06" E*	*K. 1º-30'-34.61" N*	*101º-56-42.52" E*
C. 2º-30'-523.99" N	*101º-18'-46.65" E*	*G. 1º-35'-20.20" N*	*101º-59-55.66" E*	*L. 1º-45'-24.29" N*	*101º-21'-58.14" E*
D. 2º-00'-02.31" N	*102º-06-58.37" E*	*K. 1º-30'-35.14" N*	*102º-28-08.19" E*	*M 1º-45'-24.29" N*	*101º-26'-29.02" E*
F: 2º-00'-02.37" N	*101º-46'-02.40" E*	*J. 1º-30'-35.47" N*	*102º-47-37.43" E*	*F 2º-00'-02.37" N*	*101º-46'-02.40" E*
				E. 2º-00'-03.45" N	*101º-59-55.66" E*



1.3 *Vessels required participating*
Vessels of the following categories that enter depart or move within the Dumai VTS Area are *required to participate by reporting their activities to the Dumai by radio or any other means as specified in the published Notice to Mariners, Act, Regulation or User's Guide.*
● Vessels of *300 GT* and above;
● Vessels of *30 metres* or more in length;
● Vessels engaged in *towing or pushing with a combined length of 30metres* or more
● Vessels of *any tonnage carrying hazardous cargo*, as defined in paragraph 1.4 of resolution MSC.43(64)
● *All passenger vessels that are fitted with VHF* regardless of length or GT; and
● *Any category of vessels less than 30metres in length or less than 300GT which are fitted with VHF* and in an emergency uses the appropriate traffic lane or separation zone in order to avoid immediate danger.

1.3.1 Exempt Vessels
The following vessels are exempt from reporting:
● *Military* vessels of the Republic of Indonesia
● Indonesian *government* vessels such as vessels engaged in patrol activities
● *Support vessels* engaged in support of authorized marine events and special operations.

2. *Watch keeping responsibilities of VTS Staff*
2.1 General
Do not hand over a watch, if the *person taking over the watch may be unfit* in any respect to take over. In such circumstances, inform the VTS Supervisor and continue keeping a watch until relieved by an authorized person.

2.2 Responsibilities
VTS operators are responsible for the following key activities:
● Ensure that Dumai VTS is operated within *port, national and international guidelines and legislation.*
● Operate equipment installed for the *detection, surveillance and tracking of and communication with vessels within and approaching Dumai VTS Area*.
● *Maintain records* and associated databases.
● Follow operating procedures for VTS and for the *implementation of contingency plans.*
● *Report* any apparent *non-compliance or infringement of laws and directions* to the VTS Supervisor.
● *Maintain appropriate standards of communications on channels* assigned for Dumai VTS purposes.
● Act within *entrusted and delegated authority*.
● Develop productive working *relationships with colleagues, allied agencies and stakeholders.*
● Give directions required under any active *Memorandum of Understanding* (MOU).
● Perform other related duties as *directed by the VTS Supervisor.*
● *The VTS Supervisor must be informed* if *incidents* take place during the watch, including ships that *fail to report* in accordance with ship's duty to keep in radio contact when *arriving at and leaving* a harbour in the Dumai VTS Area, or ships which sail *carelessly* or sail against current decisions, as well as any other *irregularity* made by ships within the Dumai VTS Area.
● To cooperate with *all audits conducted or authorized by DGST.*

2.3 VTS Supervisor
The VTS Supervisor is the duly appointed *representative* of the VTS Centre Manager *while on duty* and is responsible to ensure the overall effectiveness of operations and supervision of personnel. In this respect, *VTS operator* within the operations room will receive *direct instructions only from the VTS Supervisor*. *VTS supervisors have the discretionary authority to issue local broadcast notice to mariners.* In addition, the VTS Supervisor will ensure *Alarms, reports and all relevant incidents* are reported in accordance with *current directions*: According to the circumstances, the time allocated for *briefing may be extended in case of busyness*;
● *All marine occurrences, incidents, accidents and other matters* coming within the rule of the Centre Manager, Port authority or other allied service are *communicated to the appropriate office (Coast Guard, Search & rescue Marine police, Navy) as quickly as practicable*; and that
● The *operation room is kept free* of destructions including *unauthorized personnel* or activities that cause a disruption to operations.
● In carrying out their duties, *all VTS staff are instructed* that all watch duties are to be performed in *accordance with current decisions, orders and agreements and memorandum of understanding (MOU).*;
● All duties are performed exercising *great care and good order;*
● The information and the *database system is carefully updated*;
● Ships in the VTS area are informed about any obstacles/dangerous situations, which the *staff is familiar with or may reasonably expect to occur*.
● That the *Centre Manager is informed* of any anomalies or problems associated with the Centre or its operation *as soon as possible*.

2.4 Centre Staffing, Training and Certification of Staff
2.4.1 Staffing
The Dumai VTS operations room is staffed on continuous *(24/7) basis* by (*4) staff members comprising (1)VTS Supervisor and (2)VTS operator and (1) technician* who is responsible for equipment- tasks as assigned by the VTS supervisor. *The total operations staff of the Dumai VTS* including VTS Centre manager will be (25) in addition to *technical maintenance staff of (2)*. Other support staff is recommended for administration (2), security, logistics and building maintenance (*1*).

2.4.2 *Watch Rotation*
VTS Supervisors and other VTS operator will follow an on-duty rotation designed/approved by DGST. Normally, watch periods *will not exceed 9 consecutive hours per calendar day*; however, at the discretion of VTS Supervisors, VTS operator may be assigned a longer period of time, *not to exceed 12 consecutive hours to deal with non-routine operational requirements*. Watch change times are at: (0700, time1400 and 2100).
VTS Supervisor duty rotation should be offset from VTS operator to precede their rotation by *approximately one hour* to enable the Supervisor to accept the watch handover and properly take over the watch and determine assignments to deal with operational requirements *before other staff arrives*.

2.4.3 Rest Breaks during Watch
Rest Breaks will be scheduled within the watch rotation cycle and will be authorized on a *day-by-day basis by the VTS Supervisor* to meet *operational requirements* as well as the *health and safety requirements* of the staff.

2.4.4 Basic Certification Training
VTS Supervisors will be trained to a level approved by DGST in accordance with IMO Resolution A.857 (20); and, IALA recommendation *V-103-2. VTS operator will be trained to a level approved by DGST*.

2.4.5 On-Job-Training (OJT)
VTS Supervisors and VTS operator will be required to successfully complete OJT as approved by DGST in accordance with IALA Recommendation *V-103-2and V-103-1*

2.5 Log keeping
2.5.1 General
● Each workstation, including the VTS Supervisor will maintenance a Centre log *Form A-1.* Centre logs (Form A-1) shall adhere to the following principles:
● *Activities* and *events* shall be recorded in *time sequential order.*
● All log entries shall be *clear and plain.*
● Centre logs shall be identified with the *printed identification* "*Dumai VTS"* and the date.
● Entries shall be inerasable.
● All entries shall be *accurate and complete*.
● All entries shall include the *identification of the person*.
● Only *approved abbreviation and acronyms* shall be used.
● Dates shall be recorded in *dd / mm / yyyy* format.
● Time shall be indicated in *24 hour notation Local Time*. *Adjustment of clocks shall be recorded* in the log.

2.5.2 Mandatory Entries
The following shall be recorded:
● *Name of Operator signing on and off watch*
● Reference to any *distress/urgency/safety messages either received or sent*.
● Any *deviation* from the "Standard Operating Procedures".
● The time of *unscheduled broadcasts (Information Services; INS)*.
● The *release of log information* with identification of individuals concerned.
● Any information that describes the *operation of the equipment records*
● *Unavailability* of equipment due to *malfunction or maintenance.*
● Any *verbal instruction* from the *Centre Manager or other authorized person.*

2.5.3 Shipping activities
VTS Dumai Staff shall maintain information about *current and expected port activities* within the sector 2.

2.5.4 Weather Conditions
VTS Dumai Staff shall maintain as appropriate the *most current local information* concerning the Wind speed and direction, *Visibility and State of Sea and Swell*

2.5.5 Corrections to log entries
● Log entries *shall be corrected* and initialed only by the *person who made the original entry.*
● Corrections shall be made with a single line through the entry so that the *original entry is still legible*.
● Errors or omissions *noted by a VTS Supervisor may be corrected by* making a subsequent entry referencing the original entry and *initialed by the person making the second entry.*

2.5.6 *Release of log information*
● All information comprising the Centre log with the *exception of current operational information, weather data, and scheduled broadcast information*, is *considered confidential* ,and
● Shall *not be released* to the general public or news media *unless authorized by the Centre Manager.*

2.5.7 Retention of log Materials and EDR (Electronic Data Recording)
Retention of Log data and Electronic Data Recording (EDR) containing vessels traffic shall be done at least for 5 (five) years before removal/elimination. In particular, traffic data related incident / accident or infringement that can be used as a proof by their authority, should be kept in retention at least for 10 (ten) years before remove/elimination. The release of log materials and EDR as evidence shall be done by the consent of the centre manager.

2.6 Communications, Allied Agencies, Security, Public Relations
2.6.1 Coordination
In the VTS operation, *internal and external coordination with allied agencies* is required, such as:
● *Internal Coordination of the team* consisting of operations staff, Supervisor, Manager and Technician.
● Coordination with *offices and agencies responsible for stakeholders* within the port such as *Pelindo/Pilots*, *KPLP*/*Coast Guard*, *AIRUD/Marine Police*, *AL/Navy*, SAR, Terminal Operators and Ship Agents;
● Coordination with *Pilots and pilot launches* servicing the port.
● In the coordination between these groups, *a clear line of communication is required in order to speed up the reporting mechanisms and quick and correct distribution of information to anticipate any operational requirement or emergency in the VTS area.*

2.6.2 Health & Safety
● In improving the *safety and health* at the VTS Centre, security personnel are informed of concerns and Smoking is permitted in designated areas only.

2.6.3 Security
● All personnel *will have identification card (ID)* which must be carried and displayed at all times to access buildings.
● VTS Staff are reminded that the *security of equipment* must be maintained.
● *It is not permitted to attach any personal storage device* such as USB stick to any computer or peripheral device within the Centre.
● The VTS *operations room* is open to entry by *authorized personnel only*. The *VTS Supervisor has the responsibility* and authority to *refuse entry* to personnel who interrupt or cause a distraction to staff engaged in their duties.

2.6.4 Public Relations
● All *requests from the media* (radio, television, newspaper) *shall be referred* to the Director General of Sea Transportation or *DGST* Public Relations *officer.*
● Detailed *information on cargos, passenger number etc*., should not be provided to the general public *unless in a format approved by the VTS Centre Manager.*
● VTS Staff must maintain confidentiality and *not discuss* matters of commercial interest or sensitive matters concerning *port operations with unauthorized persons.*

2.7 Routine Operations and Administrative Duties
2.7.1 Accepting the watch
The VTS operator shall *Receive full briefing and Sign on* with initials in *Centre Log*

2.7.2 During the watch
The VTS operator shall
● *Conduct* equipment check, log results, *inform* Technician of problems
● *Check* waterway status (fixed/floating aids to navigation)
● *Perform* any other duties specific to that VTS Sectors
● *Read* any directives or *notices* dealing with operations
● *Review* “Notices to Mariners”, weather and special circumstances.

2.7.3 Completion of watch
The VTS operator shall
● *Provide* full briefing
● *Relief* will be *delay*ed if involved in duties requiring special attention
● *Sign off* the log (paper) *and log off* (Electronically)
● Only *leave* on authorization of *Watch Supervisor*

2.7.4 Navigation aids check
For each navigation aids
● *Record and report* any abnormal operation *to Watch Supervisor*
● Initiate *Notice to Mariners* where necessary.
● If for any reason a navigation aid cannot be monitored, this should be logged, *any other available means* should be used to determine the navigation aid's status. *(e.g. make question to passing vessel)*

2.7.5 Aids to Navigation – Malfunction or Off- Position
● Any aid to navigation malfunction in the VTS area, *inform the Navigation District Office*.
● If the aid to navigation malfunction has been repaired, *ships are informed via a broadcast*.
● The above-mentioned aid to navigation malfunction and repair must be *entered in the log, starting time and persons who has been informed*.

2.7.6 Local Broad cast
● *VTS Supervisors have the unrestricted authority t*o initiate a local broadcast at the VTS Centre *before a formal broadcast is issued or authorized by head of District Navigation.*

2.7.7 Time Check
● The VTS *clocks indicate Local time, Singapore time and UTC* shall be ***checked and synchronized*** at the beginning of each watch.
● The *accuracy* of VTS Centre clocks used for every operation shall be maintained to a tolerance of *plus or minus 1 second. A*ny adjustments made shall be recorded in the log.

2.8 Handover (Routine Operations)
2.8.1 *Handover of duty*
● VTS staff must carry out the handover of duty at watch change and the same *must be acknowledged by the relieving staff* member.
● Relieving staff should report for duty *15minutes in advance* of their assigned shift to receive handover.
● *Form A-3* shall be signed by *both VTS* operators involved in the handover. The VTS Supervisor must also acknowledge the briefing by initialing the form.

2.8.2 Watch Handover Briefing
A Watch *Handover Briefing* shall include all related information
● Marine *occurrences*
● Marine *casualties*
● Marine *safety*
● Marine *traffic information*
● *Weather* conditions
● *Special* marine *operations*
● *Equipment*
● *Pilotage* information
● Work *in progress*
● Other *unspecified items* that may *impact* the watch
● Check operational *orders, directives and memos.*
● *Significant* Log entries.

2.9 Corrections and Maintenance of Charts and Publications
2.9.1 Charts
● *Charts* held at the VTS including ENC *must be corrected from weekly "Notices to Mariners"* or with *digital correction data provided by DGST on CD*.

2.9.2 Publications

- *Publications* held at the VTS Sub-Centre relate to a number of operational areas, contain essential information for the VTS Staff to refer to *when making decisions related to their primary duties*.
- *Publications* are issued by a variety of organizations including IMO, IALA, and DGST etc. and are updated from time to time through publication of correction notices or agenda. e.g. *Tide Tables, List of Ship stations, Indonesian List of Aids to Navigation, etc.*
- VTS staff *must note in each publication so corrected*, the correction, date and authority issuing the correction. A notation *should be made in the Centre Log* that a correction has been made.

2.10 Equipment Operation (Responsibility: VTS Staff)

2.10.1 Equipment Operation

When accepting the watch, VTS operator shall test (and adjust as necessary) the following VTS equipment for operational reliability, *noting any deficiencies* in the *VTS equipment Serviceability report*:

1. Radar			
2. AIS			
3. CCTV			
4. VHF Communication System			
5. Electronic Navigation Chart(s)			
6. Metrological Sensor			
7. VTS Database System			
8. *Multi-Function Console*			
9. Communication Link system			
10. Power system			

This table will be created separately by technicians

Additionally checks will be made as soon as possible of the *Room Infrastructure* System, such as

11. Clocks			
12. Air-conditioning (AC),			
13. Telephone,			
14. Facsimile			
15. *Other associated equipment*.			

VTS Staff are also responsible for keeping VTS equipment from *all security problems caused by miss-use, destruction, etc.*

If an error occurs on the VTS equipment, *report must be made to the technical/maintenance personel* using the *Equipment Outage Report* provided by the Chief Technician for that purpose with:

- A short description of the *malfunction*
- The *time* at which the malfunction was observed; and
- An *indication* of the urgency placed on *equipment repair*.

If the malfunction *cannot be repaired quickly*, or if the equipment affected is *critical to the service* provided by the VTS sub-Centre, it may be necessary to *broadcast a notice to mariners* and/or to advice adjacent Dumai VTS Centers of the malfunction and the *estimated time to affect repairs*.

2.11 Routine Communications

2.11.1 Language

- *Internal communications* and communication with *most port stakeholders* on telephone and radio will be *in Indonesian.*
- Communications with the *majority of transiting vessels* and vessels *arriving from outside Indonesia will normally be in English*

2.11.2 Result Oriented Communications

- All communications should be *result oriented* so as not be interrupted as *conning instructions* by the mariner.

2.11.3 SMCP
● Standard Maritime Communications Phrases *Message Markers* will be used *wherever possible.*

2.11.4 Time
● 24 hour clock will be used in all communications, *normally using West-Indonesian Time*, if *UTC is used it should be stated*.

2.11.5 Communications Control
● In accordance with direction from DGST, with the exception of distress and urgency communications, the control of all communications between VTS and vessels lies with the VTS Centre. VTS may broadcast a Mayday Relay on VTS frequencies only. Distress and urgency communications may be controlled by Coast Radio or VTS

2.11.6 Priority of Communications
The *order of priority* for radio communications will be:
Distress calls, distress messages, distress traffic
Communications preceded by the Urgency Signal (*Pan Pan*)
Communications preceded by the Safety Signal (*Security*)
Communications related to *safety* of navigation
Communications related to *port operations*
Scheduled Marine *Broadcasts*
Other communication
When the calling *vessels do not indicate priority,* it will be *understood* to relate to *routine port operations.*

2.11.7 *Establishing communications*
● When attempting to establish communications on VHF call the vessel by using the *vessel's name or call sign not more than twice*.
● Use the radio identification *"Dumai VTS" at least once in all transmissions*.
● When communications are established on the working channel, use the vessel's name or call sign *once only,* and the words *"this is " may be dropped;* however the *vessel's name or call sign and Dumai VTS* identifier shall be *maintained* for each and every communication.

2.11.8 *VTS VHF Channel Guard*
● If a vessel guarding (keeping a watch) VTS frequencies is being called on another channel, *inform the vessel to change to that frequency* to receive a communication.

2.11.9 *Use of channels*
● *Monitor all channels* required by the VTS Sub-Centre.
● Except for Distress and Urgency calls, *all communications shall be made on a sector working frequency.*

2.11.10 Test transmission
● *Test transmission* shall include the name or call sign of the center and shall be *limited to 10 seconds or less*.

2.11.11 *VHF channel interference*
● Attempt to identify the source when *communication interference* occurs. As the controlling station, resolve the situation by having one or all interfering stations cease transmission on the VTS channel and either *stand-by or move to another frequency*

2.11.12 Interruptions
● Normally a transmission that is in progress has priority over new calls; however, *distress, urgency or safety communication to transmit shall be entitled to interrupt any transmission in progress* that is of a lower priority. Any transmission may be made to effect the interruption followed immediately by the appropriate signal.

2.11.13 Rate of speech
● The rate of speech shall be governed by prevailing conditions and the capability of the person receiving the message. Radio broadcasts shall be around *80 to 100 words per minute* with pause and repeat as necessary. In case of *distress, urgency and safety,* speech *shall be made slowly* and distinctly with clear pronunciation.

2.11.14 Phonetic Alphabet
● The *phonetic alphabet* shall be use used when required.

2.11.15 Calling interval
● The VHF call shall *normally be repeated 3 times at interval of 2 minutes*. Thereafter the call may be transmitted at *three minute intervals*.

2.11.16 VTS unable to respond immediately
● When unable to respond to traffic immediately, VTSO's reply should state: *Standby.*
● If the delay is expected to exceed three minutes, the reason should be given.

2.11.17 Doubtful Reception
When *a call believed to be for Dumai VTS* is heard but you are uncertain of the calling station reply as follows:
● Station Calling Dumai VTS……*Please Say Again*.

2.11.18 VHF non-conformities
● Vessels *not maintaining a listening watch* are to be noted and *logged in the log* book.
● *Consider dispatching the Pilot launch* to vessels involved to alert the crew and report findings when communications are urgent.

2.11.19 Broadcast
When initiating broadcasts such as weather broadcasts to all vessels, use the following format:
● *All stations (normally twice*, but not more than 3 times)
This is Dumai VTS (normally twice, but not more than 3 times)
● Ending a call: When communication exchange has ended, say *"Out"*; when a reply is expected say *"Over"*.

2.12 Internal emergencies	
2.12.1 Internal emergencies	
Several risks associated with VTS could result in a decision to evaluate the VTS operations room. Examples included: *fire*, *water damage*, *extreme weather*, *power/system failure*, *security threat*; etc.	
When evacuation is necessary, the following should be done:	
● *Notify the alternate VTS Site* to make necessary preparations	
● Broadcast a Security *Message on VTS channels that services will be terminated* until further notice	
● *Inform the Harbor Master and SAR*	
● *Inform adjacent VTS centres* by quickest means and *request* them to broadcast a *Notice to Mariners*.	
● Monitor VTS channels on *portable or other equipment* if possible.	
If time permits and individual safety is not at risk: Gather material and equipment necessary to *conduct a minimum level of service* at the *alternate location* such as;	
● Portable radios, telephone, *laptop computers*, chargers etc.	
● Centre *Logs*	● *Forms*
● *Paper, pens* etc.	● *Paper charts* if available
● *Chart instruments*	● Necessary *publications*
● Current *database readout*	● *First-aid kit*
● Keys to lock and to gain entry to *alternate site*.	

3. Vessel Traffic Service	
3.1 Pre-Arrival Information and arrival notice	
3.1.1 Pre-arrival Information	
Notification shall be made to Dumai VTS by the vessel via VHF radio, *telephone, facsimile or e-mail*:	
48 hours prior arrival; or *Port authorities and Shipping Agent*	
No later than time of departure from previous port if voyage *less than 48 hours*	
Information to be provided;	
● Name and Collision	● Last port
● Position	● ETA Dumai VTS Area limits
● Destination Port in Dumai area	● Cargo
● Deepest Draught in meters	● Description of defects and/or deficiencies
● Length Over All in meters	● Description of Dangerous Goods
● Name of Agent	
● Number of persons on Board, and if a Passenger Ship the number of Foreign and Local Residents	
In response to incomplete Pre-arrival or pre-Departure MSG. Request additional info.	(Ship name) This is Dumai VTS. Message Received Please provide additional information Item, item…

3.1.2 Conformation of Entry	
Notification shall be made by *VHF on the appropriate sector frequency*	
● When entering the *Dumai VTS area*.	
● *3miles before arriving at the port Fairway Buoy (Buoy Name).*	
● *When pilot is on board* or,	
● When *at the port Fairway Buoy. (Buoy Name)*	
Information to be provided	
● Name and Call sign	
● Position	
● Any change to information previously provided	
In response to complete pre-arrival MSG	*_____This is Dumai VTS Message Received* *_____To enter Dumai VTS area at (time)* *Call at (___E___W___S___N Limit)* *Name of Calling point or Calling line*

3.1.3 Equivalent reporting
Certain vessels engaged in various operations may be *granted equivalent reporting status*.
● In the case of *ferries, agreement should be made by MOU*. However, in each case the ferry should provide a *minimum report* to Dumai VTS of *departure and arrival at berth* in Dumai together with any defects/deficiencies when applicable
● *Naval and other patrol vessels* would normally indicate their intentions by a *closed communication* to the VTS centre. i.e. secure message

3.2 Pre-Departure and Departure Reports	
3.2.1 Information to be provided	
Notification shall be made to Dumai VTS by the vessel via radio, *telephone, facsimile or email:*	
● A minimum *1hour prior departure* from or move within the port, anchorage or STS area.	
In response to arrival message at area limit when vessel is to proceed directly to berth	*_____This is Dumai VTS Message Received.* *Proceed to Berth _____* *Call at Fair way buoy* *Standby for Dumai VTS Channel_____*
In response to receipt of Pre-complete departure message.	*_____This is Dumai VTS Message Received* *_____To depart_____anchorage___) at (__time__)* *Call 15minutes prior departure.*

3.2.2 Notification shall be made	
● Name and Call sign	● Position
● Destination	● ETD
● Deepest draught in meters	● Length Over All in meters
● Cargo	● Description of defects and or deficiencies
● Description of dangerous or hazardous goods	
● Conformation that permission to sail has been received from the harbor Master	
● Number of persons on board and if a passenger ship the number of foreign and local residents	
● On receipt of information a Pre-departure form (A-5) should be completed.	

3.2.3 Confirmation of Departure	
Notification shall be made *15minutes* prior departure	
In response to 15 minutes departure message when vessel is OK to departure	*_____This is Dumai VTS Message Received Proceed at your discretion Call when underway*
In response to 15 minutes departure message when vessel is not OK to departure	*_____This is Dumai VTS Message Received (Information / Warning) Channel is blocked (Advise) or (from HM Instruction) Remain Alongside Call in ___minutes when channel is open.*

3.2.4 Information to be provided; Form A-5	
● Name and Call sign	● Position
● Any change to information previously provided	

3.3 Traffic Information INS	
3.3.1 Risk assessment	
Provision of INS requires a *continuous risk assessment on the part of the VTS operator.* To determine if risk of collision, grounding or striking exists consider:	
● The *geographical constraints* of the waterway	
● *Maneuvering characteristics* of the vessels involved	
● *Hazards* to navigation	● *Dangerous goods* on board (if any)
● *Weather constraints*	● Harbor *bye-laws*
● Position and intention of *relevant traffic*	

3.3.2 Relevant traffic (other vessel)	
In determining relevant traffic in a particular area, assess:	
● Possibility of *meeting or crossing*	● Vessel's *intentions*
● A *change* in a previously reported *situation*	
There may also be circumstances, where a vessel is relevant traffic even through it is not meeting or crossing – i.e. *dredging*, *diving*, etc.	

3.3.3 Traffic information
Traffic Information may contain
● Significant *weather or tidal information*
● *Relevant traffic* data
● *Essential waterway data* including hazards
● Any *marine incidents* that could affect the navigation of the vessel

3.3.4 Timing of Providing Information
Relevant traffic information should be provided
● *When requested* by a vessel
● As soon as practical after a vessel has confirmed *intent to depart*
● When a vessel has reported at a *Calling-in Point*
● Any time that *traffic conflict* has been identified

3.3.5 Information of relevant Traffic
The following *relevant traffic* information should be provide to a vessel
● *Direction* of travel and vessel's *intentions*
● Name and type of vessel
● Position (*range and true bearing* if necessary)
● Special information such as *NUC* (Not under Command), Restricted in ability to *manoeuvre* etc.
Term "Unidentified Vessel", "Non-participating Vessel" may be used where appropriate.

3.3.6 Information if there is no relevant Traffic
If there is *no relevant traffic* the VTS operator shall use the phraseology; *"No reported or observed traffic"*

3.3.7 Traffic Advice / Recommendations
Advice maybe given when a vessel should take action in *response to information* provided, or when a *non-routine situation exits*, but does *not yet necessitates an instruction* being given. Advice may be included after Traffic Information, or issued separately. Advice shall be given in a *clear concise manner* so that there is no doubt as to *what action is recommended*.
● *Tong Shan Hai* *This is Dumai VTS. Advice. Proceed to anchorage area.* *The harbor is closed due to pollution clean-up.* *Over.*

3.3.8 Instructions
Instructions may *only be given on the authority of the harbor Master.*
When an instruction is issued, the VTS operator shall ensure that the language used is clear, concise and conveys the intended meaning. Use "result oriented" terminology details concerning the Instruction *shall be entered in the Centre Logboo*k.

3.3.9 Non-compliance with an Instruction
The VTS operator shall inform other traffic taking into account the *non-compliance with an instruction* and its effect on other traffic. Details concerning the *reason for non-compliance shall be entered in the Centre log.* Complete an infringement Report *(Form A-8)*

3.3.10 Non-participating vessels
A non-participating vessel shall be monitored if:
● "No Reported or Observed Traffic"
● It fails to report, but due to *suspected* size or description *may fall within the application of VTS regulations*.
● It is *affecting traffic patterns or the movements of other vessels*.
● It is reported to be, or observed to be *navigating with difficulty or is running into danger.*
● It is considered to be a *hazard to navigation*.
The VTS operator shall monitor the general movement the vessel and attempt to identify it and contact it on VHF.

3.3.11 Tugs, mooring and line boats
Vessel requests for tugs, mooring and line boats should be made direct by the vessel to the company concerned via their agent. When deemed necessary by the Harbor Master., the *VTSO may inform the company or vessels of Harbor Master requirement*.

3.4 Vessels transiting the VTS Area
3.4.1 All vessels transiting in the Dumai VTS area
All vessels transiting in the Dumai VTS area are *strongly recommended to participate* in VTS and *comply with the local and national laws and directions*.
If a vessel *fails to participate*, continue to monitor its movements to determine its present or future influence on traffic patterns or the movements of other vessels.
If it is affecting other traffic, attempt to make radio contact, determine the master's intentions and *provide such information, advice, warning or instruction as is appropriate to avoid a dangerous situation.*
If it is not possible to make radio contact with a non-participating vessel and if its conduct is posing a risk to vessel traffic or to the general safety and security of the port, *use all available resources to enforce compliance.*
Report any apparent *non-compliance or infringement* of laws and directions to the appropriate Authority Complete an infringement Report if the vessel fails to comply (*Form A-8*)
A vessel shall be identified by as many of the following methods as is necessary:
● Comparing *radar derived track* and speed information with information about the vessel:
● By *AIS* or *VHF* radio
● Information from *database on scheduled movements* within a port or anchorage
● *A report from another vessel* of visual sighting and identification
● Confirmation by *CCTV* if available; and
● *Visual confirmation* if feasible

In response to vessel calling when underway	_____*This is Dumai VTS Message Received* *Call when leaving Dumai VTS Area*
In response to vessel calling at Area Limit	_____*This is Dumai VTS Message Received* *Standby for Singapore VTIS on Channel* _____

3.4.2 Cooperation with STRAITREP
As some transiting vessels will be participating in STRAITREP, Dumai VTS *should cooperate* with the appropriate Centre in Malaysia or Singapore *when passing messages to/from vessels.*

3.4.3 Routine Handover
Vessels transiting *from Dumai Area ports to Singapore Ports*. e.g. fast ferries
Vessels entering / departing the precautionary areas between the Dumai Area and Sector 3, 4 and 5 of STRAITREP.
● Vessels entering the Dumai area should report on arriving and remain on Dumai VHF frequencies
● Vessels departing the Dumai area should report to Dumai that they are leaving the area.
● Dumai VTS staff will update the Database.

3.4.4 Non-Routine Situation
Vessels leaving the STRAITREP area and entering the Dumai Area when involved in marine incidents/accidents while still maintaining VHF watch on STRAITREP *frequencies will be handover to Dumai VTS as soon as practicable.*

3.4.5 Vessels being directed or instructed to enter Indonesian Territorial Waters
If the vessel reporting an accident, defect or deficiency is *being directed or instructed by a STRAITREP* Center in Malaysia or Singapore to *enter Indonesian Territorial Waters*, Dumai VTS *must be contacted for agreement* before the instruction or direction to the vessel is given.
On receiving a request for agreement the *Supervisor will contact the DGST Command Center Officer* for guidance.

3.5 Vessels at Anchor, Ship to Ship Transfers, and at Berth	
3.5.1 Anchoring	
A *harbor Master may assign anchorage areas* within his area of responsibility. The VTS operator will monitor the vessel to ensure that it anchors in the designated anchorage area. When the vessel has reached the assigned anchorage position, *it should contact Dumai VTS before dropping anchor.*	
The VTS Operator will confirm that the *vessel is in position* and advise the master to *anchor at his discretion*. If the vessel is *not in the assigned position*, the VTS Operator will *inform the master of the correct position.*	
All vessels at anchor must be reminded to maintain a *continuous radio watch on the VTS sector frequency.*	
In response to arrival message at area limit when vessel is to proceed to anchorage.	_____*This is Dumai VTS Message Received from Harbour Master* *Proceed to Anchorage area* _____ *Call when ready to drop anchor. Standby for Dumai VTS Channel*___
In response to message at anchorage area. Vessel ready to anchor in an approved area	_____*This is Dumai VTS* *Message Received Anchor at your discretion.*
In response to message that Vessel is alongside or at anchor in an approved location	_____*This is Dumai VTS Message Received*

3.5.2 Ship to Ship Transfer	
Vessels involved in *Ship to Ship Transfer* (STS) *must receive permission* from the *harbor Master.*	
The *Harbor Master* will *indicate where* (in the *STS area*), at *what time*, and under *what conditions* STS may be carried out.	
Vessels must advise VTS that they *intend to carry out STS* and must *also indicate* that *Harbor Master permission* has been received.	
● On receipt of a vessel's intention to proceed to an area to carry out STS, *send standard message B-14*	
When confirmation from the *Harbor Master is confirmed*, *send standard message B-15*	
● Where the vessels are *on position in the STS area*, set up an *electronic Anchor Guard* with the anchored vessels at the centre.	
In response to vessel requesting to commence Ship to Ship transfer or Special operation.	_____*This is Dumai VTS Message Received* *Standby for permission from*_____ *to commence operation.*
On receipt of permission from authorized officer	_____*This is Dumai VTS Message Received* *From* ___*Port Authority*____*port* ____*Has permission to commence*____ *Proceed at your discretion*

3.5.3 Anchoring out of position	
When a vessel *fails to anchor* within its designated position and the vessel *does not take action to reposition*, the *Harbor Master shall be informed.*	
If necessary, an infringement Report *(Form A-8)* should be completed.	
In response to message at anchorage area. Vessel ready to anchor in a non-approved area	_____*This is Dumai VTS Message Received* *Warning. You are in a prohibited anchorage area.* *Do not anchor in that position. Proceed to anchorage area*___

3.5.4 Anchor Guard
When a vessel has reported at anchor, an *electronic Anchor Guard will be set* up with the anchored vessel at its centre.
Anchor Guard *radius is more than 100m* or as *approved by the VTS Supervisor.*

3.5.5 Dragging Anchor
If a vessel appears to be *dragging anchor,* the VTS operator shall:
● *Attempt to establish radio contact* with the vessel to advise the vessel of its position
● *Inform other vessels* in the area of the vessel dragging its anchor
● *Check the position of other anchored vessel* to confirm whether they are dragging anchor also
Ensure that the vessel is *taking appropriate actions*
Provide assistance if requested by the Master
Alert Harbor Master to possible emergency

3.5.6 At Berth	
When a vessel reports alongside at a Berth it may *discontinue radio watch*.	
In response to message at Fairway Buoy proceeding to berth	_____*This is Dumai VTS Message Received Call when alongside.*

3.6 Non-Routine situation
3.6.1 General
Non-routine situation occur whenever the VTS cannot apply routine procedures to *respond to the situation.*
Determine complete *details* of the situation
Notify vessels of those *special circumstances* that may be determine to safe navigation.
● *Issue a marine broadcast*
● *Ensure* that the *proper authorities are informed and* the *proper reports* are completed
● *Log* the details of the circumstances

3.6.2 Obstruction to navigation
Upon receipt of a *vessel's report* or *visual observation* of an *obstruction* to navigation within a VTS zone:
● *Log time*, location of obstruction to navigation
● *Obtain details* such as type of obstruction, *size and direction* of movement
● *Broadcast* a Notice to Mariners

3.6.3 Vessels impeding navigation
Upon receipt of a vessel's report or upon visual observation of a *vessel* that may *impede navigation of other vessels* within a VTS zone:
● *Identify the vessel* impeding navigation
● *Determine its exact location*
● *Establish communications* – if so query its intentions
● Notify all traffic in the immediate area

3.6.4 Vessels with reported draught indicating a minimum under-keel clearance
● *Inform Harbor Master*
● *Inform vessel* that permission for move will be reviewed by *Harbor Master*
● *Advise vessel to standby until permission* received from *Harbor Master*
● When *Harbor Master approval received*, inform vessel to *continue with trip* and commence *enhanced monitoring* while vessel is in shallow area.

3.6.5 Manoeuvres – Special Operations (e.g. Dredging, Compass Swing, Engine Trials etc.)
Upon receipt of vessel's report of the commencement of a manoeuvre or special operation that may be *detrimental (harmful) to safe navigation*:
● *Obtain* name , position and details of the intended manoeuvre
● *Ensure* that other vessels are advised
● *Issue* to Notice to Mariners (If required)

3.6.6 Upon completion of special operation
The VTS operator shall
● *Obtain a report* from the vessel specifying any changes to the waterway
● *Issue* no Notice to mariners (if required)

3.6.7 Deviations from expected course and speed
When becoming aware of *any deviations*:
"Drop Anchor" and contact with …
● *Determine* the extent of the *problem and reason* for deviation
● *Determine* the *intentions* of the Mariner
● *Ask* whether *assistance is required*
● *Ensure* that other vessels *are advised* (if required)
● *Continue monitoring* vessel until safe navigation is resumed

3.6.8 Carriage of pollutant and/or Dangerous or Hazardous Goods
In some cases *multipurpose vessels* may carry a considerable quantity of small package of *dangerous goods*. In this case an *estimate of quantity* and which *IMDG* (International Maritime Dangerous Goods) codes will suffice. When *bulk* dangerous goods or pollutants are carried the following should be obtained.
● The *nature of* the pollutant or dangerous *goods* (IMDG code etc.)
● The *weigh and measure* of the dangerous *goods* or pollutants
● *Type* of storage
● *Advise* all relevant parties such as: *Coast Guard, Ministry of Environment*

3.6.9 Missing charts and Publication request
If a vessel reports that any charts or publications required to be carried, are not on board:
● *Record* the charts/publications that are missing
● *Ensure* that *arrangements have been made* to obtain these charts/publications
● *Inform Harbor Master* and *advise the vessel* of any conditions to be observed
● *Fully monitor* vessel's progress into and through the VTS area

3.6.10 Communication Equipment Problem – On board vessel.
If *communications* with a participating vessel *cannot be established*
● *Attempt to call on VHF channel 16* and any other possible frequency that the vessel may be monitoring
● *Closely monitor* the vessel's movements
● *Ensure* that other vessels are advised (if required)
● *Complete a log* entry
● The vessel may proceed on its route, and should *proceed to the nearest reasonable safe port or anchorage* on its route where its radios may be repaired

3.6.11 Vessel commencing a manoeuvre that may be detrimental to safe navigation.
When a vessel repots prior to commencing a manoeuvre that may be detrimental to safe navigation *obtain*:
● *Name* of vessel
● *Position*
● *Description* of the manoeuvre
● *Estimated* duration (period)
● *Other* considerations
● *Provided* traffic/waterway *information*

3.6.12 After manoeuvre is completed
When a vessel *reports having completed* a manoeuvre that may have been detrimental to safe navigation the VTS operator shall:
● *Obtain* vessel's intentions
● *Provide* traffic/waterway information
● *Update* vessel data-base Date & Time

3.7 Adverse Environmental Conditions
3.7.1 Reduced visibility (visibility of 3 miles or less)
Upon receipt of a vessel's report or upon visual *observation* of *reduced visibility within a VTS zone:*
Visibility information depends on one of the following.
● *Use of CCTV: To establish a target which becomes marker.*
● *Collect information from vessels in traffic in the vicinity*
Log time, location and extent of visibility
● *Notify* vessels at the earliest opportunity of the reduced visibility that may be of concern to the vessel
● *Consider restricted movement* measures at the direction of the VTS supervisor
● *15 minutes intervals* between vessels in same direction
● *1 mile between certain classes* of vessels in transit
● *Broadcast*

3.7.2 High winds (22+ knots or Beaufort 6)
Upon receipt of a vessels report or upon *visual observation* of extreme weather conditions within a VTS zone:
● *Log* time, location and extent of weather condition
● *Notify* vessels at the earliest opportunity of the weather condition that may be concerned to the vessel e.g. vessels involved in Trans-Shipment, bunkering, towing, vessels with large freeboard.
● *Place restrictions* on Trans-Shipment, bunkering, launching from shipyards and towing of offshore platforms or similar structures.
● *Broadcast*

3.8 ISPS (Responsibility: *HM Staff* and VTS Staff)	
3.8.1 International Ship and Port security (ISPS) Code	
The international Ship and Port Facility Security (ISPS) Code applies to the following types of Vessels engaged on international voyage:	
● *Passenger Vessels* (including high speed passenger craft);	
● *Cargo vessels* (including high speed craft) of *more than 500 GT* and;	
● Any berth that handles v*essels on international voyages* should be designated as an ISPS port facility.	
● Specific ISPS procedures are *provided by the Port Authority.*	
● Concerns / reports associated with security should be forwarded to the Port Authority (e.g. stow-away, criminal activity, trafficking / smuggling etc. e.g. *illegal transportation*)	
Administrative Notes	*Port Authority must be consulted for specific ISPS procedures*.

3.9 Infringement of Regulations, Guidelines or Recommended Procedures
3.9.1 GENERAL
Dumai VTS monitors the VTS area and observes compliance with *current national and international legislation, executive orders and directives*. If an infringement or violation of guideline or regulation occurs a separate form (A-8) must be completed.

3.9.2 VTS infringement reports	
When reporting infringements of the VTS regulations/guidelines the *following information shall be contained in the report.*	
Section of the regulation/guideline that has been contravened	
● Date and time	● Call sign
● Ship name	● Destination
● Flag/Nationality	● VHF operational status
● Position at time of infringement	● GT (Gross Tonnage)
● LOA (Length Over All)	● Narrative (Story)
Record events chronologically (time series) Detail actions take to inform the vessel	
● Reference recording facilities and support documentation	
● VTS operators shall sign and date the report, attach any hard copies and forward to the VTS Center manager.	
Administrative Notes	*DGST developed a policy concerning the process of dealing with these reports*. For example, sending reports to the owner and master of a vessel that has committed an infringement, together with a request for a written response explaining why the infringement took place and an assurance that it will not recur.

3.10 Marine Incident/Accident Reports	
3.10.1 Incident/Accident	
A *report must be made to Dumai VTS* whenever one of the following occurs to or *onboard* a vessel, or is *observed* to occur to *another vessel: Including security incidents and protest action*	
● Natural Disaster	● Dragging Anchor
● Collision, Grounding, Fire, Sinking, Capsizing etc.	● Pollution or spill of a dangerous or hazardous substance
● Medical Emergency and Man Over Board	● Sighting of any hazard to navigation
● Any *violation* of security to the vessel or port	● Embarking or disembarking a security team
● Any breakdown of machinery or equipment to the vessel or port	
● Any accident or incident causing or likely to cause injury or death to person	
● Any accident or incident causing or likely to cause damage to a vessel or shore structure	
● A vessel restricted in its ability to manoeuvre	
● A condition of Not Under Command (NUC)	

3.10.2 The above report shall contain	
● Name of vessel	● Position
● A description of the incident including names of vessels and number (s) of persons involved	● A description of assistance requested
● The name of the person or vessel making the report	

3.10.3 On receiving an incident or accident report	
● Complete a log entry	● Inform all relevant offices
● Complete a Marine Incident/Accident form *(Form A-6)*	● Broadcast a notice to mariners
● Continue to provide INS to other vessels	● Cooperate with Emergency Measures Officials

3.10.4 Vessels to remain in port or at anchor until departure authorized
Vessels involved in marine incidents causing *damage either to the vessel or to any structure ashore or afloat (including buoys)* must be informed that they are *required to maintain in port or at anchor until the circumstances have been investigated by the Harbor Master or marine safety authorities.* Vessels involved in accidents when departing the berth or the VTS area should proceed to anchor to await approval for departure from the area.

3.10.5 Pollution
Upon receipt of vessel's report or upon visual observation of any *discharge or threat of discharge of pollutant* from a vessel into the water or the presence of any pollutant in the water.
● *Record the data and time* of the report/observation and occurrence
● *Obtain the name of the person making the report and phone number* if applicable
● *Inform t*he Port *Authority*
● Determine the *location, particulars of source*, extent of *pollutant (fuel oil, diesel, chemical etc. and pollution*
● *Obtain weather information and tidal* conditions in the polluted area
● Prepare a *pollution report*

3.10.6 Report to DGST
Especially *in cases of pollution or accident,* the *Supervisor is to make a report to DGST.*

3.10.7 Place of Refuge (safety area)
Should a request for a *place be received from a vessel, the vessel's agent or any outside body*, the Port Authority and DGST officer is to be informed *before any decision is made.* This applies to all vessels. *Form A-6*

4 Special / non-routine Operations	
4.1 Special Operation	
A *report must be made to Dumai VTS Sub-Center* whenever one of the following is planned	
● Diving or underwater works	● Lifeboat drill and any marine event
● Trans-Shipment	● Swinging (alternation) of a berth or in a turning basin
● Aid to navigation maintenance	
● Hot work *(welding, cutting, burning, abrasive blasting etc.)* or repairs	

4.2 On receiving a report:
A report must be made to Dumai VTS Sub-Center whenever one of the following is planned
● Complete a log entry stating the *operation to be carried* out and the expected duration.
● Make a broadcast and inform individual vessels in the vicinity of the operation

4.3 Marine Emergencies
● Any incident or accident which includes an *expanded call-out of emergency response* resource such as police, fire, security team, pollution response team etc.
● When an emergency occurs, it is important for the *VTS to respond to the emergency situation as well as provides an INS* to participating traffic within the area.
● To prevent the situation from becoming more extreme it is necessary to *take action to minimize consequences.*
● An *initial call-out will be commenced using a Marine Incident form (Form A-6)*

4.4 As with a Marine Incident/Accident	
On receiving an incident or accident report:	
● Complete a *log entry and* marine Incident/Accident *form (Form A-6)*	
● Broadcast a *notice to mariners*	● Inform all *relevant offices*
● Continue to *provide INS* to other vessels	● Cooperate with *Emergency Measures Officials*
The following measures should also be considered:	
1. Call in extra staff to deal with the emergency and Commence an emergency log book. 2. Provide Situation Reports (SITREP) at regular intervals	

Standard Message Formats			
MSG	WHEN TO SEND	Method	COMMUNICATION
B-1	To incomplete Pre-arrival or pre-Departure MSG. Request additional info.	VHF Phone, Fax e-Mail	_____This is Dumai VTS Message Received Please provide additional information, Item, item…
B-2	To complete pre-arrival MSG	VHF Phone, Fax e-Mail	_____This is Dumai VTS Message Received _____To enter Dumai VTS area at (time) Call at (___E___W___S___N Limit)
B-3	To arrival message at area limit when vessel is to proceed directly to berth	VHF	_____This is Dumai VTS Message Received Proceed to Berth _____ Call at Fair way buoy. Standby for Dumai VTS Channel_____
B-4	To arrival message at area limit when vessel is to proceed to anchorage.	VHF	_____This is Dumai VTS Message Received From Port Authority Proceed to Anchorage area _____ Call when ready to drop anchor. Standby for Dumai VTS Channel_____
B-5	To message at Fairway Buoy proceeding to berth	VHF	_____This is Dumai VTS Message Received Call when alongside.
B-6	To message at anchorage area. Vessel ready to anchor in an approved area	VHF	_____This is Dumai VTS Message Received Anchor at your discretion.
B-7	To message at anchorage area. Vessel ready to anchor in a non-approved area	VHF	_____This is Dumai VTS Message Received Warning. You are in a prohibited anchorage area. Do not anchor in that position. Proceed to anchorage area___
B-8	To message that Vessel is alongside or at anchor in an approved location	VHF	_____This is Dumai VTS Message Received
B-9	To receipt of Pre-complete departure message.	VHF	_____This is Dumai VTS Message Received _____To depart_____dock / anchorage___) at (__time__) Call 15minutes prior departure.
B-10	To 15 minutes departure message when vessel is OK to departure	VHF	_____This is Dumai VTS Message Received Proceed at your discretion. Call when underway
B-11	To15 minutes departure message when vessel is not OK to departure	VHF	_____This is Dumai VTS Message Received (Information / Warning) Channel is blocked (Advise) or (from P.A. Instruction) Remain Alongside Call in ___minutes when channel is open.
B-12	To vessel calling when underway	VHF	_____This is Dumai VTS Message Received Call when leaving Dumai VTS Area
B-13	To vessel calling at Area Limit	VHF	_____This is Dumai VTS Message Received Standby for Singapore VTIS on Channel _____
B-14	To vessel requesting to commence Ship to Ship transfer or Special operation.	VHF	_____This is Dumai VTS Message Received Standby for permission from_____ to commence operation.
B-15	On receipt of permission from authorized officer	VHF	_____This is Dumai VTS Message Received From ___P.A.___port ____Has permission to commence____. Proceed at your discretion

Dumai VTS Form A-1

VTS Log Sector _____

Dumai VTS Date_____ Year ____

No.	Time	Description	Initials
	:		

Discovered by_____

****

Dumai VTS Form A-2

Daily Vessel Summary

Dumai VTS

Date _____ Year _____

Port	Vessel/CS	ID #	Last Port	Next Port	ETA/ETD UTC	ATA/ATD UTC	Time alongside, Or Depart from Area	Agent	Remarks

Dumai VTS Form A-3

Watch Handover
Dumai VTS

Date _____ Prepared by:_____

Briefing:	Existing /Expected		Special Notes
Weather & Tide Condition			
Shipping Activity			
Ships In & Expected			
Ships Out & Expected			
Ships at anchor			
Special Operation	Dredging Under Water Works etc.		
Equipment Operation	If equipment is unserviceable		
Notice to Mariners	Hazards Buoys		
Incidents / Accidents	Pollution MOB etc.		
Personnel	Sick, delayed etc.		
Administration	New directives Procedure etc Port Authority Orders		
Other	Unfinished Work		
Other			

Accepting VTSO _____

Dumai VTS Form A-4

Pre-Entry Notification Date_____Time_____Prepared by: _____

Received on ____ VHF, Telephone, e-Mail, Fax .....

Item	Information
Name and Call sign	
Position	
Last port	
Destination at Dumai VTS Area	
ETA Dumai VTS Area limits	
Deepest Draught in Meters	
Length Over All in Meters	
Cargo	
List of Defects or Deficiencies	
Description of Dangerous goods	
Number of Persons on Board (and if a Passenger Ship) The number of Foreign and Local Residents	
Name of Agent	

****

Dumai VTS Form A-5

Pre-Departure Notification Date_____Time_____Prepared by: _____

Received by ..... VHF, Telephone, e-Mail, Fax .....

Item	Information
Name and Call sign	
Position	
Next port	
Sailing permission received from Port Authority	
ETA Dumai VTS Area limits	
Estimate Time of Departure (ETD)	
Deepest Draught in Meters	
Length Over All in Meters	
Cargo	
List of Defects or Deficiencies	
Description of Dangerous goods	
Number of Persons on Board (and if a Passenger Ship) The number of Foreign and Local Residents	
Name of Agent	

Dumai VTS Form A-6

Ship Report / Incident or Accident:			
✔	Collision, Grounding, Fire, sinking, Capsizing etc.		Any breakdown of machinery or equipment to the ship or port
	Pollution or spill of a dangerous or hazardous substance		Any accident or incident causing or likely to cause injury or death to a person
	Medical Emergency		Any breach of security to the ship or port
	Man Over Board		Embarking or disembarking a security team
	Natural Disaster		Any accident or incident causing or likely to cause damage to a vessel or shore structure
	Dragging anchor		A vessel restricted in its ability to maneuver
	Sighting of any hazard to navigation		A condition of Not Under Command (NUC)
	Embanking or disembarking a security team		

Date / Time of Report	Ship or Name and Phone of Person making report	
Position	Type of Report	Date / Time of Incident or Accident

Description and Detail	
Name(s) and details of Ship(s)	
Call sign, Flag	
Type, Cargo, LOA, Draught, G.T	
Defects / Damage on board	
Reports of Injuries or loss of life	
Persons on board	
Persons missing	
Description and location of pollution	
Cause of incident or accident if known	
Weather conditions at time of incident	
Name and address of agent	
Assistance requested	

Person / Office	Time notified	VTSO
Port Authority		
Search and Rescue		
Coast Guard		
Coast Radio		
Police		
Pollution Control		
Military		
DGST MCC		

Broadcast	Time:	Frequency:	VTSO:
Other Action Taken			

Dumai VTS Form A-7

Ship Report / Special Operation			
	Diving or underwater works		Any marine event
	Lifeboat drill		Swinging off a berth or in a turning basin
	Hot work or repairs		Other

Date / Time of Report / Request	Vessel or Name and Phone of Person making report / Request	
Position	Type of Report	Date / Time of Operation
Description & Detail		
Name(s) & Details of Vessel(s)		
Weather conditions		
Time start / stop		
Confirmation of permission by authorized person		

Person / Office	Time	VTSO
Port Authority		
Search and Rescue		
Coast Guard		
Coast Radio		
Police		
Pollution Control		
Military		

Broadcast	Time	Frequency	VTSO
Other Action Taken			

Prepared by Acknowledged by

Dumai VTS Form A-8

Infringement Report			
	Non-compliance with:		Instruction
	Marine Act		Guideline
	Regulation		Other

Date / Time of Report	Vessel or Name / Call sign / Flag	
Position	Section of Act / Reg. / Guideline	Date / Time Infringement Occurred
Description & Detail		
Weather conditions		
Destination		
VHF operational status		
LOA, GT		
Information / Warning provided by VTS		

Person / Office	Time	VTSO
Port Authority		
VTS Center Sub-Center Manager		

Broadcast if necessary	Time	Frequency	VTSO
Other Action Taken			

Prepared by..... Acknowledged by.....

MINISTER OF TRANSPORTATION, NUMBER 26 OF YEAR 2011
TELECOMMUNICATIONS REGULATION OF THE MINISTER OF TRANSPORTATION - Section SHIPPING.

What are the rules underlying SOP?

CHAPTER I GENERAL PROVISIONS
Article 1
7. *Ship Reporting System (SRS) is* a ship reporting system involving ships coming in and out of *Indonesian waters* to *provide* that information current to the authorities (Ministry of Transportation) *through SROP*, *VTS* stations
8. Vessel Traffic Services (VTS) is a vessel traffic service in *designated areas* an *integrated and implemented by the authorities (Ministry of Transportation)*.
9. *Local Port Services (*LPS) is a vessel traffic service is *limited to providing information* about the data related to the purposes and *operation of port or terminal* that is *not responsive to the shipping traffic i*n the coverage area of the station concerned.

CHAPTER II MEANS AND FUNCTIONS OF TELECOMMUNICATIONS - SHIPPING
Part Three (3) Telecommunications - navigational function
Article 5
Vessel Traffic Services (VTS) as referred to in Article 3 paragraph b) serves to:
a). monitor shipping traffic and the flow of shipping traffic;
c). improve efficiency navigate;
d). environmental protection;
e). observation, detection and tracking vessels in VTS coverage area;
f).) setting general information; (INS)
g). setting specific information, and (TOS)
h). assist ships that require special assistance. (NAS)

CHAPTER III
Article 25
(4) Procurement *(Obtaining)* of Telecommunications - voyage undertaken by a legal entity referred to in paragraph (2) includes:
a). Coast Radio Stations, and
b). Vessel Traffic Services Station (VTS).

Article 26
(3) Requirements for the establishment of the Vessel Traffic Services (VTS) station as referred to in Article 25 paragraph (4) letter b) shall include:
a. establishment license photocopy Coast Radio Stations;
b. equipment specifications, and
c. survey by the official examiner of the Telecommunications - Shipping and installation location.

Article 35
(1) Vessel Traffic Services (VTS) Station provides services such as:
a. information services (Information Service / INS), a service that provides important information useful for decision - making on the boat and navigate right to be given the necessary time and is the fundamental services that must be provided by each station Vessel Traffic Services (VTS);
b. navigational assistance services (Navigational Assistance Services / NAS), a service to assist decision - making (assist ships in navigation / exercise motion in the VTS area coverage on the ship and monitor the impact of the motion if the vessel);

Article 35 (Continue)
c. traffic management services (Traffic Organization Services / TOS) is a service provided to regulate the movement of vessel traffic within the scope of Vessel Traffic Services (VTS) in order to be safe, efficient and does not harm the environment and prevent the traffic situation and the dangerous voyage provide movement of vessel traffic within the scope of vessel traffic Services (VTS) safely, efficiently and does not harm the environment.

CHAPTER X
TELECOMMUNICATIONS OFFICERS – SHIPPING
Article 58
(4) For radio technician officers Global Maritime Distress and Safety System, operator Vessel Traffic Services (VTS), which has followed the education and training - Navigation Telecommunications awarded a certificate by the Director -General.

Article 59
(3) To be eligible for the education and training of operators Vessel Traffic Services (VTS) as referred to Article 57 paragraph (2) *letter c*, *must meet the following requirements*:
a. Minimum Education High School majoring in science, majoring in Electrical Vocational School;
b. have a minimum maritime certificate ANT-III, and
c. actively speak English have a minimum TOEFL English 500.

Article 60
(1) Certificate of education and training - Navigation Telecommunications consists of:
a. radio operator certificate Global Maritime Distress and Safety System radio electronics;
b. radio technician certificate Global Maritime Distress and Safety System
c. Operator Certificate Vessel Traffic Services (VTS);
d. Radio Inspector certificate.
(4) Vessel Operator Certificate Traffic Services (VTS) as referred to in paragraph (1) letter c consists of:
a. Vessel Traffic Services Operator Basic and Advance
b. Vessel Traffic Services Supervisor;
c. Vessel Traffic Services On- the- Job Training;
d. Vessel Traffic Services Instructor training.

CHAPTER XII OTHER PROVISIONS
Article 65
(1) In respect of the Vessel Traffic Services (VTS) established a national authority (National Competent Authority - NCA).
(2) The Director General designated as the National Authority (National Competent Authority - NCA).
(3) National Authority referred to in paragraph (1) is authorized to determine Navigation District in charge of the station Vessel Traffic Services (VTS).

Article 66
Director General shall supervise the implementation of this regulation.

REGARDING THE ENACTMENT OF STANDARD OPERATIONS AND PROCEDURES OF VESSEL TRAFFIC SERVICE (VTS) DUMAI (Reference only)
Article 1 (Related Laws and Regulations)
1. Laws Number 17 Year 2008 regarding *Shipping* (State Gazette of Republic of Indonesia Year 2008 Number 64, Supplement to The State Gazette of Republic of Indonesia Number 4849);
2. Government Regulation Number 51 Year 2002 regarding *Shipbuilding* (State Gazette of Republic of Indonesia Year 2002 Number 95, Supplement to The Gazette of Republic of Indonesia Number 4227);
3. Government Regulation Number 61 Year 2009 regarding *Harbor* (State Gazette of Republic of Indonesia Year 2010 Number 151, Supplement to The Gazette of Republic of Indonesia Number 5070);
4. Government Regulation Number 5 Year 2010 regarding *Navigation* (State Gazette of Republic of Indonesia Year 2010 Number 8, Supplement to The State Gazette of Republic of Indonesia Number 5093);
5. Presidential Decree Number 65 Year 1980 regarding *Ratification of International Conventional for The Safety of Life at Sea, 1974*;
6. Presidential Regulation Number 47 Year 2009 regarding *The Formation and Organization of State Ministries* as last amended by Presidential Decree Number 91 Year 2011;
7. Minister of Transportation Regulation Number KM 60 Year 2010 regarding *Organization and Working Procedures of Ministry of Transportation*;
8. Minster of Transportation Regulation Number *PM 26* Year 2011 regarding *Shipping Telecommunication;*
9. Minister of Transportation Decree Number 173/AL.401/PHB-84 regarding *enactment of The IALA Maritime Buoyage System* for Region-A in the navigational aids order in Indonesia

CHAPTER II: SCOPE
Article 2
Standard Operations and Procedures of Vessel Traffic Service Dumai *apply to operational area covering Dumai of ports* consist of *areas for anchoring and T*rans-Shipment.
Standard Operations and Procedures of Vessel Traffic Service Dumai apply to *ship sailing in the operational Dumai area* as follows:
Ships with a weight *300 GT* (Three Hundreds Gross Tonnage) or more;
Ships with a length of *30 Meters* (Thirty) or more;
Ships are pulling (towing)or pushing with a combined weight of *300 GT* or more, or a combination of length 30 meters or more;
Ships with any tonnage weight *carrying dangerous goods* as mentioned in paragraph 1.4 on Resolution of MSC.43 (64);
All passengers ship are equipped with VHF without regard length or weight; and *("Fitted" means Engaged international voyage has IMO code)*
All categories of ships that less than 30 meters in length or weigh less than 300 GT are equipped with VHF and when in an emergency using the shipping lanes to avoid danger.

CHAPTER III: IMPLEMENTATION OF VTS DUMAI
Article 3
Director General as National Competent Authority – NCA is responsible to safety and efficiency of shipping traffic, and protection of the marine environment at the national level.

Article 4
National Authority as referred to in paragraph (1) is authorized to determine the *Navigation District as responsible for* a Vessel Traffic Service (*VTS*) Station.

Article 5
VTS Manager has the responsibilities to Ensure the Vessel Traffic Service (VTS) station which is under its management have *sufficient resources to give services* as determined by National Competent Authority and *Realizing and developing the opportunity to improve the services* that could be given by the VTS station management.
VTS Supervisor has responsibilities to *supervise activities* which are implemented in the Vessel Traffic Service (VTS) Station that under its responsibility in accordance with *kind of services* which has been determined for station referred.
● To *supervise the group* that responsible to implement the Vessel Traffic Service (VTS) services to fulfill provision of authority station and *meet needs of ships and other users.*
● *Ensure the fulfillment of standard* that determined by VTS Manager about the *continuity of operator qualification*.
● *Ensure the sustainability of coordination* between intended station, other cooperation services, facilities and other port services.
VTS Operator as referred to in paragraph (1) above has responsibilities to *Provide information and instruction* which has been given by authorized to ships (and *allied services*) in accordance with kind of services that determined on Vessel Traffic Service (VTS) station intended also (do) decide actions that should be taken in response to shipping traffic data which has been received and *To communicate with ships* as required in the work area on the region of the scope of work Vessel Traffic Service (VTS) station intended.

Article 8
Operating activities in the implementation of VTS stations include:
● Giving *Information services, Navigational assistance services*, and *Traffic management services*.
● Maintain the safety and efficiency of shipping traffic and *environmental protection in the regions* of VTS operations.
● Maintain the resources, facilities or installations that are in operation areas of VTS.
● Implementing the services *cooperation with VTS* or other related institutions (*allied service*) as necessary.
● *Taking the necessary steps* o*n the name of National Authority* if there are activities that can harm shipping traffic in the VTS operation area.
● Vessel Traffic Service (VTS) Station *organizers have to submit the station operational report in writing every month* and/or if there is emergency situation to Director General.

Article 9
Maintenance of Vessel Traffic Service (VTS) includes *quarterly* treatment and *annual* treatment.
Maintenance of Vessel Traffic Service (VTS) sensor station that located in separate location from VTS sub-centre includes *daily* (by RMS) treatment, *monthly* treatment and *annual* treatment.
A *repair* in the Vessel Traffic Service (VTS) Station is *conducted by approval* from competent authority at the station.

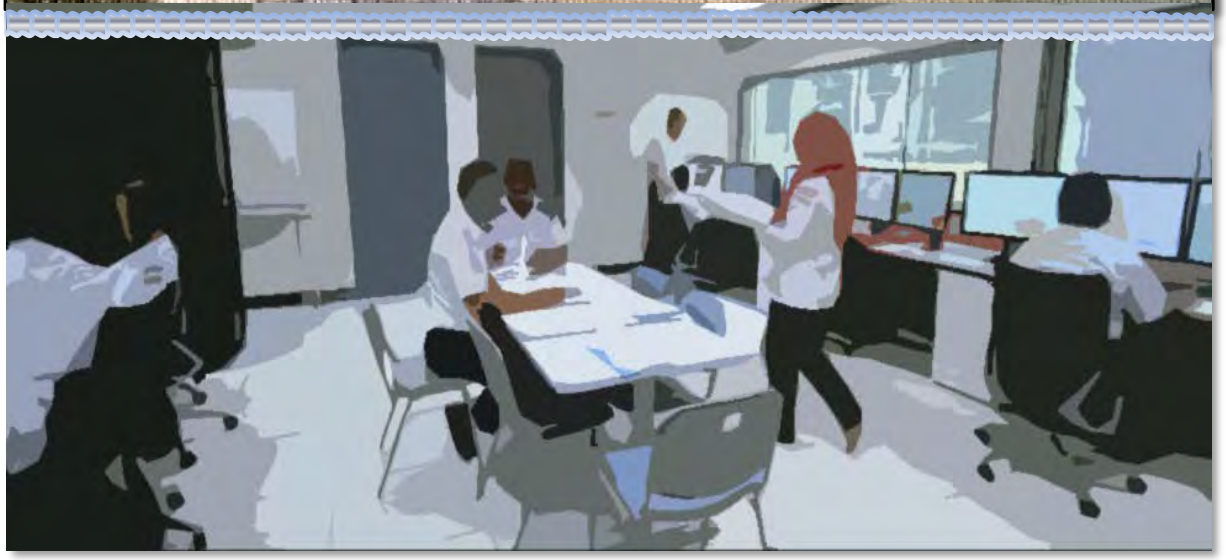
CHAPTER IV: SUPERVISION AND MAINTENANCE
Article 10
Vessel Traffic Service (VTS) station *organizers* must conduct surveillance operation monitoring and maintenance to *maintain the reliability of the station*.

Article 11
Vessels Traffic Service (VTS) stations *organizers* must record every maintenance activities as referred to in paragraph (1) and *submit the monthly reports in writing to Director General.*
Vessel Traffic Service (VTS) station *organizers* must allocate a *budgets for operational and maintenance costs* to maintain the reliability of the station.

CHAPTER V: CLOSING PROVISIONS
Article 12
This Decision shall *come into force* as of the date of enactment. Determined in: Jakarta Dated: *day, Month, Year* *DIRECTOR GENERAL OF SEA TRANSPORTATION: Name*

Vessel Traffic Service
Sub-CENTER DUMAI

USER's MANUAL



VESSEL TRAFFIC SERVICES SUB-CENTER DUMAI

(STASIUN RADIO PANTAI KELAS I DUMAI)

ALAMAT:
J.L. Ahmad Yani NO.1
DUMAI 28825
Telephone 1: (0765) XXXXX
Telephone 2: (0765) XXXXX
(0765-31382: SROP)
E-MAIL: sropdumai@yahoo.co.id
FAX: XXXXXXXXXX
URL: http://www.dumaivts.co.id
(Note: This is Imaginary address!!)

This "USER's Manual" was created by the trainees themselves as part of improving the ability of Dumai VTS candidate operators.
Of course it is not official, nor authenticated. All of us Instructor wish to publish as an official document in the near future after evaluation of DGST as National Competent Authority and Dumai NAVIGASI as VTS Authority.

From Instructor: Japan Aids to Navigation Association.

The Project on Enhancing Vessel Traffic Services System Management Capability Phase 2

Supported by
Japan International Cooperation Agency（JICA）
Japan Aids to Navigation Association（JANA）

THE MARINER IS CAUTIONED THAT INFORMATION PROVIDED BY VESSEL TRAFFIC SUB-CENTERS IS TO A LARGE

EXTENT BASED UPON REPORTS OF PARTICIPATING VESSELS AND CAN BE NO MORE ACCURATE THAN THE INFORMATION RECEIVED. THE VTS SUB-CENTERS MAY NOT KNOW OF ALL HAZARDOUS CIRCUMSTANCES WITHIN THE VESSEL TRAFFIC AREA.

UNREPORTED HAZARDS MAY CONFRONT THE MARINER AT ANY TIME. ANY CONFLICTING CIRCUMSTANCES OR HAZARDOUS CONDITIONS SHOULD BE REPORTED TO THE VESSEL TRAFFIC SUB-CENTER IMMEDIATELY.

DUMAI VTS USER MANUAL TABLE OF CONTENTS

DUMAI VESSEL TRAFFIC SERVICE SUB-CENTER
"DUMAI VTS"
USER's MANUAL *(DRAFT)*

Ⅰ. INTRODUCTION

DUMAI Vessel Traffic Service Sub-Center, "DUMAI VTS", whose missions are to enhance the safety of vessels and improve the efficiency of vessel navigation in the area described below, has been established and operated by Directorate General Sea Transportation – Republic of Indonesia

(See Figure1 shown below." Area of Responsibility").

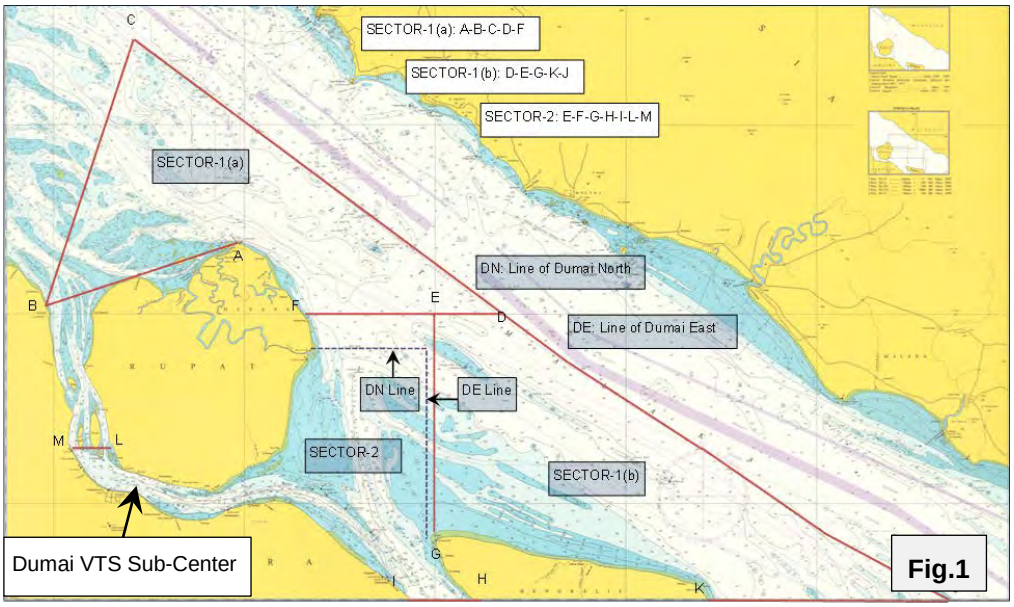


Fig.1

This "User's Manual" aims at contributing to the safe navigation of vessels by explaining about services provided by the Sub- Center and essential information while underway in *above mentioned area.* Vessels to navigate in *the area* are highly recommended to carry this manual in the bridge and utilize as a reference book.

The Sub-Center is operated in accordance with Law, Government Regulations, Presidential Decree, Public notices and Minister of Transportation Regulation listed below. Exact application of rules should be referred to these regulations.

1) Laws Number 17 Year 2008 regarding Shipping (State Gazette of Republic of Indonesia Year 2008 Number 64, Supplement to The State Gazette of Republic of Indonesia Number 4849);

2) Government Regulation Number 51 Year 2002 regarding Ship building (State Gazette of Republic of Indonesia Year 2002 Number 95, Supplement to The Gazette of Republic of Indonesia Number 4227);

3) Government Regulation Number 61 Year 2009 regarding Harbor (State Gazette of Republic of Indonesia Year 2010 Number 151, Supplement to The Gazette of Republic of Indonesia Number 5070);

4) Government Regulation Number 5 Year 2010 regarding Navigation (State Gazette of Republic of Indonesia Year 2010 Number 8, Supplement to The State Gazette of Republic of Indonesia Number 5093);

5) Presidential Decree Number 65 Year 1980 regarding Ratification of International Conventional for The Safety of Life at Sea, 1974（SOLAS）;

6) Presidential Regulation Number 47 Year 2009 regarding The Formation and Organization of State Ministries as last amended by Presidential Decree Number 91 Year 2011;

7) Minister of Transportation Regulation Number KM 60 Year 2010 regarding Organization and Working Procedures of Ministry of Transportation;

8) Minster of Transportation Regulation Number PM 26 Year 2011 regarding Shipping Telecommunication;

9) Minister of Transportation Decree Number 173/AL.401/PHB-84 regarding enactment of The IALA Maritime Buoyage System for Region-A in the navigational aids order in Indonesia

Ⅱ. OPERATIONAL CONCEPT OF DUMAI Vessel Traffic Service Sub-Center

DUMAI Vessel Traffic Service Sub-Center maintains and improves the safety of vessels in *the area* by

1) collecting, verifying and monitoring vessel traffic information by equipment such as RADAR, CCTV, AIS and VHF radio,

2) providing information which is necessary for the safety of vessels,

3) providing navigational advice to vessels when it is considered necessary to avoid imminent danger or possibility of violation of traffic regulations,

4) Instructing vessels to stand by outside of *the area* in case visibility reduces *(less than 0.5 NM),* and instructing the permission or arrange the time of entry into *the area*.
In addition to VHF radio communication, the Sub-Center provides navigational assistance information by AIS, VHF radio broadcast, telephone, facsimile and internet Homepage *(www.dumaivts. com)*.

Radar

CCTV Camera

AIS Transponder

Ⅲ. IMPORTANT NAVIGATIONAL RULES

The establishment of safety traffic areas notices as local rules. Other than specifically regulated by these regulations, e.g the *Act for Preventing Collision at Sea,* which is Local Law for the International Regulation for Preventing Collision at Sea, is the applied important traffic regulations are explained below. As these explanations cover only major rules, it is recommended to refer to the related regulations for the exact application of these rules.

The reference charts that show the operational area of DUMAI VTS Sub-Center are:

✧ Indonesian Chart No : 12,18 of the Hydrographer; Indonesian Navy; or Equivalent charts published by the competent hydrographic authority

a. *The usage of safety traffic areas*
b. Giving way to other vessels
c. *Mandatory traffic regulations* in the traffic the *area*
d. Limitation of navigation speed
e. Transmitting destination information by AIS while vessels equipped with AIS are underway in the *area*, the vessels shall transmit an AIS signal to tell the *name of the destination port and route* as the destination information of AIS in order to inform the other ships of the route of the vessels.

IV. COMMUNICATION

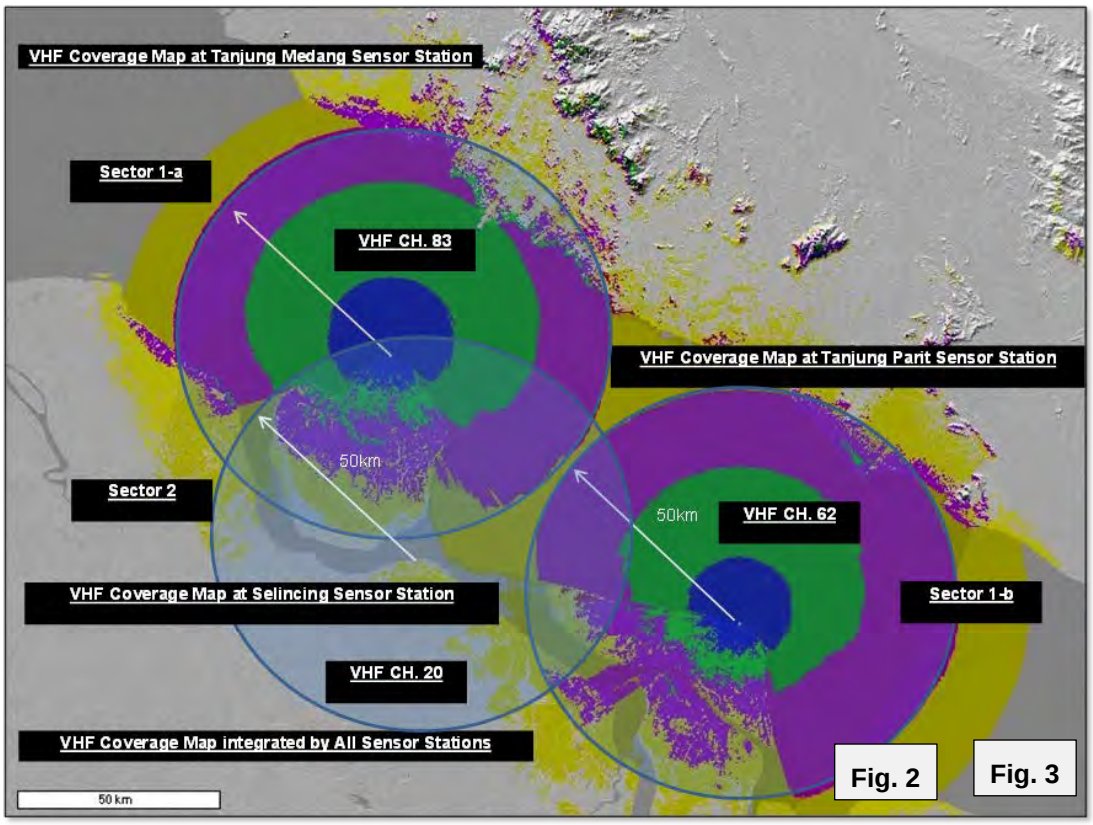


Fig. 2 Fig. 3

1) VHF CHANNELS

VHF channels to communicate with VTS DUMAI are as follows.

Channel 16: calling and response

Channel 83: communication with Sector 1-a

Channel 62: communication with Sector 1-b

Channel 20: communication with Sector 2

2) COMMUNICATION LANGUAGES

Communication language is Indonesian and English. Wherever possible, “IMO Standard Maritime Communications Phrases” and “Message Markers” must be used

VTS DUMAI monitors ***channel 16*** all the time. Vessels equipped with VHF radio are highly recommended to monitor the ***channel 16*** while underway within the information service area (See, Fig.2: “Radar Surveillance area” and Figure3. “Estimated Coverage of VHF Radio and AIS Base station”)

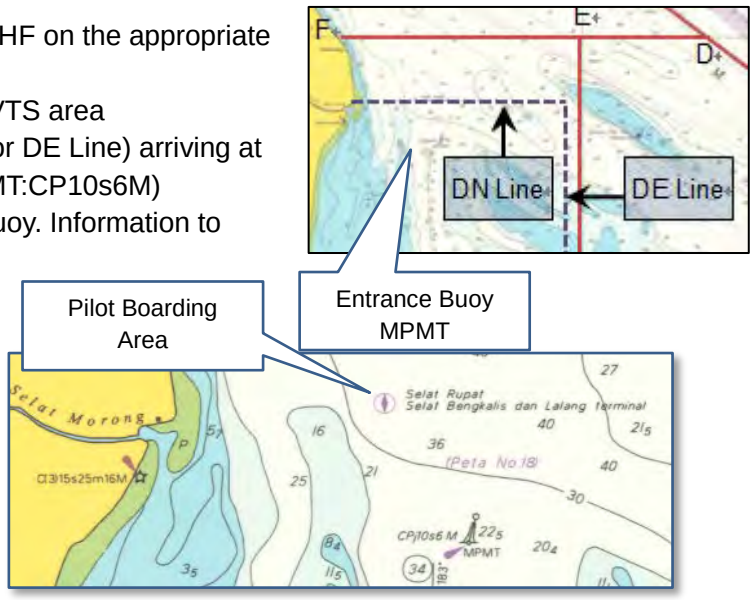
V. PRE-ARRIVAL REPORT AND POSITION REPORT

1) PRE-ARRIVAL REPORT OF 48 hours ADVANCE
The master of the vessel shall submit the pre-arrival report to DUMAI VTS Sub-Center by noon of the 2 days prior to the entry into the area.

When any changes occur in the report, she shall report to the Sub-Center 3 hours before the scheduled time to enter the area. If any other changes occur after that, she shall report to the Sub-Center as soon as possible.

2) Confirmation of Entry
Notification shall be made by VHF on the appropriate sector frequency.

a) When entering the DUMAI VTS area
b) Approx.3 miles before (DN or DE Line) arriving at the port Fairway Buoy (MPMT:CP10s6M)
c) When at the port Fairway Buoy. Information to provide
   - Name and Call sign
   - Position
   - Any change to information previously provided
d) When pilot is on board (Refer “area”)



3) Vessels required to report
   a) Vessels of *300 GT* and above;
   b) Vessels of *30metres* or more in length;
   c) Vessels engaged in *towing or pushing with a combined length of 30metres* or more
   d) Vessels of *any tonnage carrying hazardous cargo*, as defined in paragraph 1.4 of resolution MSC.43(64)
   e) *All passenger vessels that are fitted with VHF* regardless of length or GT; and
   f) *Any category of vessels less than 30metres in length or less than 300GT which are fitted with VHF* and in an emergency uses the appropriate traffic lane or separation zone in order to avoid immediate danger.

4) Exempt Vessels
   The following vessels are exempt from reporting:
   a) Military vessels of the Republic of Indonesia.
   b) Indonesian government vessels such as vessels engaged in patrol activities.
   c) Support vessels engaged in support of authorized marine events and special operations.
   d) Certain vessels engaged in various operations may be granted equivalent reporting status.
      In the case of ferries, agreement should be made by MOU. However, in each case the ferry should provide a minimum report to DUMAI VTS of departure and arrival at berth in DUMAI together with any defects/deficiencies when applicable.

5) Items to be reported (Ship owner or Agents by e-mail or Fax)

   Vessels with report obligation shall report applicable items among the following items.
   a) Name and Call sign
   b) Position
   c) Last port
   d) Destination Port in DUMAI area
   e) ETA DUMAI VTS Area limits
   f) Deepest Draught in meters
   g) Length Over All in meters
   h) Cargo
   i) Description of defects and/or deficiencies
   j) Description of Dangerous Goods
   k) Number of persons on Board, and if a Passenger Ship the number of Foreign and Local Residents
   l) Name of Agent

6) Addressee and means of report

a) Addressee

DUMAI Vessel Traffic Service Sub-Center (“DUMAI VTS”)

b) Means of report

When the master of a vessel submits the pre-arrival report, one of the following means may be chosen.

- Written form: Address: JL. Ahmad Yani NO.1 DUMAI 28825
- telephone: Number +62 XXXXX, +62(0765) XXXXX
- Facsimile: Fill in the report form and send to DUMAI Vessel Traffic Service Sub-Center.

  FAX: XXXXXXXXXX

  E-MAIL: sropdumai@yahoo.co.id
- radio communication

  Contact the shore-based radio station: "DUMAI VTS" through VHF radio Ch 16 Frequencies: (156.800) MHz.

7) POSITION REPORT

Immediately after vessels cross the initial position reporting line see the Figure 1 attached to this manual.

a. Items to be reported

- vessel's name and international radio call sign
- time when vessels cross the initial position reporting line, and the
- code of the line (DN and DE)
- destination

b. Means of report

- call sign: "DUMAI VTS"
- calling channel: The ships intended to enter to sector 2: channel 20

  The ships intended to enter to sector 1 (a): channel 83

  The ships intended to enter to sector 1 (b): channel 62

  The Ships intended to cross DN and DE line: Channel 62
- telephone :Number +62 (0765) XXXXX, +62 (0765) XXXXX

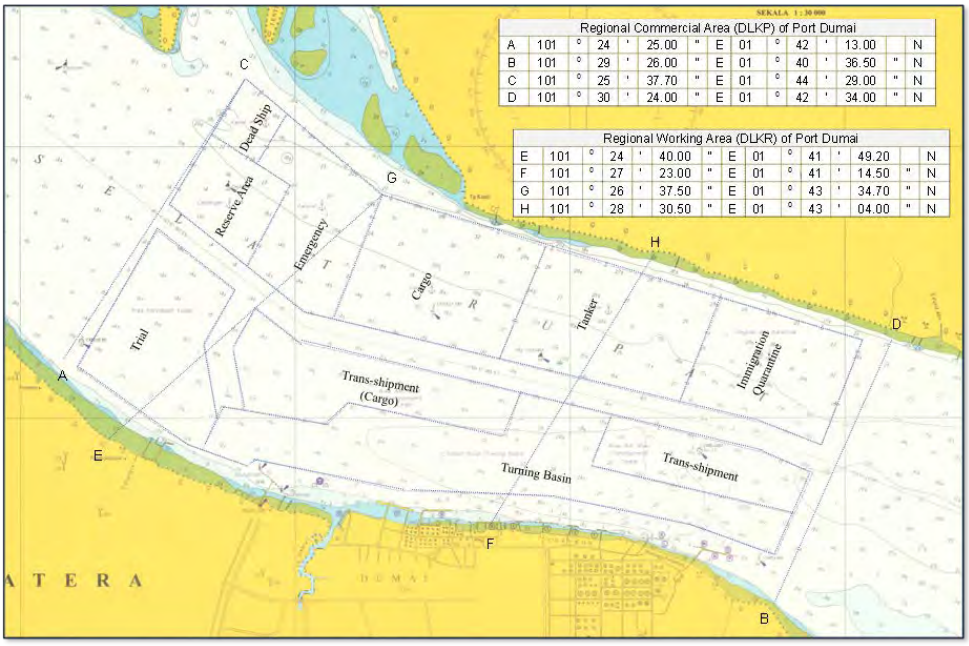
8) INFORMATION-SERVICE AREA AND MONITORING OF VESSELTRAFFIC

The information service area of DUMAI Vessel Traffic Service Sub-Center is shown in the figure 1 attached. The Sub-Center monitors vessel traffic in its information-service area by RADAR (Tg. Medang), AIS Base Station (Tg. Medang, Tg. Parit and Selincing) position-report information, CCTV (Tg. Medang) and so forth.

VI. Pre-Departure and Departure Reports. Information to be provided

1) Items to be reported.

Notification shall be made to DUMAI VTS by the vessel via radio, telephone, facsimile or email. A minimum 1hour prior departure from or move within the port, anchorage or Trans-shipment area. (Refer Map shown below)



a) Name and Call sign
b) Position
c) Destination
d) ETD
e) Deepest draught in meters
f) Length Over All in meters
g) Cargo
h) Description of defects and or deficiencies
i) Description of dangerous or hazardous goods
j) Confirmation that permission to sail has been received from the Harbor Master
k) Number of persons n board and if a passenger ship the number of foreign and local residents

2) Confirmation of Departure

Notification shall be made15minutes prior departure. Information to be provided;

a) Name and Call sign

b) Position
c) Any change to information previously provided
d) Onboarding Pilot or not

VII. SERVICES PROVIDED BY VHF RADIO

1) APPLICATION OF MESSAGE MARKERS

When DUMAI Vessel Traffic Service Sub-Center provides information, warning, advice or instruction for vessels, one of the following message markers "INFORMATION", "WARNING", "ADVICE" and "INSTRUCTION" is used before the message to increase the probability of the purpose of the message being properly understood.
Message markers are used in accordance with the IMO Standard Marine Communication Phrases and the meanings of message markers used are as follows.

"INFORMATION"
This massage marker indicates that DUMAI Vessel Traffic Service Sub-Center inform the observed facts, situations, etc. Which contribute to navigational safety to vessels. Consequences of INFORMATION will be up to the recipient.

"WARNING"
This massage marker indicates that the Sub-Center inform any dangerous situation that may impede the navigational safety of vessels. The recipient of this message should pay their immediate attention to the situation mentioned and consequences of WARNING will be up to the recipient.

"ADVICE"
This massage marker indicates that the Sub-Center provide advice, pursuant to the Law, Government Regulations, Presidential Decree, public notices and Ministry of Transportation Regulation, to take any necessary action to comply with the traffic regulations in the area, to avoid the dangerous situation that may impede the navigational safety of vessels. The recipient of this message should maneuver, considering this advice very carefully. The decision whether to follow the advice still stays with the recipient.

"INSTRUCTION"
This massage marker indicates that the Sub-Center instructs vessels to take a certain action, pursuant to the Law, Government Regulations, Presidential Decree, public notices and Ministry of Transportation Regulation.
The recipient obligate to follow this message unless they have any safety reasons contradictory to the message instructed.

2) TYPE OF INFORMATION PROVIDED WITHIN THE INFORMATION AVAILABLE AREA

DUMAI Vessel Traffic Service Sub-Center provides the following information within its area in which the Sub-Center is able to provide information through VHF radio. Any of the following information which the Sub-Center considers necessary for vessels of 30 meters and over in length here in after referred to as "specified vessels" who navigate in the area in which specified vessels strongly recommended keep watch on the information from the Sub-Center through VHF radio here in after referred to as *"VHF coverage area".(See, Figure 2)*

a. in*formation on the traffic regulations applied in the VHF-Coverage are when it is found that specified vessels are likely to navigate against the traffic regulations*

b. information on the occurrence of any impediment to the safety navigation of specified vessels such as a sunken vessel, any defect or discrepancy in a marine aid to navigation, etc.

c. information on areas in which specified vessels have difficulty in navigate safely such as an area where any work or operations is being carried out, very shallow waters, etc., and in case that specified vessels extremely close to the areas

d. information on vessels who have difficulty in giving way to the other vessels and have any possibility of causing serious dangers to the navigational safety of specified vessels

e. information on specified vessels who extremely close to the other specified vessels or other ships

f. any other information considered necessary for specified vessels to keep watch on information referred in the preceding section a) through g). which DUMAI Vessel Traffic Service Sub-Center considers necessary for vessels equipped with AIS other than specified vessels (here in after refer red to as AIS-equipped vessels” Message Marker, "INFORMATION" or “WARNING” information which the Sub-Center considers necessary to provide for the navigational safety of specified vessels or AIS-equipped vessels or information offered to specified vessels or AIS-equipped vessels on their request Message Marker: "INFORMATION")

"The VHF-Coverage area", ON INFORMATION THROUGH VHF RADIO

Pursuant to the Law, Government Regulations, Presidential Decree, public notices and Ministry of Transportation Regulation, specified vessels those equipped with VHF radio, while they are underway in the VHF-watch area and in case they have difficulty in watching on VHF radio, keep watch on the information provided through VHF radio by DUMAI Vessel Traffic Service Sub-Center.

ADVICE (Message Marker" ADVICE “Provision of advice Pursuant to the Act of Maritime Traffic Safety, DUMAI Vessel Traffic Service Sub-Center may provide "advice" for specified vessels underway in the VHF-watch area to advise the vessels to take any necessary action such as altering the vessels' course and so forth in order to prevent them violating the traffic regulations and getting involved in any possible danger in such cases as follows;

- in case the Sub-Center recognizes that the specified vessels are likely to navigate against the traffic regulations applied in the area, in case the Sub-Center finds that the specified vessels have any possibility of getting extremely close to the other vessel or an obstruction, in case the Sub-Center recognizes that there lie the other factors to cause any possible danger which impedes the navigational safety of the specified vessels.
- In addition to VHF radio, "advice" maybe conveyed by telephone, etc.

  Action to be taken by vessels who receive "advice" The vessels who receive "advice" from the Sub-Center are advised to decide the proper action to take in order to comply with the traffic regulations applied in the VHF-watch area or to avoid any possible danger, taking the Sub-Center's "advice" into consideration carefully, getting a firm grip on the circumstances surrounding themselves, and judging if any dangerous situation exists around themselves.

- Report on the action taken by vessels who receive "advice “When it is considered necessary, the Sub-Center may request from vessels for a report on the action taken by the vessels based on the advice given.

INSTRUCTION Message Marker "INSTRUCTION"

"Instruction" to specified vessels and etc.

- DUMAI Vessel Traffic Service Sub-Center may provide "instruction" referred in to specified vessels and etc. by VHF radio.
- "instruction" to stand by outside the area "Instruction" in case of the reduction in visibility Pursuant to the Law, Government Regulations, Presidential Decree, public notices and Ministry of Transportation Regulation, the Sub-Center may provide "Instruction" to stand by outside the area to the vessels listed below in order to prevent dangerous situations for such vessels who are underway or intend to enter the area. In addition to VHF radio, "instruction" may be conveyed by telephone, etc.

VIII. OTHER MEANS OF INFORMATION SERVICES

1) AUTOMATIC IDENTIFICATION SYSTEM (AIS)

DUMAI Vessel Traffic Service Sub-Center timely provides information necessary for

the safety of navigation in the area such as information on *marine accidents,* information on the restrictions on the entry into the area of the vessel, the present weather conditions, any defect or discrepancy in marine aids to navigation, the present situation of fishing boats engaged in operation, etc., to vessels underway in the AIS-service area by making good use of communication function of AIS.
When any dangerous situation which may impede the safety of navigation such as a vessel *heading for shallow waters* and so forth is found within the AIS-service area, the Sub-Center will provide vessels with information on such a dangerous situation whenever necessary by AIS.

2) Internet Homepage
Information on navigational safety and assistance is available on the Internet homepage of DUMAI Vessel Traffic Service Sub-Center.
URL: http://www.dumaivts.com

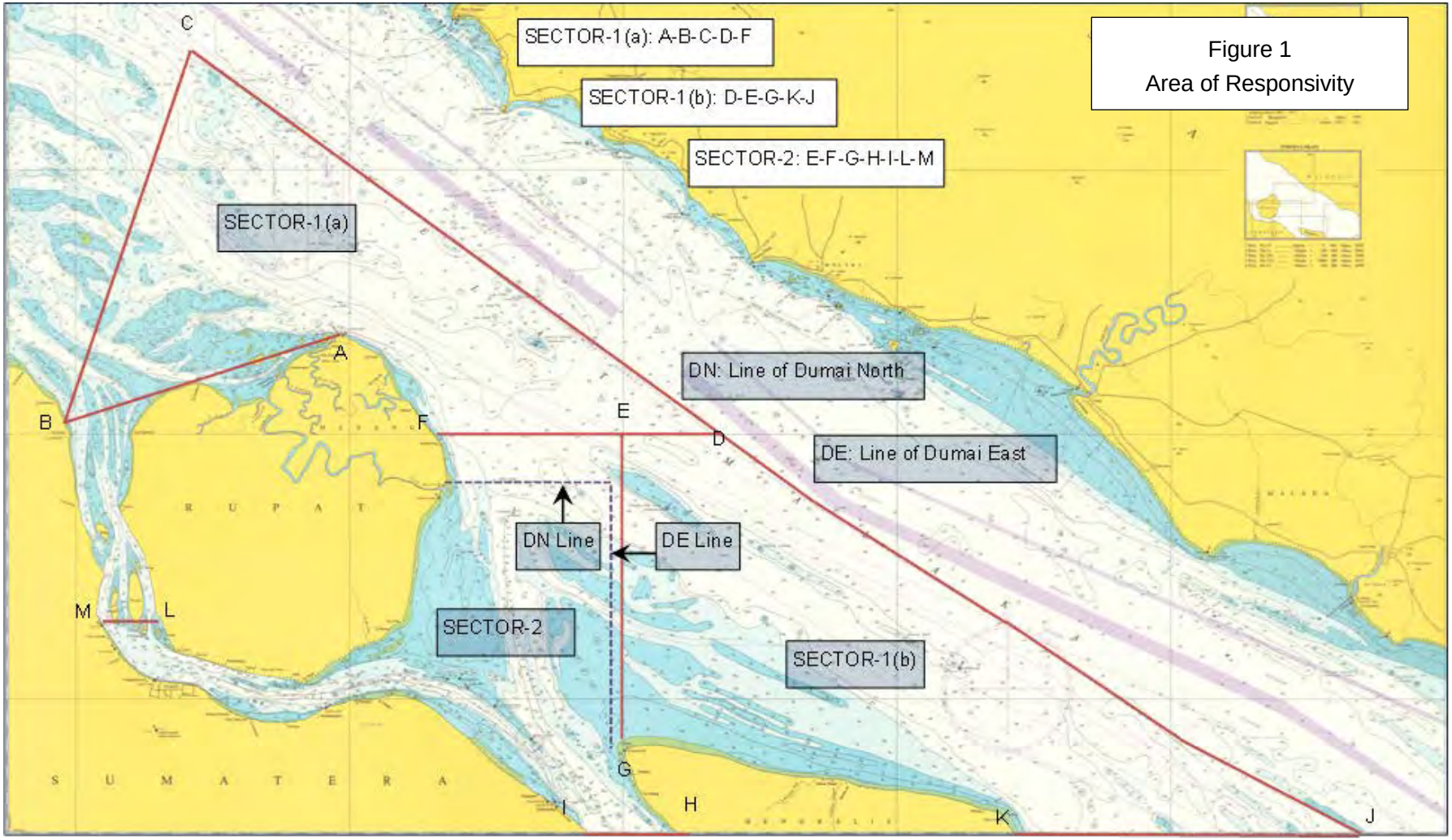
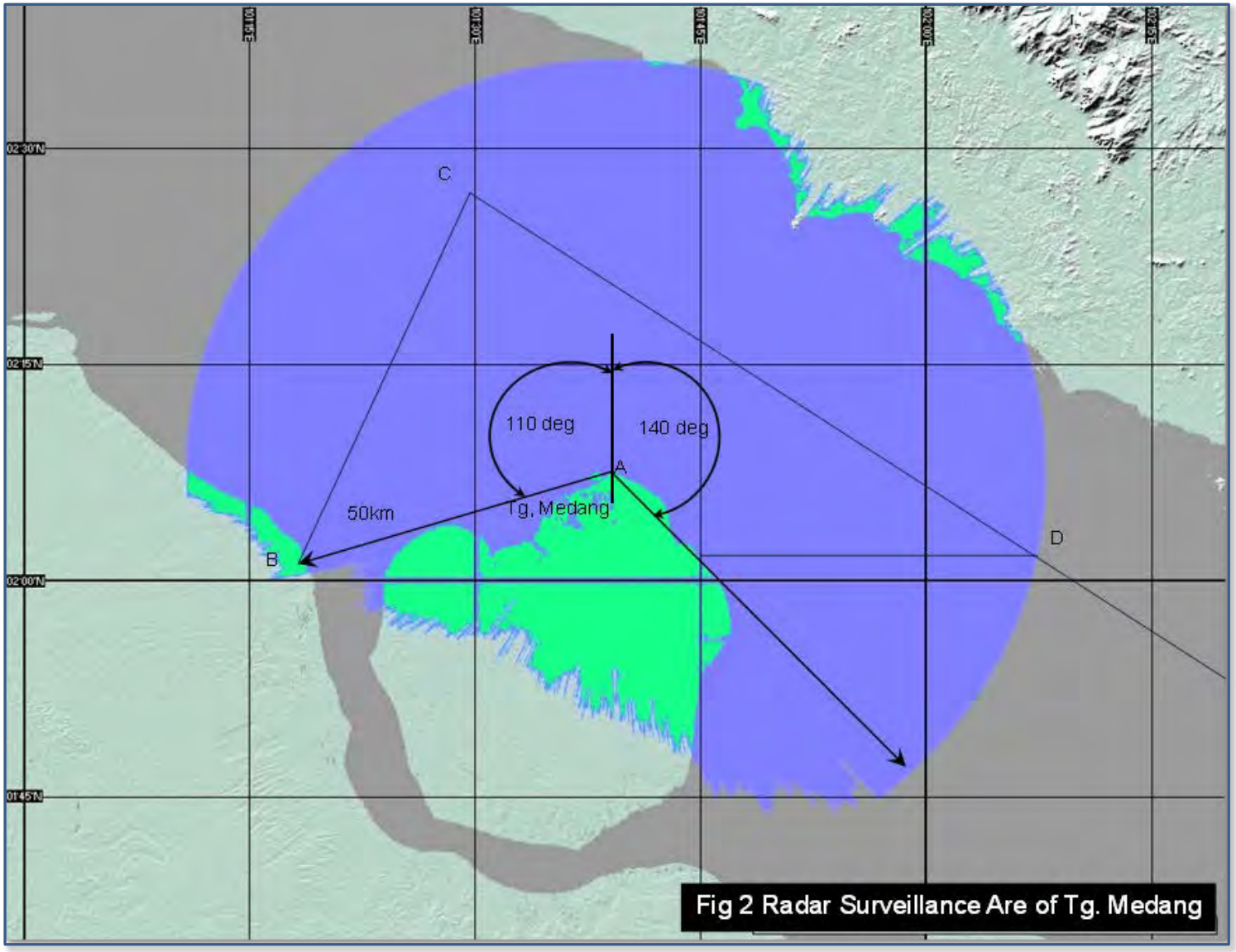


Figure 1
Area of Responsivity


C
110 deg
140 deg
A
50km
Tg. Medang
B
D
Fig 2 Radar Surveillance Are of Tg. Medang

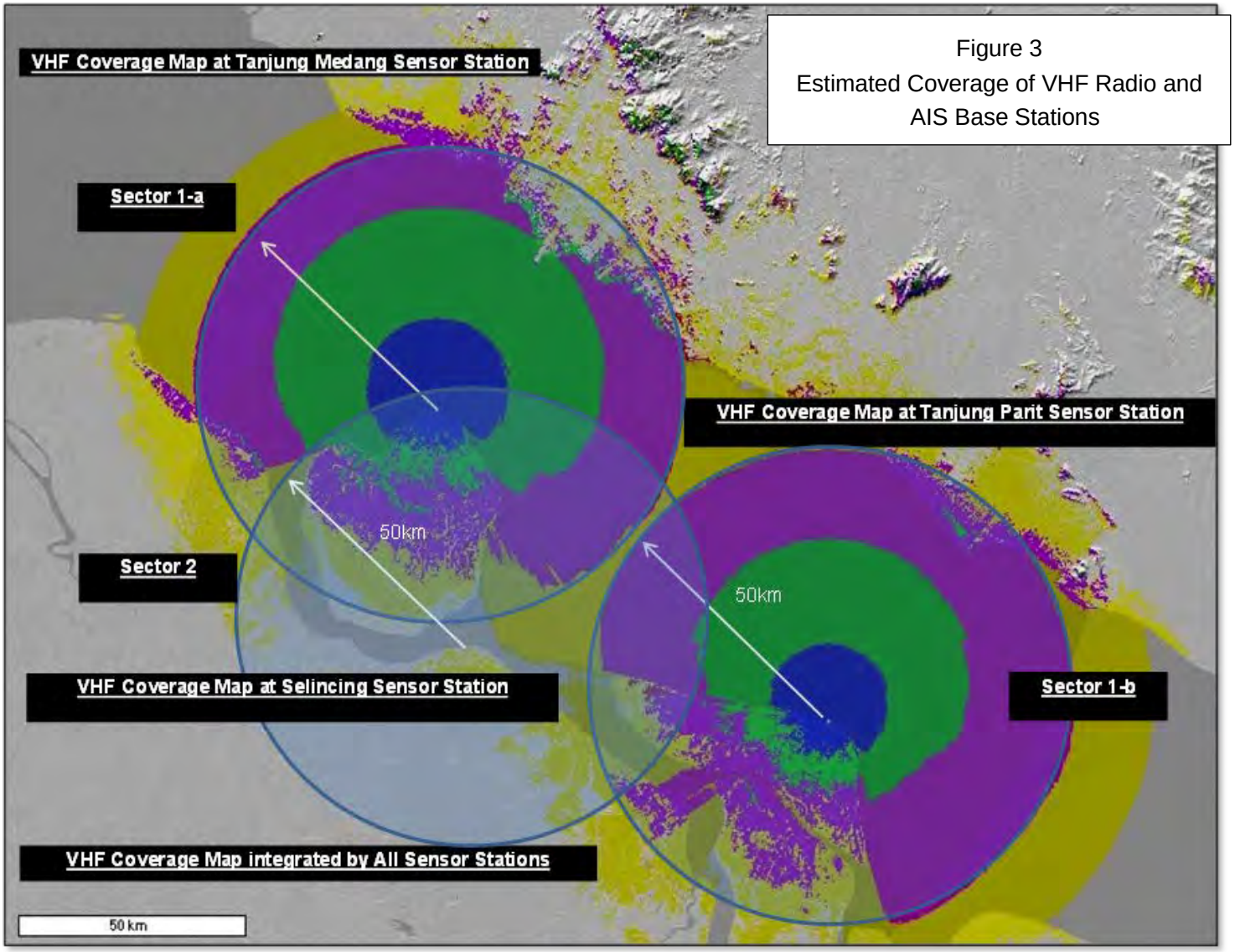


Figure 3
Estimated Coverage of VHF Radio and AIS Base Stations

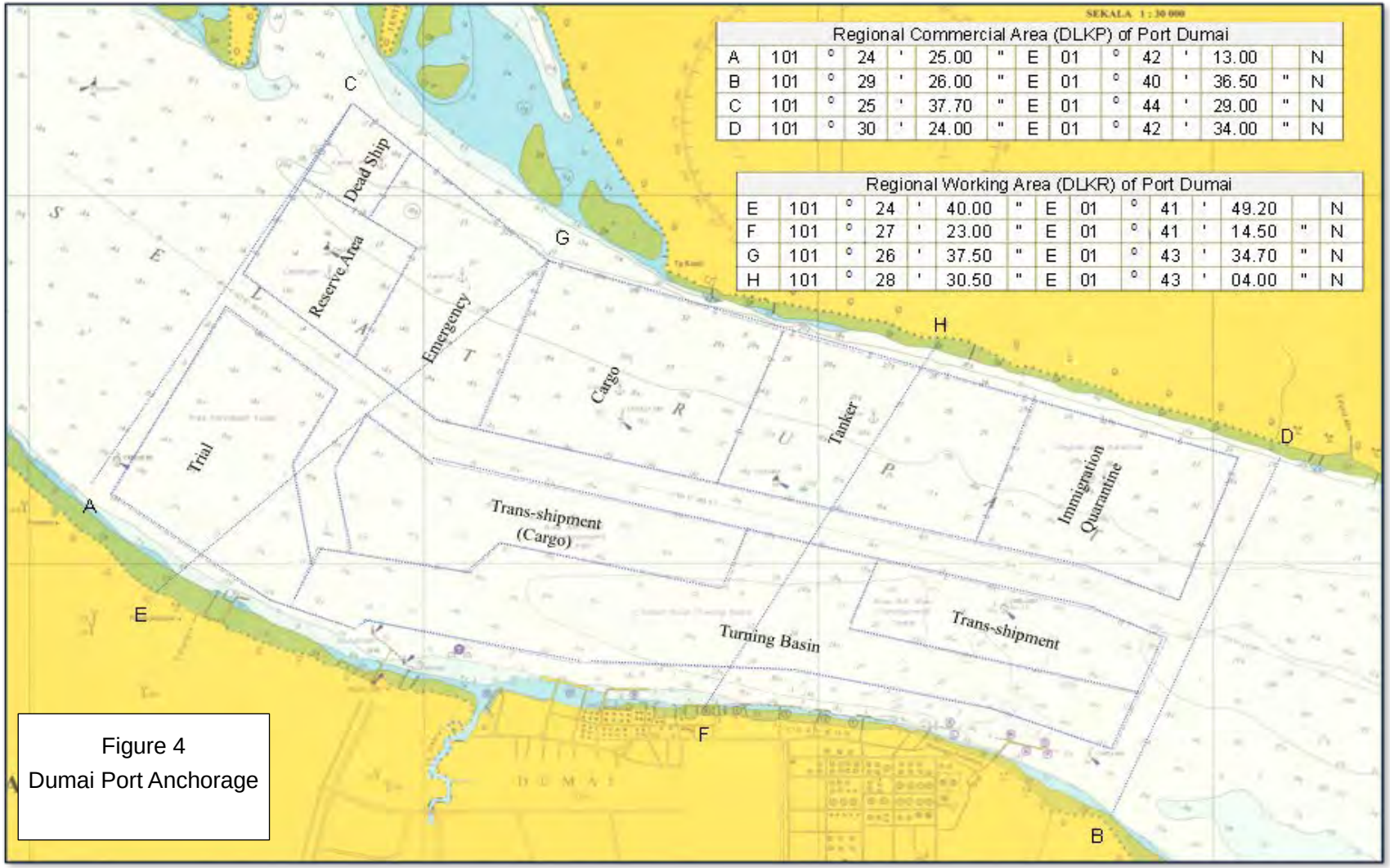


Figure 4
Dumai Port Anchorage

Attachment 5

Training Completion Certificate

VTS OPERATOR
Course Certificate

No. 2017-0001-JANA

This is to certify that

YUZNIZAR

has successfully completed

V-103 VTS Operator Training Course

issued on behalf of:
Director of Navigation
Directorate General of Sea Transportation (DGST)
Ministry of Transportation
The Republic of Indonesia

Awarded by: Japan Aids to Navigation Association (JANA)

Signature Sumio Shioda

SUMIO SHIODA
President

Date: 23rd of March 2017

The course certificate is awarded in accordance with IALA Recommendation V-103 and Model Course V-103/1

Attachment 6

Snapshots

Attachment 6

Snap shots

Dumai Zuri Hotel -site of training

Greeting at opening ceremony by Mr. Tofun of DGST, Jakarta

Training scenes

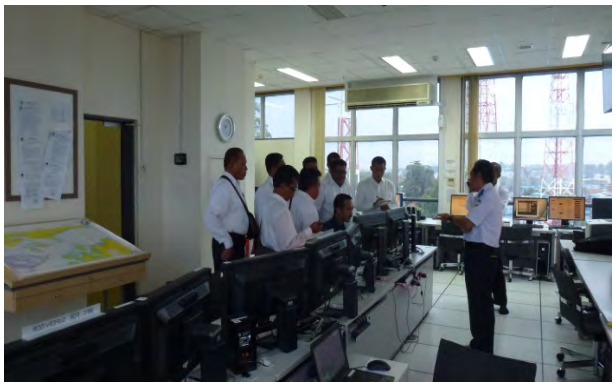
Dumai VTS Sub-center

Training scene at the Dumai VTS Sub-center

Ferry boat to/from Batam

Batam VTS Center

Training scene at Batam VTS Center



Award of the training completion certificate at the closing ceremony

Closing remark by Mr. Kazuo Uezumi、
Indonesia Office Representative

International Association of Marine Aids to Navigation and Lighthouse Authorities

IALA

Association Internationale de Signalisation Maritime

AISM

IALA Recommendation V-103

On

Standards for Training and Certification of VTS Personnel

Edition 2.1

December 2013

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Edition 1.1 / December 2005
Edition 1 / March 1998

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Document Revisions

Revisions to the IALA Document are to be noted in the table prior to the issue of a revised document.

Date	Page / Section Revised	Requirement for Revision
July 2005	Entire document reformatted	Reformatting to meet IALA documentation standards
September 2009	Entire document	Major revision and updating
December 2013	Chapter 1.1 and 1.2	Minor additions

IALA Recommendation on Standards for Training and Certification of VTS Personnel

(Recommendation V-103)

THE COUNCIL:

NOTING that the International Convention on Standards of Training, Certification and Watchkeeping for Seafarers, 1978, as amended in 1995 (STCW Convention) contain regulations concerning training of ships' personnel and the Seafarer's Training, Certification and Watchkeeping Code (STCW Code) contains specifications of minimum standard of competence for ships' personnel;

NOTING ALSO that STCW 95 adopted Resolution 10 concerning Training of maritime pilots, vessel traffic personnel and maritime personnel employed on mobile offshore units;

NOTING FURTHER that the International Maritime Organisation in Assembly Resolution A.857(20) on Guidelines for Vessel Traffic Services:

- recommend that VTS Authorities be provided with sufficient staff, appropriately qualified, suitably trained and capable of performing the tasks required, taking into consideration the type and level of services to be provided;
- describe the skill and knowledge qualifications required by VTS Operators to provide vessel traffic services;

RECOGNISING that the 8th International Symposium on VTS (Rotterdam 1996) concluded that VTS Authorities should set standards for VTS Operators, in accordance with international guidelines and other relevant material.

RECOGNISING ALSO that VTS Authorities should provide facilities for training to those standards and institute measures to maintain those standards;

RECOGNISING FURTHER that following a request from the 8th International Symposium on VTS, IALA undertook to develop suitable training and certification standards for VTS Personnel;

CONSIDERING the proposals by the IALA VTS Committee;

ADOPTS the revised Standards for Training and Certification of VTS Personnel set out in the annex of this recommendation; and,

RECOMMENDS that National Members and other appropriate Authorities, providing or intending to provide Vessel Traffic Services, use the IALA standard of training and the related Model Courses as the basis for the training and certification of VTS personnel.

Table of Contents

Index of Figures

Annex
The Standards for Training and Certification of VTS Personnel

1 INTRODUCTION

1.1 General

International shipping operations need a common approach and universally agreed professional standards and competence for the delivery of Vessel Traffic Services (VTS). The successful delivery of such services depends upon competent and experienced personnel to discharge the responsibilities of a VTS Authority. Recognising that VTS personnel are members of a profession whose principle interaction is with mariners and maritime pilots for the safe management of maritime traffic, their competence needs to reflect that professional responsibility.

The recruitment, selection and training of suitable personnel is a pre-requisite to the provision of professionally qualified personnel capable of contributing to safe and efficient marine operations. Such personnel will help to ensure that full and due regard is given to the diverse tasks inherent in VTS activities.

This Recommendation sets out the training requirements and certification standards for VTS personnel. These should be implemented by National Members and other appropriate Authorities to ensure that uniform standards of procedures, practices and professional standards are applied by Vessel Traffic Services world-wide.

1.2 Objectives

Competent and / or VTS authorities are encouraged to adopt this Recommendation together with the associated model courses as the basis for mandatory training in a manner consistent with their domestic legal framework

The objectives of this Recommendation are to provide a basis:

- for VTS Authorities when recruiting VTS personnel;
- for Model Courses to establish a training programme on the specific knowledge and skill requirements necessary for qualification as a VTS Operator;
- to ensure that VTS personnel are trained and qualified to enable them to perform the tasks required;
- for maintaining a satisfactory level of operational performance through the systematic provision of refresher and/or revalidation training for qualified personnel;
- to regularly assess VTS Operators ability to perform to established and recognised standards and;
- for a structured career progression for VTS Personnel.

1.3 Definitions and Clarifications

For the purpose of this Recommendation, the following definitions and clarifications have been used:

- **Accredited VTS Training** is a course of study comprising VTS training which has been accredited by the Competent Authority or by an organisation approved by the Competent Authority for that specific purpose. Accredited VTS training should comply with IALA standards.

- **Competent Authority** is an authority made responsible, in whole or in part, by the Government for the safety, including environmental safety, and efficiency of vessel traffic and the protection of the environment.
- **Competence** means having the qualifications essential to effectively and efficiently carry out the functions or sub-functions assigned to a particular VTS position;
- **On-the-Job Training** (OJT) is training and familiarisation at the VTS Centre at which the person will be employed. It includes training on the particular types of service provided by the VTS centre, the facilities and equipment used as well as the local geography and appropriate port regulations and procedures. OJT should normally be carried out by a designated OJT Instructor.
- **Refresher Training** is training necessary to ensure that VTS personnel maintain a satisfactory level of operational performance. Refresher training may follow an assessment made by the VTS Authority, or may take place as a part of a training programme and continual professional development.
- **Revalidation Training** is training that ensures competence after a break in service. The Competent/VTS Authority may determine the duration of the break in service after which the revalidation training is required.
- **Simulator Training** is the simulation of operational events, practices and procedures to instruct trainees and assess their ability to demonstrate their levels of competence.
- **VTS Authority** is the authority with responsibility for the management, operation and co-ordination of the VTS, the interaction with participating vessels and the safe and effective provision of the service.
- **VTS Certification Log** is a record of certificates and endorsements awarded to VTS Personnel during their VTS career.
- **VTS Operator (VTSO)** is an appropriately qualified person performing one or more tasks contributing to the services of the VTS.
- **VTS Operator Certificate** is a certificate of competence awarded by a Competent Authority after the candidate VTSO has successfully completed both the V-103/1 training and V-103/3 OJT at the specific VTS centre where the VTSO is employed, as well as meeting any specific requirements of the Competent Authority. The VTS Operator Certificate entitles the authorised holder to serve as a VTS Operator and perform the functions which endorsements have been made.
- **VTS Operator Course Certificate** is a document awarded by the training organisation, to indicate that a trainee has achieved successful completion of an accredited course of instruction (V-103/1).
- **VTS Personnel** are persons primarily trained in VTS operations and holding appropriate qualifications issued by, or on behalf of, a Government or a Competent Authority. Two grades of skills, knowledge and competence of VTS Personnel are set out in this Recommendation namely, VTS Operator and VTS Supervisor respectively (Annex 1 and 2 provide a broad guide regarding job descriptions of these two grades). Some VTS centres may also have a VTS Manager.

1.4 Abbreviations

IMO	International Maritime Organisation
IALA	International Association of Marine Aids to Navigation and Lighthouse Authorities
IAPH	International Association of Ports and Harbours
IMPA	International Maritime Pilots Association
OJT	On-the-Job Training
OJTI	On-the-Job Training Instructor
VTS	Vessel Traffic Services

VTSO Vessel Traffic Service Operator

1.5 References

[1] VTS Manual

[2] IALA/IAPH/IMPA World VTS Guide

[3] Model Courses V-103/1, V-103/2, V-103/3 and V-103/4

[4] Guideline 1014 – Accreditation of VTS Training Courses

[5] Guideline 1017 – Assessment of Training Requirements for Existing VTS Personnel, Candidate VTS Operators and Revalidation of VTS Operators Certificates

[6] Guideline 1027 - Designing and Implementing Simulation in VTS Training at Training Institutes and VTS Centres

[7] Guideline 1045 - Staffing Levels at VTS Centres

2 GENERAL PROVISIONS

2.1 Responsibilities

The following excerpts from IMO Resolution A.857(20) Guidelines for Vessel Traffic Services are relevant to training:

In planning and establishing a VTS, the Government or the Competent Authority should:

- determine the services and level to which the services are to be provided by the VTS, having regard to the objectives of the VTS;
- ensure that the VTS Authority is provided with sufficient staff, appropriately qualified, suitably trained and capable of performing the tasks required, taking into consideration the type and level of services to be provided;
- establish appropriate qualifications and training requirements for VTS operators, taking into consideration the type and level of services to be provided; and
- ensure that provisions for the training of VTS operators are available.

In operating a VTS the VTS Authority should:

- ensure that the standards set by the Competent Authority for types of service and operator qualifications and equipment are met; and
- ensure that the VTS operations are harmonised with, where appropriate, ship reporting and routeing measures, aids to navigation, pilotage and port operations.

2.2 Principles

A major factor in the efficient operation of a VTS centre is the standard of competence of its personnel. Recognising that VTS personnel are members of a profession whose principle interaction is with mariners and maritime pilots for the safe management of maritime traffic, their competence needs to reflect that professional responsibility.

VTS personnel should be capable of interacting with vessel traffic in a VTS area. All VTS personnel should be appropriately trained before they undertake the duties associated with the type of services provided such as, Information Service (INS), Navigational Assistance Service (NAS) and / or Traffic Organisation Service (TOS).

In order to carry out the duties required by a VTS Authority, VTS personnel should be appropriately trained and qualified to IALA V-103 standards. This means that VTS training is performed according to the Model Courses developed by IALA. It is for the VTS Authority to ensure that appropriately trained personnel are available to undertake these commitments.

In order to ensure that IALA standards for VTS training meet the appropriate level, the VTS training courses should be accredited by the Competent Authority. This should help to ensure the competence of personnel that occupy operational positions in a VTS Centre.

A person should therefore only be considered capable of carrying out the duties of a VTS Operator when in possession of the appropriate V-103/1 certificates and endorsements.

2.3 IALA Model Courses

The basis of VTS training is set out in the following IALA Model Courses:

1 V-103/1 VTS Operator

2 V-103/2 VTS Supervisor

3 V-103/3 VTS On-the-Job Training

4 V-103/4 VTS On-the-Job Training Instructor

These courses are not intended to be used directly as course material but are a guide that can be adapted in two ways:

- To meet the entry level knowledge of candidates; and
- To enable course design to be matched to the requirements of the appropriate Competent/VTS Authority.

The Model Courses are designed to produce universally common standards of training and performance. It is for the relevant Competent Authority to accredit the courses undertaken at VTS training organisations.

2.4 Accreditation of VTS Training

The purpose of accreditation is to provide a basis to ensure that the VTS courses meet the requirements of this Recommendation and the related Model Courses. It is also important that the Model Courses should be delivered under the framework of a Training Management System within an approved quality system.

A training organisation intending to provide VTS training should apply for accreditation to the Competent Authority of the country, in which it is located. The Competent Authority should carry out an audit in order to ensure that the IALA standards as well as any other requirements are met by the training organisation.

The IALA Guideline No 1014 *Accreditation of VTS Training Courses* sets out the process by which VTS Training Courses leading to the issue of V-103/1, V-103/2, V-103/3 and V-103/4 Course Certificates, can achieve accreditation.

2.5 Recognition of Certificates

Where suitable reciprocal arrangements apply, the Competent Authority of one Country or State should recognise a VTS Operator Course Certificate of another Country or State provided that the:

- certificate has been issued in accordance with this Recommendation; and
- Competent Authority is satisfied with the training arrangements of the other Country or State concerned.

3 VTS PERSONNEL

3.1 VTS Operators and Supervisors

VTS Operator and Supervisor training should be carried out by a training organisation, which provides accredited VTS training, and be conducted in accordance with the appropriate IALA Model Courses V-103/1 *VTS Operator Training* and V-103/2 *VTS Supervisor Training*. These internationally agreed qualifications for VTS personnel are the key to the establishment of common training standards. Maritime related qualifications may be taken into consideration when assessing the training requirements for prospective VTS Operators or Supervisors.

A sense of responsibility, watchfulness and preciseness characterise a competent VTS Operator. Training and education should therefore aim at stimulating these qualities.

In addition to the duties carried out by VTS Operators, VTS Supervisors supervise the activities undertaken within a VTS centre and ensure that the standards set by the authority are maintained.

3.1.1 Operational Job Descriptions

VTS Authorities should develop detailed job descriptions for their operational personnel at each VTS centre, based on the types of service to be provided, the equipment available and the coordination needed with other organisations and departments.

Examples of the format of job descriptions for VTS Operators and VTS Supervisors are provided in APPENDIX 1 and APPENDIX 2 respectively.

3.2 VTS Manager

The VTS Authority may establish the post of a VTS Manager. The VTS Manager is responsible for managing and co-ordinating the activities of the VTS centre on behalf of the VTS Authority. In some cases, a VTS Manager may have the responsibility for more than one VTS centre.

The manager should have knowledge of the principles and practices of the particular VTS, the types of service provided and the overall structure and capabilities of the VTS organisation. This VTS knowledge may be gained through experience as a VTS Operator or VTS Supervisor. Such experience would be particularly relevant where the role includes responsibilities for VTS contingency planning. The manager should also possess managerial qualifications required by the Competent or VTS Authority concerned.

An example of the format for a VTS Manager's job description is provided in APPENDIX 3.

3.3 VTS Career Progression

The formal recognition of VTS qualifications provides the foundation for a properly balanced and self-evident career structure and the drive to set and make every effort for improved standards of performance.

The establishment of internationally recognised VTS qualifications provides a professional framework similar to that adopted by the shipping and pilotage industry. The regular validation of those qualifications seeks to create improvement and quality standards comparable to those of other professions. These attributes enable successful personnel to offer their services for employment on a worldwide basis.

Additionally, the scope for career progression, either in VTS or in a wider diversity of associated marine activities offers a career structure which provides for motivation and ambition, whilst making continued use of the skills and experience gained (see example in Figure 1).

3.4 Instructors

VTS Personnel who demonstrate aptitude for training should be encouraged to obtain ability and experience in instructional techniques, knowledge of training programmes and an understanding of specific training objectives. This should enable them to become instructors for the VTS training courses or On-the-Job Training. In order to maintain a high level of training effectiveness, instructors should have an appropriate balance of professional VTS knowledge as well as an aptitude for teaching.

New methods and equipment are developed very quickly. This makes it necessary for instructors to keep up to date with new techniques and national and international rules and regulations. Instructors should be encouraged to include relevant new developments and techniques in the training.

Competent Authorities should ensure that Instructors are appropriately qualified and experienced for the particular types and levels of training and corresponding assessment of competence.

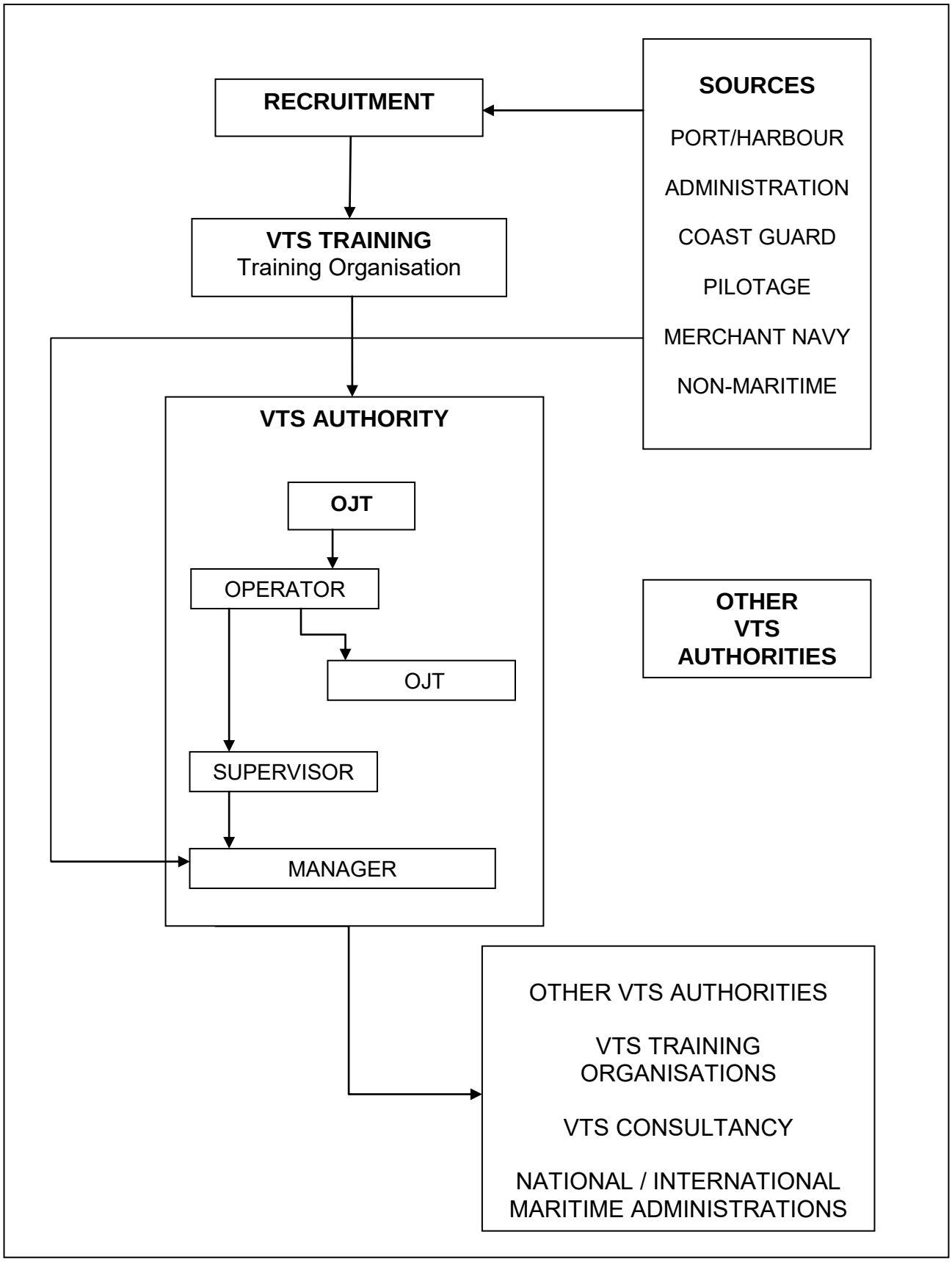

Figure 1 Career Progression

4 SELECTION AND RECRUITMENT

4.1 Entry Requirements

Successful recruitment of VTS Operators is important in order to maintain the quality and capacity of Vessel Traffic Services. To ensure the quality of the trainees it is crucial to use appropriate entry requirements and follow a thorough selection process.

The Competent/VTS Authority should set minimum entry requirements for applicants to become a VTS Operator.

When setting the entry requirements the following points should be considered;

- prior skills and knowledge;
- previous maritime experience and education;
- personal suitability characteristics; and
- medical fitness requirements.

If applicable, the Competent Authority may consider setting requirements for the VTS Authority to:

- verify that the applicant meets the entry requirements;
- assess the applicants personal aptitude and suitability; and
- establish a selection process in order to choose the most qualified applicant.

English is the accepted language of international business, trade and diplomacy. Subsequently there is a very high demand for education in the language as well as a high demand for other academic qualifications taught in English. This has led to the establishment of reliable tests to demonstrate that trainees have attained a sufficient level of the language to follow their chosen course or profession.

Candidates should also be fluent in the use of their own native language where their language is primarily used for communications (for example in inland waterways).

4.2 Selection Process

The selection process should include aptitude testing, assessment of prior learning, medical/physical requirements and an assessment of the personal attributes of the candidate.

The purpose of the selection process is to provide a mechanism to facilitate selection of applicants for trainee operators. An important part of this is to test and assess the suitability of the applicants to perform the required VTS tasks. The selection process should be established and performed by the VTS Authority in accordance with the requirements set by the Competent Authority.

Personnel may be recruited directly as VTS Supervisors if they can demonstrate to the VTS Authority that they have the required experience to undertake the responsibilities and duties of a VTS Supervisor. The VTS Authority should ensure that such personnel have received VTS Operator training and any additional training as may be necessary to meet the required standards of competence for a VTS Supervisor.

4.2.1 Aptitude Assessment

Aptitude assessments should be carried out as part of the selection process. All prospective candidates should be assessed, even if they have previous maritime experience. Assessments, which employ simulation of traffic movements, may be used.

Assessments should be designed to determine the ability of candidates to:

- Discriminate between relevant and non-relevant information;
- Combine auditory and visual information;

- Demonstrate spatial and situational awareness;
- Demonstrate alertness and decisiveness in all situations;
- Carry out several tasks simultaneously;
- Carry out routine work without losing situational awareness;
- Show initiative while working within a framework of standards, regulations and structured procedures;
- Recognise and manage work related and personal stress; and
- Demonstrate appropriate communication and literacy skills.

Tests which employ simulation of traffic movements are recommended for this assessment.

An example of how aptitude testing might be arranged is given in APPENDIX 4.

4.3 Assessment of Prior Learning (APL)

Depending on the recruitment level and background of candidates, some elements of the Model Course could be addressed through an Assessment of Prior Learning (APL) and experience, reflecting both the formal training and experience of the candidate. Any such module exemption should be approved by the respective Competent Authorities.

A variety of assessment methods are available for use by a Competent Authority, VTS Authority or Training Organisation to provide an accurate measure of the prior learning of the candidate. It is probable that a combination of methods may need to be used to ensure that all aspects of prior learning are taken into account.

When the assessment of prior learning indicates that the candidate has the competence required for a particular subject, no training on the subject need be given. However, when the assessment indicates that the required competence level is not being met appropriate training should be given to ensure that the competence level is met.

4.4 Medical/Physical Requirements

Candidates should meet the medical, including optical, standards of health established by the Competent Authority.

4.5 Personal Attributes

Personal attributes are important factors in the selection criteria. A continual assessment should be made of the candidates' suitability throughout the selection process. Candidates should at a minimum have an appropriate sense of responsibility, ability to adopt and follow procedures, as well as having a willingness to co-operate with others as part of a team.

5 QUALIFICATION AND CERTIFICATION

5.1 Qualification

Qualification is the education, knowledge, skill, experience or any other attribute which the Competent and/or VTS Authority may have determined desirable for performing the duties of the relevant position.

VTS Operator qualifications should primarily be based on the principle that satisfactory results are obtained during both the VTS Operator Course (V-103/1) and On-the-Job Training (V-103/3).

The following steps are recommended for attaining qualification:

1 The candidate VTSO has been selected and the set requirements as regard to prerequisites and medical/physical requirements are fulfilled.

2 On successful completion of an accredited course of training the VTSO trainee should receive a course certificate.

3 The course certificate should then be submitted to the appropriate authority who, after validation, should issue a VTS Certification Log book.

4 The VTSO trainee will then carry out OJT at a specific VTS centre, under the supervision of an OJT Instructor.

5 On successful completion of OJT the appropriate authority should issue a certificate enabling the trainee to operate as a qualified VTSO.

6 Any additional successful completion of accredited courses of VTS training, such as Supervisor and/or refresher training, should also be entered into the VTS Certification Log book.

5.1.1 Validity

A VTS qualification should be valid until either:

- an assessment indicates that the holder has fallen below the standards, including medical requirements, set by the Competent Authority for operator qualifications; or
- there is a break in carrying out the duties, for whatever reason, for a period defined by the Competent Authority.

5.2 Certification

5.2.1 VTS Operator Course Certificate

A VTS Operator Course Certificate should be awarded by the training organisation, which provides the accredited VTS training, to trainees on completion of their VTSO training. The course certificate should include:

- the candidate's full name;
- the country in which it was awarded;
- signature of the issuing Authority and the training organisation;
- the relevant course;
- the date of award; and,
- the serial number of the course certificate.

The course certificate should be in a format similar to the example given in APPENDIX 5.

5.2.2 VTS Certification Log

A VTS Certification Log should be issued by the Competent/VTS Authority after validation of the course certificate. This log should be in the format of a Log Book or in another appropriate format set by the Competent Authority. The log should include:

- The name of the trainee ;
- Brief details of the VTS Operator course certificate, including its number;

The log should be used to record:

- The type of service (i.e. Information Service, Navigational Assistance Service or Traffic Organisation Service) which the holder is authorised to provide;
- Regular assessment records and the result thereof;
- Any break in service defined by the Competent/VTS Authority;
- On-the-Job training at each VTS at which the holder is employed as a VTS Operator or Supervisor including the name of each VTS Centre at which On-the-Job Training has been completed, the name and signature of the OJT Instructor and the date the training was completed;
- Revalidation records including the name of the organisation at which the Certificate was revalidated, the signature of the person responsible for the revalidation and the date of revalidation;

- Additional VTS training courses (Supervisor, On-the-Job Training Instructor) successfully completed including the name of the organisation where the additional VTS training courses was undertaken, the signature of the person responsible for the training and the date the training was completed; and
- Any relevant course, or training, successfully completed including the name of the organisation at which Supervisor training has been completed, the name and signature of the person responsible for the training and the date of completion.

VTS Operator Course Certificates and Certification Logs should be in the official language or languages of the awarding country. If the language used is not English, the text should include a translation into that language.

5.3 Maintaining Certification

In order to maintain certification of VTS operational personnel, the VTS Authority should ensure that all operational personnel, under their jurisdiction, undergo an assessment at regular intervals. This could be in the form of a continual assessment at the VTS centre or at a training organisation.

If VTS operational personnel fail an assessment or have had a break in service, for whatever reason and for a period as determined by the Competent/VTS Authority, the operator concerned may be required to undergo refresher training, or certificate revalidation as deemed appropriate by the Competent Authority.

5.3.1 Regular Assessment

An assessment of the performance of each VTS Operator should be carried out by a VTS Supervisor/Manager at regular intervals, preferably annually, to ensure that the standards set by the Competent Authority for operator qualifications are continuing to be met.

In the absence of a VTS Supervisor, the assessment should be carried out by a person designated by the Competent/VTS Authority.

5.3.2 Refresher training

Refresher (or updating training) may be required by the Competent and/or VTS Authority in order to ensure that the level of competence, appropriate to the service type(s) provided is maintained. This may be deemed necessary when, for example, there has been a break in service, new equipment has been installed or new operating procedures have been introduced.

Refresher training may follow an assessment and/or may be given periodically according to the requirements of the Competent and/or VTS Authority or when deemed necessary by the VTS Authority.

Refresher training may be carried out by the VTS Authority or by means of a formalised course, approved by the Competent Authority.

5.3.3 Revalidation

Revalidation is required if either of the conditions described in section 5.1.1 (Validity) occur. The revalidation should ensure the holder of a VTS Operator qualification continues to maintain professional competence by one of the following methods:

- An evaluation by an On-the-Job Training Instructor; or,
- Successful completion of refresher training; or,
- A revalidation assessment carried out by the VTS Authority.

5.3.4 Qualifications of Instructors and Assessors

Competent Authorities should ensure that instructors and assessors are appropriately qualified and experienced for the particular training and assessment of competence for which they are given responsibility. Such qualifications and experience should be incorporated in the quality standards. Appropriate training in teaching techniques, training and assessment methods and possibly practices should be offered the instructors and assessors at a regular basis.

5.3.5 Instructors

Any person conducting VTS training should:

- have a detailed understanding of the training programme and of the specific training objectives for the particular type of training being conducted;
- be appropriately qualified in the task for which training is being conducted;
- have an appropriate balance of professional and teaching qualifications;
- if conducting training with the use of a simulator:
  - have received appropriate guidance in instructional techniques involving the use of simulators; and,
  - have gained practical and operational experience on the particular simulator being used.

5.3.6 Assessors

Any person conducting assessment of competence of VTS personnel during training should:

- have an appropriate level of knowledge and understanding of the competence to be assessed;
- be qualified in the task for which the assessment is being made;
- have received appropriate guidance in assessment methods and practices;
- have gained practical assessment experience; and
- if conducting assessment involving the use of simulators, have gained practical instruction on the particular type of simulator under the supervision, to the satisfaction of an experienced assessor.

6 TRAINING

6.1 Introduction

The type of training depends largely on the knowledge base of the trainee concerned.

To deliver a training course effectively, consideration should be given to the availability and the use of:

- Qualified instructors;
- Support staff;
- Classrooms and other spaces;
- Equipment, including simulators;
- Textbooks, technical papers;
- Other reference material.

Thorough preparation is the key to successful implementation of a training course.

All stages of VTS training should include continuous assessment. A task book (training log) should be used to show progress being made by VTS personnel in their particular training. The log would show the number of hours allocated and/or time in which each task was completed. Training times should be dependent on the experience of trainees. Training to work as a member of a team should normally be part of the syllabus.

All training and assessment of VTS Personnel should be:

- structured in accordance with written programmes, including such methods and media of delivery, procedures, and course material as are necessary to achieve the prescribed standard of competence; and
- conducted, monitored, evaluated and supported by persons qualified in accordance with section 5.4 Qualifications of Instructors and Assessors.

All training courses should be based on the Model Courses associated with this Recommendation. They should also be accredited by the Competent Authority concerned. VTSO training should be carried out at a Training Organisation, which provides accredited VTS training.

Competent Authorities should ensure that the aims and objectives of training are defined within an overall training programme. Specific training objectives and tasks should be selected so as to relate as closely as possible to VTS tasks and practices.

6.2 Model Courses

The model courses associated with this Recommendation are composed of modules. This approach facilitates model courses to be developed and:

- reflects the training received, while maintaining common international standards; and
- takes into account the previous training and experience of prospective VTS personnel.

6.2.1 VTS Operator Model Course V-103/1

The award of a VTS Operator Certificate and endorsement to act as a VTS Operator should be achieved by successfully undertaking the following modules:

1 Language

2 Traffic Management

3 Equipment

4 Nautical knowledge

5 Communication co-ordination

6 VHF-radio

7 Personal attributes

8 Emergency situations

6.2.2 VTS Supervisor Model Course V-103/2

The award of an endorsement in the VTS Certification Log as a VTS Supervisor should be obtained by a VTS Operator successfully undertaking the following modules:

1 Advanced Traffic Management

2 VTS equipment

3 Additional personal attributes

4 Responding to emergency situations

5 Administrative functions

6 Legal knowledge

Following successful completion of V-103/2 the endorsement should be documented and recorded in the VTS Certification Log.

6.2.3 On-the-Job Training (OJT) Model Course V-103/3

Every certificated VTS Operator should receive On-the-Job Training from a qualified On-the-Job Training Instructor before being authorised to carry out the duties of a VTS Operator.

On-the-Job Training should follow an approved programme of training with specific learning objectives, which:

- provides knowledge of the local or regional nautical topography, hydrographic and meteorological characteristics and legislation and regulations relating to the responsibilities and activities of the VTS Centre;

- provides detailed knowledge of the services provided by the VTS Centre and ensures that during the required period of training the VTS Operator receives systematic practical training and experience in the tasks, duties and responsibilities of a VTS Operator at the VTS Centre concerned;
- is closely supervised and monitored by a qualified On-the-Job Instructor at the VTS Centre; and
- is adequately documented and recorded in the VTS Certification Log.

The Competent Authority should define the duration of the on-the-job training period and the detailed training syllabus, taking into account the requirements of the particular VTS Centre.

6.2.4 On-the-Job Training Instructor Model Course V-103/4

The award of an endorsement in the VTS Certification Log as On-the-Job Training Instructor should be obtained by successfully undertaking the following modules:

1 Development of a VTS centre specific training programme.

2 Preparation of a trainee specific programme.

3 Delivery of OJT training.

4 Evaluation/assessment/examination of trainees.

5 Completion of OJT training leading to authorisation to operate.

Following successful completion of V-103/4 the endorsement should be documented and recorded in the VTS Certification Log.

APPENDIX 1 VTS OPERATOR JOB DESCRIPTION

1 INTRODUCTION

The job description set out in this annex is intended to provide a broad guide to the tasks expected to be undertaken by a VTS Operator. VTS Authorities should develop detailed job descriptions for VTS Operators at each VTS centre, based on the services to be provided by the particular centre, the equipment available and the coordination which takes place with Allied Services.

2 JOB PURPOSE

The purpose of the position of a VTS Operator is to deliver Vessel Traffic Services (VTS) in order to ensure the safe and efficient movement of vessels within the area of jurisdiction.

3 ACTIVITIES AND TASKS

- Interact with ships to deliver the VTS services defined by the Competent/VTS authority.
- Operate equipment for communications, data collection, data analysis and establishment of a traffic image.
- In an Information Service (INS) transmit information at appropriate times, at the request of a vessel or when deemed necessary by the VTS, for example a sudden deterioration of weather conditions.
- In a Navigational Assistance Service (NAS) transmit such information as may be needed to aid a ship in difficult navigational or meteorological circumstances or in case of defects or deficiencies The assistance to be given on request by a ship or when deemed necessary by the VTS.
- In a Traffic Organisation Service (TOS), organise the vessel traffic within a waterway by means of waterway information, traffic monitoring and traffic regulations using, as necessary, nautical knowledge of the area concerned, the traffic image and a suitable marine information management system.
- Respond to emergency situations such as distress, marine pollution and other special circumstances defined for the VTS area. Where arranged, co-ordinate communications with ships, allied services and other agencies.

4 KNOWLEDGE, SKILLS AND EXPERIENCE

VTS Personnel undertaking these activities and tasks should hold a current VTS Operator Certificate and an endorsement in the VTS Certification Log for On-the-Job Training at the VTS Centre at which the Operator is employed.

APPENDIX 2 VTS SUPERVISOR JOB DESCRIPTION

1 INTRODUCTION

The job description set out in this annex is intended to provide a broad guide to the tasks expected to be undertaken by a VTS Supervisor. VTS Authorities should develop detailed job descriptions for VTS Supervisor at each VTS centre where they are employed. The detailed job descriptions should be based on the services to be provided by the particular centre, the equipment available and the coordination which takes place with allied services.

2 JOB PURPOSE

The purpose of the position of a VTS Supervisor is to:

- supervise the activities undertaken at the VTS with regard to the types of service provided;
- supervise a team, that has the responsibility for conducting a Vessel Traffic Service, to the satisfaction of the Competent/VTS Authority as well as vessels and other users;
- ensure that the standards set by the Competent Authority for operator qualifications continue to be met; and
- ensure that co-ordination takes place between the VTS, allied services and other port facilities and services.

3 ACTIVITIES AND TASKS

In addition to the activities and tasks appropriate to a VTS Operator:

- Ensure that the service provided meets the requirements of both the users and the VTS Authority;
- Coordinating the interface between the VTS, allied services and other port facilities and services;
- Supervision of VTS Operators;
- Ensure the efficient running of the VTS operations room;
- Carry out assessments of VTS Operators;
- In conjunction with On-the-Job Training Instructors, carrying out revalidation assessments on VTS Operators.

4 KNOWLEDGE, SKILLS AND EXPERIENCE

VTS Personnel undertaking these activities and tasks should hold a current VTS Operator Certificate and the appropriate endorsements in the VTS Certification Log for VTS Supervisor and for On-the-Job training at the VTS Centre at which the Supervisor is employed.

Unless recruited directly, VTS Supervisors should preferably have appropriate experience as a VTS Operator as required by the Competent/VTS Authority.

APPENDIX 3 VTS MANAGER JOB DESCRIPTION

1 INTRODUCTION

The Job Description for the Manager may include some, or all, of the purposes, activities and tasks set out below. VTS Authorities should ensure that Managers of VTS Centres receive adequate training in all aspects of VTS appropriate to their responsibilities and introduce arrangements which ensure that the necessary level of competence in VTS is maintained.

2 JOB PURPOSE

The purpose of the position of a VTS Manager is to

- lead and manage the operation and delivery of Vessel Traffic Service (VTS);
- ensure that the VTS has adequate resources to undertake properly the responsibilities defined by the VTS Authority.

3 ACTIVITIES AND TASKS

The job description for the VTS Manager may include the following responsibilities:

- Ensuring that the aims and objectives of the VTS are met at all times;
- Ensuring that all VTS operations follow current rules, regulations and legislation;
- Managing and co-ordinating financial, technical and human resources;
- Ensuring that the standards set by the Competent/VTS Authority for operator qualifications and training are met;
- Ensuring that the training and certification of VTS personnel are appropriate to the service types being provided;
- Ensuring VTS quality standards are maintained;
- Maintaining awareness of continuing development for the VTS centre(s);
- Planning and developing of emergency procedures as appropriate to the VTS area of responsibility;
- Ensuring that all adopted standard operating procedures are reviewed and amended as required;
- Developing and maintaining a good public information and relations programme; and
- Ensuring compliance with evidentiary provisions in the event of an incident or accident occurring in the VTS area. The Manager should also ensure that all such events are properly recorded and readily available for examination by the Competent/VTS Authority.

4 KNOWLEDGE, SKILLS AND EXPERIENCE

The VTS Manager should have a demonstrated knowledge of the delivery of Vessel Traffic Services. Ideally, the VTS Manager should possess a VTS Operator/Supervisor qualification.

The VTS Manager should also have a demonstrated high level ability to effectively lead and manage the operation and the delivery of service as well as to initiate, lead and implement change and continuous improvements.

Management experience and leadership skills are also considered to be important.

APPENDIX 4 APTITUDE TESTING

The Competent Authority should consider appropriate personal aptitude and suitability requirements for each applicant. To assess the applicant's aptitude and suitability, different types of tests and evaluations may be used. This could include, but not be limited to;

- Interviews;
- written tests;
- practical tests; and
- psychometric tests.

A test of the applicant regarding aptitude and suitability may include, but not be limited to, the following abilities:

- situational awareness;
- spatial conceptual ability:
  - assessment of the relative movement to fixed and moving objects.
- communications skills (written and oral):
  - effective participation as a member of a team;
  - vocabulary and verbal expression capacity.
- numerical aptitude;
- simultaneous tasking capability [multi-tasking] :
  - ability to receive multiple inputs;
  - ability to prioritise and decide what situations require immediate action.
- judgement and responsibility;
- ability to take initiatives and make decisions;
- ability to function under conditions of stress;
- ability to work and co-operate with others as part of a team.

APPENDIX 5 EXAMPLE OF A VTS OPERATOR COURSE CERTIFICATE

Figure 2 Example VTS Operator Course Certificate

Notes

1 The IALA logo may only be used by a training organisation whose VTS training has been accredited.

International Association of Marine Aids to Navigation and Lighthouse Authorities

IALA

Association Internationale de Signalisation Maritime

AISM

IALA Model Course V-103/1

On

Vessel Traffic Services Operator Training

Edition 2
December 2009

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Edition 1 / March 1988

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Document Revisions

Revisions to the IALA Document are to be noted in the table prior to the issue of a revised document.

Date	Page / Section Revised	Requirement for Revision
December 2009	Entire document	Reflecting 10 years experience and the evolution of technology

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Foreword

The International Association of Marine Aids to Navigation and Lighthouse Authorities has been associated with Vessel Traffic Services since 1955 and recognises the importance of human resources to the development of efficient Vessel Traffic Services worldwide.

Taking into account the International Convention on Standards of Training, Certification and Watchkeeping of Seafarers, 1978, as amended in 1995 (STCW Convention), the Seafarer's Training, Certification and Watchkeeping Code (STCW Code) and STCW 95 Resolution 10, IALA has adopted Recommendation V-103 on Standards of Training and Certification of VTS personnel.

The model training courses developed, or being developed, by IALA for VTS personnel are:

- Model Course V-103/1 - VTS Operator Training
- Model Course V-103/2 - VTS Supervisor Training
- Model Course V-103/3 - VTS On-the-Job Training
- Model Course V-103/4 - VTS On-the-Job Training Instructor

These model courses are intended to provide national members and other appropriate authorities charged with the provision of vessel traffic services with specific guidance on the training of VTS Operators and VTS Supervisors. They may be used by maritime training organisations, and assistance in implementing any course may be obtained through IALA at the following address:

The Secretary General,
IALA,
20 ter rue Schnapper,
78100 Saint Germain en Laye
France

Tel: +33 34 51 70 01
Fax +33 34 51 82 05
e-mail: iala-aism@wanadoo.fr
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PART A - COURSE OVERVIEW

1 COURSE OVERVIEW

IALA recommends that training providers utilise accredited training courses as per IALA Guideline1014 on the Accreditation of VTS Training Courses.

2 PURPOSE OF THE MODEL COURSE

The purpose of the model course is to assist maritime training organisations and their teaching staff in the preparation and introduction of new training courses for VTS Operators, or in enhancing, updating or supplementing existing training material where the quality and effectiveness of the training courses may thereby be improved.

This course provides details of the subject areas for knowledge and practical competence required for a VTS trainee to gain a course certificate as part of the qualification for becoming a VTS Operator.

3 USE OF THE MODEL COURSE

The complete course comprises eight modules, each of which deals with a specific subject representing a requirement or function of a VTS Operator. Each module contains a subject framework stating its scope and aims, a subject outline and a detailed teaching syllabus.

The course also provides participants with the opportunity to exercise the role of a VTS Operator. These exercises should, wherever practicable, use simulation. Where simulation is not practicable, the exercises should be designed to be fully representative of appropriate situations that occur in a VTS.

PART B - DELIVERY OF THE MODEL COURSE

1 INTRODUCTION

All training and assessment of personnel for gaining the course certificate as part of the qualification towards becoming a VTS Operator should be:

1 Structured in accordance with written programmes, including such methods and means of delivery, procedures and course material as are necessary to achieve the prescribed standard of competence; and,

2 Conducted, monitored, assessed and supported by persons qualified in accordance with Part C, section 4 Training Staff Requirements.

Training staff should review the course outline and detailed syllabus in each subject. The actual level of knowledge, skills and prior technical education of the participants in the subject concerned should be kept in mind during this review. Any differences between the level of skills and competencies of the participant and those identified within the detailed training syllabus should be identified. To compensate for such differences, the instructor is expected to delete from the course, or reduce the emphasis on, items dealing with knowledge or skills already attained by the participants. The instructor should also identify any academic knowledge, skills or technical training that the participants may not have acquired.

By analysing the detailed syllabus and the academic knowledge required to allow training in the technical area to proceed, the instructor can design an appropriate pre-entry course in the subjects in which weakness is evident. Alternatively, the elements of academic knowledge required to support the technical training elements concerned may be inserted at appropriate points within the syllabus.

Adjustment of the module objectives, scope and content for each subject may also be necessary if the participants completing the course are to undertake duties which differ from the objectives specified.

2 COURSE MODULES

The modular presentation enables the instructor to adjust the course content to suit the participant intake and provide any revisions of the subject objectives as required. The instructor should draw up lesson plans based on each detailed syllabus and the references in them to the textbooks and teaching material suggested for the course. Where no adjustment has been found necessary in the subjects of a detailed syllabus, the lesson plans may simply consist of the detailed syllabus with keywords or other reminders added to assist the instructor in making his presentation of the material.

To assist in the development of lesson plans, five levels of competence are used in the model courses for VTS personnel. Levels 1 to 4 are used in the model course for the training of VTS Operators and levels 3 to 5 are used in the model course for VTS Supervisor. See table 1 in Part D, section 3 – Lesson Plans.

Each level of competence is defined in terms of the learning outcome, the instructional objectives and the required skills. The recommended level of competence for each subject is indicated in the Subject Outline of each module.

3 SUBJECT OUTLINE

The subject outline of each module also includes a total recommended number of hours that should be allotted to each module. However, it should be appreciated that these allocations are arbitrary and assume that the participants have met fully all of the entry requirements specified for each subject. The instructor should therefore review carefully lesson plan design and consider the need to reallocate the time required to achieve each specific learning objective. In addition, the

opportunity to reduce formal training time through recognition of Accredited Prior Learning (APL) should be taken advantage of whenever documented evidence of prior learning or professional certification can be produced by the course participants.

4 DETAILED TEACHING SYLLABUS

The detailed teaching syllabus, of each module has been written in learning-objective format in which the objective describes what the participant must do to demonstrate that knowledge has been transferred. All objectives are understood to be prefixed by the words:

> *the expected learning outcome is that the participant has acquired the recommended levels of competence in …….*

In preparing a teaching scheme and lesson plans, the instructor is free to use any teaching method or combination of methods that will ensure participants can meet the stated objectives. However, it is essential that participants complete the subject matter set-out in each module.

5 PRESENTATION

The presentation of concepts and methodologies may be repeated as necessary in various ways until the instructor is satisfied that the participant has attained a good working knowledge in each subject.

6 EVALUATION OR ASSESSMENT OF THE COURSE PARTICIPANTS

The evaluation criteria are contained in column 4 of the VTS Operator competence chart (see Annex 1), and provide the means for an assessor to judge whether a participant is competent to perform the related tasks, duties and responsibilities.

7 IMPLEMENTATION

For the course to run smoothly and effectively, considerable attention must be paid to the availability and use of:

- qualified instructors
- support staff
- rooms and other spaces
- equipment
- textbooks, technical papers
- other reference material.

Thorough preparation is key to successful implementation of the course.

8 VALIDATION

The information contained in this document has been validated by a group of technical advisers, consultants and experts on training of VTS personnel. These were drawn from the IALA VTS Committee, training organisations of IALA national members and experienced VTS personnel so that the standards implemented may be as uniform as possible. Validation in the context of this document means that the group has found no grounds to object to its contents.

PART C - COURSE FRAMEWORK

1 INTRODUCTION

The model course covers the requirements of the IALA Recommendation V-103. On successful completion of the course and assessments, the participants should have been provided with sufficient training and to proceed to the next stage of On-the-Job Training (OJT) at a VTS centre.

2 REQUIREMENTS FOR ATTAINING THE COURSE CERTIFICATE

Every candidate for a VTS Operator course certificate should:

- have achieved the International English Language Testing System (IELTS) level 5, or its equivalent;
- satisfy the competent/VTS authority by passing the appropriate assessments for the accredited course of operator training and that they possess the theoretical and practical knowledge appropriate to the requirements of a VTS Operator.

3 COURSE INTAKE LIMITATIONS

Class sizes may be limited at the discretion of the Competent Authority in order to allow the instructor to give adequate attention to individual participants. In general it is recommended that a maximum of 12-14 students be the upper limit that a single instructor can be expected to train satisfactorily to the level of competence involved. Larger numbers may be admitted if extra staff and tutorial periods are provided to deal with participants on an individual basis.

During practical sessions and group activities there may be additional restraints on class size. In particular, where the use of a simulator or similar teaching aid is involved, it is recommended that no more than two students be trained simultaneously on any individual piece of equipment.

4 TRAINING STAFF REQUIREMENTS

All instructors and assessors should be appropriately qualified for the particular types and levels of training or assessment required for the model course.

The accredited training programme for VTS Operators should ensure that the qualifications and experiences of instructors and assessors are covered in the application of appropriate quality training standards. Such qualifications, experience and application of quality standards should incorporate appropriate training in instructional techniques, and training and assessment methods and practices, and comply with all applicable recommendations set out in the following paragraphs.

As well as instructors and assessors, additional staff may be required for the maintenance of equipment and for the preparations of materials, work areas and supplies for the practical work.

4.1 Instructors

Any person conducting training of personnel qualifying for certification as VTS Operators should:

- have an appreciation of the training programme and an understanding of the specific training objectives for the particular type of training being conducted;
- be professionally and academically qualified in the task for which training is being conducted;
- have an appropriate balance of professional and teaching qualifications;
- if conducting training with the use of a simulator:
  - have received appropriate guidance in instructional techniques involving the use of simulators; and,

- have gained practical operational experience on the particular simulator being used.

Any person responsible for the supervision of training personnel should have a full understanding of the training programme and the specific objectives for each element of training being conducted.

4.2 Assessors

Any person conducting assessment of competence of personnel should:

- have an appropriate level of knowledge and understanding of the competence to be assessed;
- be qualified in the task for which the assessment is being made;
- have received appropriate guidance in assessment methods and practices;
- have gained practical assessment experience;
- if conducting assessment involving the use of simulators, have gained practical assessment experience on the particular type of simulator under the supervision, and to the satisfaction, of an experienced assessor.

5 TEACHING FACILITIES AND EQUIPMENT

Facilities other than an ordinary classroom fitted with a chalkboard or whiteboard, an overhead projector or computer-assisted projector and screen are given in the individual subject frameworks.

In order to assist instructors, references are shown against the subjects in the modules to indicate references and publications, additional technical material and teaching aids that the instructor may wish to use when preparing and presenting the course (see ANNEX 2). The material listed in the subject frameworks has been used to structure the detailed teaching syllabuses; in particular:

1 Teaching aids (indicated by A);

2 Equipment needed by participants (indicated by E)

3 References (indicated by R).

Part D - GUIDELINES FOR INSTRUCTORS

1 INTRODUCTION

VTS Operators are appropriately qualified persons performing one or more tasks contributing to the services of a VTS centre. It is essential that education and training be aimed at minimising incidents due to mistakes or errors of judgement. This model course is designed to meet the requirements for trainee VTS Operators to obtain a course certificate leading to On-the-Job Training.

It is important to keep in mind the close relationship of all subjects in the VTS Operators course. In particular, instructors should continuously monitor the additional personal attributes of participants and, when appropriate, draw their attention to the need to meet the subjects of that module.

In Vessel Traffic Services new techniques and equipment are developed very quickly. This makes it necessary for instructors to keep up to date in new techniques and in national and international rules and regulations. Instructors should also be encouraged to teach relevant new developments and techniques not mentioned in this syllabus.

2 CURRICULUM

The subject modules into which the course is divided reflect the competence headings of the VTS Operator competence chart (see ANNEX 1). The syllabuses are presented this way to show clearly the relationship of the syllabus with the recommendations of the IALA.

The subjects shown in the detailed syllabus are not listed in order of priority. Instructors should treat them in the order, which they consider to be the most effective for their course participants and circumstances.

Great care should be taken when using the levels of competence in Table 1. They have been phrased in a precise form to indicate exactly what the participant should be capable of doing. This then becomes the means of demonstrating that the intended level of knowledge or skill has been attained.

The recommended hours given in the syllabi are intended to be used as approximate guidelines for planning purposes. The hours should be adjusted as necessary to suit local circumstances in the light of experience with previous courses. If possible the course should be implemented with some flexibility to allow for adjustments during its running. It is normal for different participants to require different lengths of time to cover the same work. For practical reasons some minor adjustments will probably be needed when drawing up the timetable to fit the work to be covered into fixed teaching periods and term times.

The success of the course will depend, to a large extent, upon detailed co-ordination of the individual subjects into a coherent teaching scheme. It is important that an experienced instructor acts as course co-ordinator to plan and supervise the implementation of the course.

Using the time estimates, modified as appropriate, a timetable should be drawn up to suit the normal working day and terms of the training organisation. Teaching schemes should be prepared by the teaching staff outlining the subject areas to be covered week by week. All members of the teaching team should have a copy of the proposed schemes so that they are aware of what is being done in subjects other than their own.

The teaching schemes should be scrutinised carefully to ensure that all of the listed subjects are covered, that repetition is avoided and that essential pre-requisite knowledge at any stage has already been covered. Only those additional requirements set by the Competent Authority should be introduced.

The course co-ordinator should monitor the running of the course. There should be regular discussions with the teaching staff involved concerning the progress of participants and any problems that have become apparent. Modifications of the teaching scheme should be made where necessary to ensure that participants are attaining the objectives laid down. If necessary, extra tuition should be arranged to enable weaker students to reach the required standard. At the conclusion of the course a discussion should be held to determine whether changes should be made to improve future courses.

Procedures should be in place to follow the On-the-Job Training (OJT) of students, using comments from both participants and OJT Instructors to help ensure relevancy and validity of future courses. The transition from advanced training to OJT should appear as continuous as possible.

3 LESSON PLANS

The modular presentation enables the instructor to adjust the course content and provide any revisions of the subject objectives as required. The instructor should draw up lesson plans based on each detailed syllabus and the references in them to the textbooks and teaching material suggested for the course. Where no adjustment has been found necessary in the learning objectives of a detailed syllabus, the lesson plans may simply consist of the detailed syllabus with keywords or other reminders added to assist the instructor in making his presentation of the material.

To assist in the development of lesson plans five levels of competence are used in the model courses for VTS personnel. Levels 1 to 4 are used in the model course for the training of VTS Operators and levels 3 to 5 are used in the model course for advancement to VTS Supervisor.

Each level of competence is defined in terms of the learning outcome, the instructional objectives and the required skills. The recommended level of competence for each subject is indicated in section 3, Subject Outline, of each module.

Section 3, Subject Outline, of each module also includes a recommended assessment of the time that should be allotted to each subject. However, it should be appreciated that these allocations are arbitrary and assume that the trainees have met fully all of the entry requirements specified for each subject. The instructor should therefore review carefully these assessments during course and lesson plan design and consider the need to reallocate the time required to achieve each specific learning objective.

Section 4, Detailed Teaching Syllabus, of each module has been written in learning-objective format in which the objective describes what the trainee must do to demonstrate that knowledge has been transferred. All objectives are understood to be prefixed by the words:

> *the expected learning outcome is that the trainee has acquired the recommended levels of competence in …….*

In preparing a teaching scheme and lesson plans, the instructor is free to use any teaching method or combination of methods that will ensure trainees can meet the stated objectives. However, it is essential that trainees attain all objectives set out in each syllabus.

Table 1 Levels of Competence

Level	Knowledge and/or Attitude	Skill
Level 1 Work of a routine and predictable nature generally requiring supervision	**Comprehension** Understands facts and principles; interprets verbal/written material; interprets charts, graphs and illustrations; estimates future consequences implied in data; justifies methods and procedures	**Guided response** The early stages in learning a complex skill and includes imitation by repeating a demonstrated action using a multi-response approach (trial and error method) to identify an appropriate response
Level 2 More demanding range of work involving greater individual responsibility. Some complex/non-routine activities	**Application** Applies concepts and principles to new situations; applies laws and theories to practical situations; demonstrates correct usage of methods or procedures	**Autonomous response** The learned responses have become habitual and the movement is performed with confidence and proficiency
Level 3 Skilled work involving a broad range of work activities. Mostly complex and non-routine	**Analysis** Recognises un-stated assumptions; recognises logical inconsistencies in reasoning; distinguishes between facts and inferences; evaluates the relevancy of data; analyses the organisational structure of work	**Complex observable response** The skilful performance of acts that involve complex movement patterns. Proficiency is demonstrated by quick, smooth, accurate performance. The accomplishment of acts at this level includes a highly co-ordinated automatic performance
Level 4 Work that is often complex, technical and professional with a substantial degree of personal responsibility and autonomy	**Synthesis** Integrates learning from different areas into a plan for solving a problem; formulates a new scheme for classifying objects or events	**Adaptation** Skills are so well developed that individuals can adapt rapidly to special requirements or problem situations
Level 5 Complex techniques across wide and often unpredicted variety of contexts. Professional/senior managerial work	**Evaluation** Judges the adequacy with which conclusions are supported by data; judges the value of a work by use of internal criteria; judges the value of a work by use of external standards of excellence	**Creation** The creation of new practices or procedures to fit a particular situation or specific problem and emphasizes creativity based upon highly developed skills

4 EVALUATION OR ASSESSMENT

Continual assessment of participants should be undertaken. In many cases the assessment can be based on the marks given to participants' course work, providing a proper record of it is kept. That can be supplemented by occasional short test papers. These assessments are additional to any examination required for the purposes of certification.

Assessments should use the following five levels to indicate the progressive learning attained by participants. It is recommended that, for the VTS Operator, an average level of one to four should be considered as being satisfactory.

Table 2 Assessment levels

LEVEL	DESCRIPTION
LEVEL 1	The participant demonstrates a willingness to learn.
LEVEL 2	The participant demonstrates active participation in the learning process.
LEVEL 3	The training positively influences the participant's behaviour and attitude, and there is a measurable increase in knowledge and skills.
LEVEL 4	The participant demonstrates the ability to adapt existing knowledge, skills and attitude when dealing with new and unplanned situations.
LEVEL 5	The participant demonstrates a permanent positive change in knowledge, skills and attitude and is ready to positively influence others. The participant may exhibit some positive changes in co-related behaviours.

The form and timing of examinations for endorsement as a VTS Operator is a matter for the Competent Authority concerned.

An adequate period of time should be allowed at the end of the course for revision and review of the course content. That period and the time occupied by any examinations would be additional to the times shown in the syllabuses.

The Competent Authority may recognize documented evidence including assessments completed for the attainment of related certificates as equivalencies for parts or all of specific VTS modules.

5 PRACTICAL TRAINING

In addition to subject modules; the following are recommended simulated exercises included assessment criteria and recommended duration in hours.

Table 3 Simulation Exercises

Subject	Assessment criteria	Hours
Basic skills Monitoring and identification Communication co-ordination Evaluation and interpretation of the traffic situation Log keeping, recording and reporting	Ability to identify, correctly interpret and handle reports from five simulated vessels.	20
Traffic interaction and conflict resolution Waterway management in multi-ship scenarios Anticipation and projection of traffic patterns Critical areas Vessels overtaking and approaching each other VTS sailing/route plans, including those for deep draught vessels	Ability to identify, correctly interpret and deal with up to five simulated vessels in complex situations. Ability to prepare VTS sailing or route plans, to monitor their execution and amend them due to unforeseen circumstances.	60
Emergencies and special situations Contingency plans Adverse weather conditions Special vessels and those with restricted manoeuvrability Internal and external emergencies	Ability to identify, correctly interpret data and handle reports from 20 simulated vessels during emergencies and special situations.	20

Part E - COURSE MODULES

The complete course comprises eight modules, each of which deals with a specific subject representing a requirement or function of a VTS Operator, followed by simulated exercises and assessment intended to be representative of events and incidents likely to be experienced in a VTS centre. The recommended duration in hours do not include the time necessary for examinations or tests of proficiency.

Table 4 Recommended Course Hours

Module / Subject	Recommended Duration in Hours		Remarks[2]	
	Presentations/ Lectures	Exercises/ Simulation[1]		
1 – Language[3]	91	75	• Language structure • Specific VTS messages construction	• Standard phrases • Collecting information
2 – Traffic Management	52	54	• Regulatory requirements • Roles and responsibilities • VTS environment	• Principles of waterway and traffic management • Traffic monitoring and organisation
3 – Equipment	39	6	• Telecommunications • Radar, audio, video and other sensors • VHF/Direction finding (VHF/DF) • Tracking systems	• Information management • Equipment performance monitoring • Evolving technologies
4 – Nautical Knowledge	85	38	• Chartwork • Collision regulations • Aids to navigation	• Navigational aids (ship borne) • Shipboard knowledge • Port operations and other allied services
5 – Communication Co-ordination	7	11	• General communication skills • Communications	• Log and record keeping
6 – VHF Radio	15	42	• Radio operator practices and procedures • VHF radio systems and their use in VTS	• Operation of radio equipment • Communication procedures, including SAR
7 – Personal Attributes	6	4	• Interaction with others • Human relation skills	• Responsibility and reliability
8 – Emergency Situations	12	10	• International, national, regional, local regulations • Contingency plans • Prioritise and respond to situations	• Record activities concerning emergencies • Maintain a safe waterway throughout emergency situations • Internal/external emergencies
Total	**307**	**240**		

Notes: 1. In addition to the above mentioned recommended duration in hours, see table 3 Simulation exercises in Part D, section 5 Practical training.

2. The recommended times are, except for Module 1, based on the assumption that trainees have no or little previous knowledge of the subject. The actual time required for each module will vary, depending on previous experience and the entrance level of the trainee.

3. The recommended hours for Module 1 are based on the assumption that trainees have achieved, IELTS level 5, or the equivalent.

MODULE 1 – LANGUAGE

1.1 INTRODUCTION

Instructors for this module should be skilled in the use of English and the IMO Standard Marine Communication Phrases (SMCP).

1.1.1 Background

English is the accepted language of international business, trade and diplomacy. Subsequently there is a very high demand for education in the language as well as a high demand for other academic qualifications taught in English. This has led to the establishment of reliable tests to demonstrate that trainees have attained a sufficient level of the language to follow their chosen course or profession (see Annex 3, Example of English language tests).

1.2 SUBJECT FRAMEWORK

1.1.2 Scope

This syllabus covers the requirement for VTS Operators to have a sufficient knowledge of the English language to be able to use VTS equipment, charts and other nautical publications, understand meteorological and oceanographic information and communicate with ships and allied services for VTS purposes, including the operation of contingency plans.

1.1.3 Aims

On completion of the course trainees will have knowledge of the English language and its composition and structure in respect of maritime terminology and the IMO Standard Marine Communication Phrases to enable them to carry out the duties of a VTS Operator using the English language.

It is emphasized that, by the regular employment of standardized marine vocabulary, VTS Operators will clearly communicate in routine and emergency situations at their VTS centre.

1.3 SUBJECT OUTLINE OF MODULE 1

Table 5 Subject outline - Language

Subject Area	Recommended Competence Level	Recommended Hours[1]	
		Presentations/ Lectures	Exercises/ Simulation
Language structure Message construction in English English for special purposes, redundancy and precision Elimination of ambiguity by choice of words Elimination of ambiguity by special techniques Status of a message	Level 3		
Specific VTS message construction Construction of messages Speech devices to imply higher message status	Level 4		
Standard phrases The advantages, disadvantages and application of standard phrases The IMO SMCP in general The IMO SMCP, part 3, section 6, VTS	Level 2 Level 3		
Collecting information Questioning techniques	Level 2		
		Total 91 hours	Total 75 hours

Notes: 1. The time required for module 1 above will vary with the entrance level of the trainee. The recommended hours are set on the assumption that the trainee has achieved IELTS level 5 or the equivalent.

1.4 DETAILED TEACHING SYLLABUS OF MODULE 1

Table 6 Detailed teaching syllabus – Language

Subjects / Learning Objectives	Reference	Teaching Aid
Have a sufficient knowledge of the English language to be able to use charts and other nautical publications, understand meteorological and oceanographic information and communicate with vessels and allied services for VTS mission purposes.		
Language structure		
Explain the use of English for special purposes, redundancy and precision The exclusion of all items, except those directly applicable to the subject Legal and engineering terminology and their different structures Advantages and disadvantages of redundancy The choice of precise words to express meaning	R6, R19, R32	A1 or A8 A1
Describe the techniques to eliminate ambiguity 'Conditional' words and their elimination in VTS messages Consequences of misuse of 'conditional' words	R19 (VTS section)	A1 or A8
Describe the use of message markers and the meaning they imply Legal implications of using message markers, particularly "Warning", "Information", "Advice" and "Instruction" Legal and psychological relationship between master, pilot and VTS, and the use of message markers Examples from operational VTS	R19 (VTS section), R13	A1
Specific VTS message construction		
Construct VTS messages Practical communications Examples from 'Basic English' and 'ICAO English'	R19	A1
Explain speech techniques to imply higher message status		

Subjects / Learning Objectives	Reference	Teaching Aid
Standard phrases	R19	A1
State the advantages, disadvantages and application of SMCP Use of standard phrases to trigger predictable actions Limiting the number of standard phrases to ensure recognition and memory retention When standard phrases are not the best method available		
Demonstrate the use of IMO Standard Marine Communication Phrases (SMCP). Introduction to the SMCP - Its overall construction and origins The use of the SMCP on ships, particularly during emergency situations and distress When and how to use the SMCP in response to ships using the system Exercise: Use of SMCP in simulation and in actual recorded events		
Explain when and how to use the SMCP within a VTS (Part 3, section 6 of the SMCP). General layout Exercise: Use of SMCP by a VTS in simulation and recorded VTS events		
Collecting information	R19	A1
Describe information collection and questioning techniques. Direct questioning using message markers Linguistic problems in using voice tone to pose a question Rejection of abstract questions and double questions Sarcasm in questioning.		

MODULE 2 - TRAFFIC MANAGEMENT

2.1 INTRODUCTION

Instructors for this module should have experience in traffic routeing and traffic management as well as in the general VTS and maritime fields. If this cannot be achieved then an appropriate expert should cover certain sections of the module. Every instructor should have full access to simulated VTS. In addition, arrangements should be made, if practicable, for trainees to visit operations VTS centres.

2.2 SUBJECT FRAMEWORK

2.2.1 Scope

This syllabus covers the theory and practice of managing traffic in a VTS area, including area limits, shipping lanes, safety zones, traffic separation schemes and geographical constraints.

It also deals with the theory and practice of monitoring and organising traffic, as well as providing knowledge of applicable international and national regulations and ships' safety certificates.

2.2.2 Aims

On completion of the course the trainee will possess a thorough knowledge of the principles of traffic management and the skills to analyse and apply the knowledge. In addition the trainee will have a good understanding of national and international regulations as pertaining to the provision and conduct of vessel traffic services.

The understanding by trainees of the subject and knowledge and skills gained in other areas, including on-the-job training, will enable the routine day-to-day duties of a VTS Operator to be carried out in an efficient and safe manner.

They will also have sufficient knowledge, comprehension and skills in the subject to serve as the basis for further training to the level of VTS Supervisor.

Every effort should be made to give the trainees realistic exercises on the role of VTS in assisting a ship to navigate safely and expeditiously through a VTS area. Integrated exercises on handling emergency situations should also be carried out.

2.3 SUBJECT OUTLINE OF MODULE 2

Table 7 Subject outline – Traffic management

Subject Area	Recommended Competence Level	Recommended Hours	
		Presentations/ Lectures	Exercises/ Simulation
Regulatory requirements International regulations National regulations including local bye laws Legal liabilities of VTS functions Safety related ship certificates	 Level 2 Level 1 Level 1 Level 1		
Roles and responsibilities Ship masters Marine pilots VTS Allied services	 Level 1 Level 1 Level 3 Level 1		
VTS environment Area limits, boundaries, separation zones, shipping lanes and channels Prohibited or dangerous areas, safety zones, anchorages and restricted areas Traffic separation schemes Traffic separation criteria Geographical constraints	Level 2		
Principles of waterway and traffic management Planning Risk management Allocation of space Criteria which determines the parameters for the safe passage of shipping Aids to navigation	Level 4		
Traffic monitoring and organisation Traffic patterns VTS sailing or route plans Situation analysis	Level 4		
		Total 26 hours	Total 52 hours

2.4 DETAILED TEACHING SYLLABUS OF MODULE 2

Table 8 Detailed teaching syllabus – Traffic management

Subjects / Learning Objectives	Reference	Teaching Aid
Regulatory requirements	R1, R2, R3, R7, R12, R14, R16, R17, R35, R36, R37	
Identify the legislative requirements relating to the VTS area and protection of the marine environment		
International regulations Sources of literature on international legislative requirements (IMO Resolution 857(20); Ship reporting systems; carriage of dangerous goods; World VTS Guide; etc.		
National regulations, including local bye laws Sources of national legislation and promulgation Bye laws Notices to Mariners and other nautical publications		
Legal liabilities of VTS functions Extent of competence, authority and responsibility Competent authority VTS authority Personnel		
Carriage of relevant ship certificates		
Roles and responsibilities		
Explain the roles, responsibilities of and relationships between ship masters, marine pilots, VTS and allied services		
Ship masters Responsibility of the ship master Responsibility of the ship master to VTS		

Subjects / Learning Objectives	Reference	Teaching Aid
Marine pilots Responsibility of the pilot to the ship master Responsibility of the pilot to VTS		
VTS Responsibility to the master and pilot Responsibility of VTS to allied services		
Allied services Knowledge of allied services (i.e. harbour master, port authority) Roles of allied services		
VTS environment	R35, R37	A1,A2
Demonstrate a knowledge of the VTS operational area, including geographical features, traffic routing measures and aids to navigation		
Area limits, boundaries, separation zones, shipping lanes and channels		
Prohibited or dangerous areas, safety zones, anchorages and restricted areas		
Traffic separation schemes		
Traffic separation criteria		
Geographical constraints		
Aids to navigation (e-navigation, virtual aids to navigation)		

Subjects / Learning Objectives	Reference	Teaching Aid
Principles of waterway and traffic management	R1 to R7 inclusive, R17, R35, R41, R58, R59	A1, A2, A3, A5, A6, A7 E2 during simulated exercises
Demonstrate a knowledge of the procedures for maintaining a safe and efficient waterway		
Planning Routeing Channel geography Traffic restriction areas Anchorage areas Obstructions Type of traffic Ship characteristics Cargo characteristics Information Traffic Waterway (Notice to shipping, regattas) Environmental (visibility, waterspouts, dust storms, pollution)		
Risk management Controllable risks Experience of VTS Operators Utilisation of equipment Contingency plans/pollution Uncontrollable risks Geography Meteorological factors Hydrographic factors Traffic congestion Procedures to mitigate risks		

Subjects / Learning Objectives	Reference	Teaching Aid
Allocation of space Ships domain Authorising ship movements Allocation of priorities		
Criteria which determine the parameters for the safe passage of shipping Water reference level Tide gauges Correlation between predicted and actual water levels Allowance for delayed manoeuvres Safe underkeel clearance Draught measurements vertical ship movements, allowance for squat and swell Safety margins in rock and soft sea-bed conditions Net underkeel clearance Gross underkeel clearance, including allowance for weather; exposure and topography Safe air draft Factors affecting and sources of information for calculating air draft Safe channel width Principles of devising a safe width under calm and adverse conditions Limiting factors in precise navigation Adequacy of safe underkeel clearance across channel width Calculation of safe channel or fairway width Shipping movements Movements authorised only when safe criteria have been determined and conditions satisfactorily met		
Traffic monitoring and organisation	R17, R37, R41	A1, A2, A3, A5, A6, A7 E2 during simulated exercises
Demonstrate a knowledge of traffic patterns, sailing/route plans and perform situational analysis required to maintain a safe and efficient waterway		
Traffic patterns Normal traffic patterns Non-routine items affecting traffic patterns (rogue vessels, weather)		

Subjects / Learning Objectives	Reference	Teaching Aid
VTS sailing or route plan Developing a plan to ensure safe and efficient movement of vessel traffic		
Situation analysis Conflict assessment Spatial separation Determination of relevant traffic Participating/non-participating traffic National and international regulations Local procedures Tools for determining relevant traffic - risk of collision, unclear intentions, non-routine action, blind corner etc	R7, R41, R35, R36	

MODULE 3 – EQUIPMENT

3.1 INTRODUCTION

Instructors for this module should have experience in the installation and operation of equipment and systems used in vessel traffic services as well as in the general VTS and maritime fields. If this cannot be achieved then an appropriate instructor should cover certain sections of the module. Every instructor should have full access to simulated VTS. In addition, arrangements should be made, if practicable, for trainees to visit operational VTS centres.

3.2 SUBJECT FRAMEWORK

3.2.1 Scope

This syllabus covers the requirement for VTS Operators to be able to understand the functionalities and operational principles of the basic equipment used in VTS centres.

This course covers the theory and practice of using the basic equipment including the equipment used for data collection and data analysis, audio and video recording and ship identification.

3.2.2 Aims

On completion of the course trainees will possess knowledge of the basic application of VTS equipment and the skills to use the equipment to provide shipping with the service required by the VTS authority.

The trainees will also have been sufficiently trained to use ship identification systems and will be familiar with methods of recording and displaying information. They will also have the skills to operate VTMIS and other computer systems for the purpose of assisting the development of VTS traffic images.

If a simulator is available it is possible to give the trainees realistic exercises on the use of basic VTS equipment and its use in assisting a ship to navigate safely and expeditiously through a VTS area. Integrated exercises on handling emergency situations could also be carried out.

3.3 SUBJECT OUTLINE OF MODULE 3

Table 9 Subject outline - Equipment

Subject Area	Recommended Competence Level	Recommended Hours	
		Presentations/ Lectures	Exercises/ Simulation
Telecommunications Fax Telephone Telex E-mail Electronic Messaging	Level 2		
Radar, audio, video and other sensors Basics of coastal radar and its applications to VTS Generic VTS radar display features Audio equipment Video equipment Recording/replay equipment Meteorological and hydrological sensors	Level 1 Level 3		
VHF/Direction finding (VHF/DF) Purpose and basic principles of VHF/DF Accuracies of VHF/DF bearings	Level 1		
Tracking systems Introduction to radar tracking systems and ARPA Introduction to manual tracking systems Introduction to use of Automatic Identification Systems (AIS) for tracking	 Level 3 Level 1 Level 1		
Information management VTMIS Vessel information Allied services	Level 1		
Equipment performance monitoring Normal operation expectations Troubleshooting	Level 2		
Evolving technologies New technologies as appropriate	Understanding		
		Total 39 hours	Total 6 hours

3.4 DETAILED TEACHING SYLLABUS OF MODULE 3

Table 10 Detailed teaching syllabus – Equipment

Subjects / Learning Objectives	Reference	Teaching Aid
Telecommunications	R34	
Fax Explain and demonstrate the transmission and reception of facsimile message		
Telephone Describe the operation of different telephone systems/technologies and their functionalities State the necessity of prioritisation		
Telex Explain the fundamental operation of telex Describe how to transmit/receive telex messages		
E-mail Explain the fundamentals electronic mail Demonstrate how to transmit/receive E-mail		
Electronic messaging Discuss and explain the evolving electronic messaging system		
Radar, audio, video and other sensors	R34, R41, R49, R57	
Radar Describe the basics of coastal radar and its applications to VTS Coastal radar concepts Application of coastal radar to VTS Sensor fusion System warnings List the features of generic VTS radar display Detection, acquisition and tracking VTS traffic image warnings		

Subjects / Learning Objectives	Reference	Teaching Aid
Describe the function and different types of audio equipment VHF radio Telephone system		
Describe the function and different types of video equipment Close circuit (CCTV) Low light (LLTV) Infra-red		
Describe the function of and different types recording/replay equipment Audio recording Video recording Data recording Synchronization for replay		
Describe the application of meteorological and hydrological equipment Tide gauges - remote height of tide indicators Tidal stream indicator - remote indications Barometer Temperature/humidity indicators Anemometers Visibility		
VHF/Direction finding (VHF/DF)	R34, R49	
Describe the purpose and basic principles of VHF/Direction finding		
State the accuracies of VHF/DF bearings		

Subjects / Learning Objectives	Reference	Teaching Aid
Tracking systems	R49	
Explain the principles of radar tracking and Automatic Radar Plotting Aid (ARPA) ARPA theory Vector analysis Limitations and capabilities Tracking tags Information available Limitations/dangers		
Explain the application of manual tracking systems Strips Cards Electronic strips and information management Ship movement reports		E2
Describe the application of Automatic Identification Systems (AIS) for tracking Modes of operation of AIS	R18, R25, R31, R34, R51, R53, R56	
Information management	R41	
Explain and demonstrate the use Vessel Traffic Management Information Systems (VTMIS) Introduction to VTMIS Co-ordination of information with users/allied services		
List and describe the relevance of vessel information Prioritising of participating vessels Anticipating calls using radar images Information from ships - name, call sign, type, position, speed, destination, ETA, special reports Information to ships - content, timely, relevant		

Subjects / Learning Objectives	Reference	Teaching Aid
Identify and describe the different allied services within a VTS area Information from allied services Information to allied services - content, timely, relevant		
Equipment performance monitoring	R34	
Describe the expected normal operating parameters of equipment Describe and demonstrate the different troubleshooting methods		
Evolving technologies		
Describe new technologies, as appropriate		

MODULE 4 - NAUTICAL KNOWLEDGE

4.1 INTRODUCTION

Instructors for this module should have a good knowledge of ship bridge activities as well as a recognised marine qualification. If this cannot be achieved, then the appropriate expert should cover certain sections of this module. Every instructor should have full access to simulation equipment. In addition, if possible arrangements should be made for trainees to visit operational VTS centres.

4.2 SUBJECT FRAMEWORK

4.2.1 Scope

This syllabus covers the requirement for VTS Operators to be able to carry out certain navigational functions and to have sufficient knowledge of ships to understand limitations of manoeuvrability or the need for special treatment caused by malfunction of shipboard systems or the type of cargo being carried.

This course covers the theory and practice of chartwork, provides knowledge of the collision regulations, buoyage and electronic aids to navigation systems as well as shipboard navigational equipment. It also provides an understanding of ship design matters, certain shipboard systems and some circumstances external to a ship which might influence its behaviour.

This course also provides knowledge of port operations as well as other services provided to shipping by ports, harbours and offshore installations.

4.2.2 Aims

On completion of the course trainees will be able to

- read information from a chart;
- fix the position of ships on a chart;
- read information from tide tables; and
- carry out course, speed and distance calculations, taking into account any set, drift or leeway.

The trainees will also have a sufficient understanding of ships and their systems to enable them to appreciate situations on board and to discuss matters and problems relating to the navigation of a ship through a VTS area with its master, pilot or navigating officer.

The course will also enable trainees to have knowledge of port operations and the ability to co-ordinate information relating to other services provided by port and harbour authorities including offshore installations.

If a simulator is available it is possible to give the trainees realistic exercises on navigating a vessel and the role of VTS in giving assistance to navigate safely and expeditiously through a VTS area. Consideration should be given to running simulated exercises to demonstrate the manoeuvrability of different types of vessel. Integrated exercises on handling emergency situations could also be carried out.

4.3 SUBJECT OUTLINE OF MODULE 4

Table 11 Subject outline – Nautical knowledge

Subject Area	Recommended Competence Level	Recommended Hours	
		Presentations/ Lectures	Exercises/ Simulation
Chartwork Chart information and terminology Plotting positions on paper charts Course/speed/distance/time calculations True and magnetic courses Passage planning Tides and tidal streams Correcting paper charts and publications	Level 1		
Collision regulations International Regulations for Preventing Collisions at Sea (COLREGS)	Level 3		
Aids to Navigation International Maritime Buoyage Radar beacons Satellite and differential satellite position fixing Terrestrial position fixing systems Virtual aids to navigation	Level 2		
Navigational Aids (Shipborne) Radar Gyro and magnetic compasses Other navigational aids	Level 2		
Shipboard Knowledge Ship terminology - Technical Ship terminology - Nautical phrases Types of vessels Types of cargo Ship stability Propulsion systems External forces Vessel bridge procedures	Level 2		
Port Operations and other allied services Pilotage operations Port operations, including contingency plans Security Tugs and towing Ships agents	Level 3		
		Total 85 hours	Total 38 hours

4.4 DETAILED TEACHING SYLLABUS OF MODULE 4

Table 12 Detailed teaching syllabus – Nautical knowledge

Subjects / Learning Objectives	Reference	Teaching Aid
Chartwork	R4, R27	A1, A2, A3, A6, A7
Chart information and terminology Demonstrate knowledge of charts and the information contained thereon Finding positions on the globe - lat/long, great circle Chart projections and geodetic datums Use of charts in VTS Identify and describe chart symbols Symbols associated with VTS Importance of symbols in a VTS area Importance of symbols to the mariner		
Plotting positions on paper charts Demonstrate the basic plotting instruments Parallel rulers Compass/dividers Loran-C interpolations, if applicable Demonstrate the ability to plotting on charts (using various projections as appropriate) Using parallel rulers Using parallel rulers and compass/dividers Measuring distances on charts Explain the use of Lines of Positions (LOPs) Bearings Ranges Loran-C, if applicable Combination of LOPs Definition of “cocked hat” LOPs given from ships and calculated from shore positions		

Subjects / Learning Objectives	Reference	Teaching Aid
Perform exercises on speed/distance/time calculations Introduction of S, D, T formula (S x T = D) Use of formula in simple situations Use of formula in complex situations		
Explain the theory and practice use of true and magnetic courses Perform exercise in laying of a true course Using parallel rulers to compass rose Using parallel rulers to line of longitude on Mercator charts Reading courses off charts Perform exercise in Dead Reckoning (DR) positions Accepted symbology used on charts Calculating and measuring for DR positions Perform exercise in compass and magnetic courses Definition of variation, deviation and compass error Problems associated with using magnetic compass or true courses from shore-based position		
Describe the importance of passage planning The requirement for a vessel to create and use a passage plan The four key elements of a passage plan – appraisal, planning, execution and monitoring Ascertaining waterway information using charts and symbols Formulating plans of action using information provided, chart information, tidal information, etc. Contingency planning		

Subjects / Learning Objectives	Reference	Teaching Aid
Describe the effect of tides and tidal streams Introduction to tides and tidal stream Explain the definition of terms relating to tides and tidal streams Chart datum Spring/neap tides Ebb/flow/slack/eddies Set/drift/rate Diurnal/semi-diurnal Demonstrate the use of tide and current tables Information contained in tide tables Reading tide tables Reading current tables Overview of calculating intermediate heights and times Overview of primary and secondary ports Demonstrate the method of using of tidal streams in calculating an Estimated Position (EP) Review of Dead Reckoning Position (DR) Explanation of EP Effect of tides and currents Effect of wind/leeway		
Correcting paper charts and publications Introduction to Notices to Mariners Introduction to written Notices to Mariners Introduction to broadcast notices to shipping, including fishing vessels Methods of correcting publications Procedures for corrections Recording corrections Methods of correcting paper charts Procedures for corrections Recording corrections Temporary and preliminary corrections		

Subjects / Learning Objectives	Reference	Teaching Aid
Collision regulations		
Cite and explain the International Regulations for Preventing Collisions at Sea Definitions of specific terms in the Collision Regulations Application of the Collision Regulations Application for ships Application as pertains to VTS Enforcement of regulations Basic steering and sailing rules International regulations National specifications and variances Conduct of vessels in specific conditions Conduct in narrow channels Conduct in Traffic Separation Schemes International Distress Signals Annex IV to the Collision Regulations Basic lights, shapes and sounds as described in the Regulations Description of the contents of Annexes I and III, and parts E and F	R7	A1, A2 Case studies

Subjects / Learning Objectives	Reference	Teaching Aid
Aids to Navigation		
Describe international maritime buoyages Introduction to the International Maritime Buoyage System Lateral systems (IALA A & B) Cardinal systems Implications of various systems Regulations pertaining to buoyage systems Characteristics of floating aids Types of buoys Placement of buoys Fundamental rules for safe navigation Chart symbols and abbreviations for floating aids Numbering of aids Topmarks Characteristics of fixed aids Day beacons Light stations Ranges Sector lights Leading lights Fog signals	R43 R42 R42	A1, A2
Explain the functions of radar beacons Introduction to radar beacons (RACONS /Ramarks) Purpose Special characteristics Recognition and identification Implications of radar beacons (RACONS/Ramarks) Limitations Users	R42, R34,	

Subjects / Learning Objectives	Reference	Teaching Aid
Explain the theory and use of satellite and differential satellite position fixing systems Introduction to global navigation satellite systems (GNSS) Purpose of GNSS and DGNSS Types of GNSS and DGNSS Implications to VTS Limitations	R42	
Explain the theory and use of virtual aids to navigation Introduction to and purpose of virtual aids to navigation		
Navigational aids (shipborne)		
Explain the theory of radar and demonstrate its operation Use of radars on board ships Fundamentals of RADAR theory Radar controls Factors affecting radar detection Limitations of ships radars Head up/North up display Relative/true motion Factors affecting interpretation Introduction to tracking systems and ARPA ARPA features and use of radar for collision avoidance Regulations and acts governing performance and carriage of radar	R42, R49, R57	
Explain the theory and use of gyro and magnetic compasses Use of magnetic compass on board vessels Sources of error Corrections Reliability Use of gyro compass on board vessels Accuracy Corrections Reliability		

Subjects / Learning Objectives	Reference	Teaching Aid
Explain the theory and use of other navigational aids Introduction to echo sounders Introduction to speed logs Principles of speed logs Accuracy of speed logs Introduction to ECDIS and ECS Means of displaying information Symbology Uses and limitations Chart datums	R22	
Shipboard knowledge		
List and explain the ship terminology - technical Ship construction terms Ship dimensions - i.e. LOA, LBP, beam, draught, air draught Hull structure - i.e. types of bows, sterns Loadlines draught marks		
List and explain the ship terminology - nautical phrases Directions/relative bearings Numbers Mooring/anchoring terms		

Subjects / Learning Objectives	Reference	Teaching Aid
List and describe the types of vessels General cargo ships Tankers Bulk carriers Combination carriers Container ships Passenger ships Ro-ro ships Fishing vessels Offshore vessels Rigs Offshore supply Offshore tugs Tugs Pilot boats SAR vessels Seaplanes WIG Ships operated by allied services		
List and describe the types of cargo General cargo Refrigerated Liquid LPG/LNG Bulk Containers Ro-ro Fish Livestock Dangerous goods		

Subjects / Learning Objectives	Reference	Teaching Aid
List and ship stability Introduction to ship stability Definitions of heel, list and trim Factors influencing ship stability Recognising dangerous situations regarding ship stability		
Explain the theory and practice of ship handling Effect of pivot point on ship handling Line of approach Stopping characteristics Turning characteristics External forces on ship handling – winds and tides Effect of interaction and squat Vessel manoeuvrability Different types of rudder Different types of propeller Thrusters Use of tugs		
List and describe different propulsion systems Introduction to propulsion systems Diesel, diesel electric Gas turbine Steam Jet		
Explain the list of external forces on vessels Meteorological elements Effects of wind on safety of waterway and ship manoeuvrability Effects of reduced visibility on safety of waterway Effects of high and low pressure systems on water height and depth Oceanographic factors Effects of tides and currents on safety of waterway and ship manoeuvrability Application of COLREGS with regards to tides and currents Planning waterway movements taking into account tides and currents		

Subjects / Learning Objectives	Reference	Teaching Aid
Describe vessel bridge procedures Maintaining a navigational watch Under routine circumstances In pilotage waters In non-pilotage restricted waters Response to emergencies which arise in a VTS area Regulations governing transit of vessels with regard to special circumstances Expected actions on board vessels during special circumstances Bridge operations (arrival & departure) Berthing and unberthing Anchoring	R10 R11, R13, R10, R35, R37R39	
Port operations and other allied services		
Explain pilotage operations Introduction to pilotage operations Pilotage waters Responsibilities of pilots Master/pilot/VTS relationship	R35, R36, R37	
Describe port operations including contingency plans Overview of port operations Interaction of all agencies within a port Responsibilities of harbour masters and berthing masters Clearance procedures Intermodal transport Regulations and acts in effect within harbour limits Contingency plans Pollution SAR Grounding Salvage Fire Security Health		

Subjects / Learning Objectives	Reference	Teaching Aid
Cite and explain the ISPS code with relation to ship and port security Overview of ISPS code Port policing Interaction with municipal, national and international security General overview of security of VTS centres and outstations		
Explain the organisation of tugs and towing The organisation of tugs within a port	See also “Ship handling”	
Explain the role of ships agents General duties of ships agents The role of ships agents		

MODULE 5 - COMMUNICATION CO-ORDINATION

5.1 INTRODUCTION

Instructors for this module should have knowledge, comprehension and the ability to apply communication techniques as well as qualifications in the VTS/Maritime fields. If this cannot be achieved, then the appropriate expert should cover certain sections of this module. Every instructor should have full access to simulated VTS. In addition, arrangements should be made, if practicable, for trainees to visit operational VTS centres.

5.2 SUBJECT FRAMEWORK

5.2.1 Scope

This syllabus covers the requirement for VTS Operators to be able to co-ordinate communications between the VTS centre, participating shipping, allied services and other marine related agencies.

This course covers the theory and practice of co-ordinating communications in a VTS area, including the requirements for and means of providing communications to support an information service, navigational assistance service or traffic organisation service. It also provides an understanding of communication co-ordination requirements in emergency situations.

5.2.2 Aims

On completion of the course trainees will possess a thorough knowledge of the basic principles of communication co-ordination and a good knowledge of international and national regulations relating to communication co-ordination requirements for VTS areas in the country concerned.

The trainees will also have a sufficient understanding and practice of the subject to enable them to prioritise, relay and co-ordinate various types of communication between marine and marine related agencies both on board ships and in shore facilities. These communications follow IALA's list of situations and their associated responses using SMCP in VTS areas.

If a simulator is available it is possible to give the trainees realistic exercises on the role of VTS in co-ordinating communications within a VTS area. Integrated exercises on handling emergency situations could also be carried out.

5.3 SUBJECT OUTLINE OF MODULE 5

Table 13 Subject outline – Communication co-ordination

Subject Area	Recommended Competence Level	Recommended Hours	
		Presentations/ Lectures	Exercises/ Simulation
General communication skills Inter personal communication Procedures to enhance effective communication Verbal and non-verbal communications Cultural aspects and common understanding of messages communicated	Level 3		
Communications Collection Evaluation Dissemination	Level 3		
Log and record keeping Objective Manual log keeping Electronic log keeping Statement and report writing	Level 3		
		Total 7 hours	Total 11 hours

5.4 DETAILED TEACHING SYLLABUS OF MODULE 5

Table 14 Detailed teaching syllabus – Communication co-ordination

Subjects / Learning Objectives	Reference	Teaching Aid
General communication skills		
Posses the knowledge of the basic principles of communication and coordination.		
Describe active listening skills The process of interpersonal communication Effective team communications Empathy		A6 and A7 for documented case studies
State the importance of clear, concise, accurate, timely and meaningful communications Reading-back received message Breaking message into smaller components Rephrasing message		
Demonstrate verbal and non-verbal communications Voice inflection Non-verbal signals or symbols – internal Non-verbal signals or symbols – external		
Identify words that have multiple interpretations and could negatively impact communications Language differences, both cultural and regionally Alternative meanings of words Cultural aspects in decision making processes – potential impacts Cultural aspects in understanding of messages – potential impacts		

Subjects / Learning Objectives	Reference	Teaching Aid
Communications		
Demonstrate and explain data collection Formal messages - ship reporting Ship-ship Ship-shore Shore-ship Shore-shore Electronic data exchange Ship-ship Ship-shore Shore-ship Shore-shore	R2, R3, R16, R28, R35, R37, R41	A6 and A7 for documented case studies.
Explain the use of a communications plan of action Define as routine / non-routine Define emergencies – incidents / accidents Identify objectives Define resources Formulate plan in accordance with contingency plan Consider “worst case” / “what if” scenario Modify plan or objectives as necessary	, R19, R28, R37, R41	A6 and A7 for documented case studies and scenarios of maritime disasters Exercises

Subjects / Learning Objectives	Reference	Teaching Aid
Demonstrate the use of messages and reports Formal messages to vessels: information/warning/advice/instruction Phrasing Timing Content Formal messages - waterway information: information/warning/advice/instruction Phrasing Timing Content Formal messages - allied services: information/warning/advice/instruction Phrasing Timing Content	R19, R58	
Special reports Phrasing Timing Content Informal messages Phrasing Timing Content		
Log and record keeping		

Subjects / Learning Objectives	Reference	Teaching Aid
List and describe logs and records used by VTS Accuracy of logs & records Factual Complete Chronological Legible Standardised Retention of logs & records Manual: as per national statutory requirements Electronic: as per national statutory requirements Legal implications Statistical process control Local/national/international database for accident investigation	R28, R37, R41, R44	

Subjects / Learning Objectives	Reference	Teaching Aid
Describe the methods of keeping a log Manual log keeping Introduction to manual logs Purpose Benefits Difficulties Methods of recording Hand written Printed copy Filing Purpose Storage Access Electronic log keeping Introduction to electronic logs Purpose Benefits Difficulties Methods of recording Voice Radar/video Electronic data input devices Filing Back-up arrangements Storing		
State the purposes and requirements for statement and report writing Statutory Electronic and manual Legal implications		

MODULE 6 - VHF RADIO

6.1 INTRODUCTION

Instructors for this module should have the knowledge, comprehension and the ability to apply VHF radio communication techniques in a VTS environment. If this cannot be achieved, then the appropriate expert should cover certain sections of this module. Every instructor should have full access to simulation equipment. In addition, arrangements should be made, if practicable, for trainees to visit operational VTS centres.

6.2 SUBJECT FRAMEWORK

6.2.1 Scope

This syllabus covers the requirement for VTS Operators to be able to transmit voice and data messages using radio sub-systems and equipment for the purpose of fulfilling the functional requirements of VTS centres.

This course covers the theory and practice of using basic VHF radio equipment to transmit and receive calls, messages and information by radiotelephony, the Digital Selective Calling (DSC) system and VHF Automatic Identification System (AIS).

6.2.2 Aims

On completion of the course the trainees will have the ability to transmit and receive, efficiently and effectively, voice and data radio communications by all radio sub-systems used in VTS provided by the Competent Authority concerned, in accordance with international regulations and procedures.

They will also know the procedures used in radiotelephone and radio data communications and be able to use radiotelephones and radio data equipment, particularly with respect to VTS, distress, safety and navigational messages.

Trainees will also have the skills to ensure that English language messages (SMCP) relevant to VTS are correctly handled.

If suitable facilities are available it is possible to give the trainees realistic exercises on the transmission and reception of radio traffic within a VTS area. Integrated exercises involving several radio stations could also be carried out.

6.3 SUBJECT OUTLINE OF MODULE 6

Table 15 Subject outline – VHF radio

Subject Area	Recommended Competence Level	Recommended Hours	
		Presentations/ Lectures	Exercises/ Simulation
Radio operator practices and procedures GMDSS Restricted Operator's Certificate (ROC) or internationally recognised radio certification	Level 4		
VHF radio systems and their use in VTS Frequencies in the VHF maritime mobile band (ITU RR Appendix S18) National frequency assignments to VTS	Level 3		
Operation of radio equipment Introduction to basic VTS VHF radiotelephone, DSC and AIS equipment Controls and operation of VHF radiotelephone equipment Controls and operation of VHF DSC equipment Controls and operation of VHF AIS equipment	Level 4		
Communication procedures, including SAR VHF radiotelephone procedures VHF DSC communication procedures VHF AIS communication procedures Equipment failure and channel saturation	Level 3		
		Total 15 hours	Total 42 hours

6.4 DETAILED TEACHING SYLLABUS OF MODULE 6

Table 16 Detailed teaching syllabus – VHF radio

Subjects / Learning Objectives	Reference	Teaching Aid
Radio operator practices and procedures		
Describe and perform exercises on radio operator practices and procedures		
GMDSS Restricted Operator's Certificate (ROC) Internationally recognised radio certification	R10, R33, R28, R29, R30, R31	A12 or A13, E1, E5
VHF radio systems and their use in VTS		
Describe VHF radio systems and their use in VTS		
Frequencies in the international VHF maritime mobile band Single frequency and two frequency channels Simplex working Semi duplex Duplex working Port operation and ship movement frequencies Distress, safety and calling frequencies Radiotelephone DSC Automatic Identification Systems (AIS) Introduction to AIS Application of AIS to VTS	R10, Appendix S18	
Restrictions on the use of Radio Regulations (RR) Appendix S18 frequencies	R10, Appendix S18	
National frequencies assigned to VTS Assignment and use of single and two frequency channels for VTS purposes National restrictions on the use of RR Appendix S18 frequencies	R37	

Subjects / Learning Objectives	Reference	Teaching Aid
Operation of radio equipment		
Describe and demonstrate the operation of radio equipment		
Introduction to basic VTS VHF radiotelephone, DSC and AIS equipment Principles, controls and operation of VHF Channel spacing Modulation Range	R35	A12 or A13, E1, E5
Principles, controls and operation of DSC Format of a transmission sequence Message composition Error checks Principles, controls and operation of AIS Format of a transmission sequence Message composition Automatic and manual modes	R34 R29 R30 R18, R25, R34, R31, R47, R51, R53	
Communication procedures, including SAR		
Describe and demonstrate the communication procedures, including SAR		
VHF Radiotelephone procedures Distress, urgency, safety and calling DSC communication procedures using VHF Distress, urgency, safety and calling AIS communication procedures using VHF Distress, urgency, safety and calling Equipment failure and channel saturation	R13, R21, R28, R29, R34 R29, R30 R18, R25, R34, R31, R47, R51, R53 R34	A12 or A13, E1, E5

MODULE 7 - PERSONAL ATTRIBUTES

7.1 INTRODUCTION

Instructors for this module should have experience of human relationships in the VTS field. If this cannot be achieved, then an appropriate expert should cover certain sections of this module.

In addition, instructors of other modules should continuously monitor the personal attributes of trainees and, when appropriate, draw their attention to the need to meet the learning objectives of this module.

7.2 SUBJECT FRAMEWORK

7.2.1 Scope

This syllabus addresses the requirement for VTS Operators to perform their duties properly under all conditions including emergencies and stressful situations. It is recommended that the contents of this module be presented to the trainees in the early stages of the course.

7.2.2 Aims

On completion of the course trainees will have the knowledge and ability to conduct their duties in a manner which conforms to accepted principles and procedures established by the Competent Authority concerned.

7.3 SUBJECT OUTLINE OF MODULE 7

Table 17 Subject outline – Personal attributes

Subject Area	Recommended Competence Level	Recommended Hours	
		Presentations/ Lectures	Exercises/ Simulation
Interaction with others and human relation skills Public relations Establishing and sustaining a good working relationship with VTS stakeholders Negotiations with VTS stakeholders Successful conflict resolution Team working skills	Level 2		
Responsibility and reliability Safety awareness Health awareness Punctuality Attentiveness Importance of maintaining the trust of all VTS stakeholders	Level 4		
		Total 6 hours	Total 4 hours

7.4 DETAILED TEACHING SYLLABUS OF MODULE 7

Table 18 Detailed teaching syllabus – Personal attributes

Subjects / Learning Objectives	Reference	Teaching Aid
Interaction with others and human relation skills		
Have the knowledge and ability to conduct their duties in a manner which conforms to accepted principles and procedures.		
Describe public relations policy General introduction to the maintenance of good public relations. The media and press and their requirements. Information that can be provided to others and the manner of its release. Dealing with traumatised individuals.		
Describe how to establish and sustain working relationships Internal External Importance of maintaining the trust of all VTS stakeholders Ship masters Pilots Other authorities and organisations Allied services Other services		
Identify methods of conflict resolution When and how to intervene Internal External		
Describe the benefits of team working skills Characteristics of leaders and followers Adaptability/ flexibility Diplomacy Ability to analyse the role of VTS Decision making process		

Subjects / Learning Objectives	Reference	Teaching Aid
Taking initiative Prioritising tasks Thinking critically Communicating with team members Assertiveness		
Responsibility and reliability		
Explain the role of health and safety performing the VTS mission Personal safety Safety of VTS stakeholders Personal health Causes of stress Managing work related stress Managing personal stress Substance abuse		
Cite the reasons for time management Relief of watch Planning Reducing fatigue		
Describe how professionalism and mission focus is important Working climate Team spirit Awareness of personal circumstances		

MODULE 8 - EMERGENCY SITUATIONS

8.1 INTRODUCTION

Instructors for this module should have the knowledge, comprehension and the ability to apply emergency practices and procedures in a VTS environment. If this cannot be achieved, then the appropriate expert should cover certain sections of this module. Every instructor should have full access to simulated VTS. In addition, arrangements should be made for trainees to visit operational VTS centres and Rescue co-ordination centres, if conditions allow it.

8.2 SUBJECT FRAMEWORK

8.2.1 Scope

This syllabus covers the requirement for VTS Operators to be able to respond rapidly and effectively to emergency situations that may arise within a VTS area.

This course covers the theory and practice of responding to emergency situations and wherever practicable, maintaining an efficient flow of marine traffic while the emergency situation is being dealt with. It also provides knowledge and comprehension of the co-ordination necessary to minimise the effect of any emergency situation.

8.2.2 Aims

On completion of the course trainees should have knowledge of related national and international regulations and procedures relating to emergency situations, security alerts, pollution response and other special circumstances. They should also have the ability to identify properly the type and scale of an emergency, activate the relevant contingency plan, ensure the protection of the VTS area and, as far as practicable, maintain a safe flow of marine traffic.

The trainees should also have sufficient understanding and practice to be able to co-ordinate effectively with allied services, particularly search and rescue authorities.

Trainees should be given realistic exercises on the role of VTS during emergency situations within a VTS area. Integrated exercises on handling emergency situations should also be carried out.

8.3 SUBJECT OUTLINE OF MODULE 8

Table 19 Subject outline – Emergency situations

Subject Area	Recommended Competence Level	Recommended Hours	
		Presentations/ Lectures	Exercises/ Simulation
International, national, regional and local regulations Scope of responsibility and authority to act Local regulations, bye laws	Level 2		
Contingency plans Introduction, preparation and implementation of contingency planning Preparation and use of checklists	Level 2		
Prioritise and respond to situations Ascertain nature of incident Commence alerting procedures Navigational warnings Co-ordination with, and support to, allied services Maintaining communications Updating of situation reports	Level 3		
Record activities concerning emergencies Objective of recording activities during emergency situations Introduction to methods of recording activities during emergency situations Information which should be recorded security of recorded information	Level 3		
Maintain a safe waterway throughout emergency situations Maintaining traffic management and monitoring procedures	Level 3		
Internal/external emergencies Procedures for individual emergencies Maintenance of VTS Operations	Level 3		
		Total 12 hours	Total 10 hours

8.4 DETAILED TEACHING SYLLABUS OF MODULE 8

Table 20 Detailed teaching syllabus – Emergency situations

Subjects / Learning Objectives	Reference	Teaching Aid
International, regional and local regulations		
Explain national and international regulations and procedures relating to emergency situations, security alerts, pollution response and special circumstances		
Scope of responsibilities and authority to act in emergency situations (local/regional/national/international)	R5, R6, R7, R13, R24, R28, R35, R38, R39, R40	
Local regulations, bye laws Supporting and allied services Define the supporting and allied services which are available Define the assets which are available for deployment	R35	
Contingency plans		
Describe the preparation and implementation of contingency plans		
Introduction, preparation and implementation of contingency plans Collisions Groundings Marine pollution (air/water) Fire Hazardous cargoes SAR incidents, including man overboard Other contingency plans including, but not limited to the following: medical, casualty evacuation, special weather conditions Organisations to be alerted Simultaneous emergencies	R13, R35, R36, R38, R39, R40, R41	

Subjects / Learning Objectives	Reference	Teaching Aid
Describe the preparation and use of checklists Introduction and use of checklists Description of a checklist Authority to prepare, implement, issue and update checklists	R37	
Prioritise and respond to incidents	R13, R41, R58	A14
Explain the steps in classification of an emergency situation and explain the activation of the relevant contingency plans		
Prioritise incident: - Data collection - Evaluation - Classification of incident Response planning and action: - Commence alerting procedures - Maintaining safe and efficient flow of traffic - Co-ordination with, and support to, allied services - Updating of situation reports - Navigational warnings (if required) May include but not be limited to: - Collisions - Groundings - Marine Pollution - Fire - Hazardous cargoes - SAR incidents - Other special circumstances	R13, R23, R28, R35, R37, R41, R53, R55, R58	

Subjects / Learning Objectives	Reference	Teaching Aid
Record activities concerning emergencies		
Describe objectives and procedures for recording activities during emergency situations, including methods, the information recorded and security of information		
Objective of recording activities during emergency situations Introduction to methods of recording activities during emergency situations Information which should be recorded Security of recorded information	R17, R53, R55	
Maintain a safe waterway throughout emergency situations	R35, R37, R41, R58	A14
Describe the actions required to ensure the protection of the VTS area and, as far as practicable, maintain a safe and efficient flow of traffic		
Maintaining traffic management and monitoring procedures Alternative routing arrangements Diversionary procedures (traffic in immediate incident area) Anchorage areas Introduction of emergency speed restrictions Emergency alterations to VTS sailing/route plans and passage plans		
Internal/external emergencies	R35, R37, R41, R58	
Describe the procedures for dealing with internal/external emergencies affecting normal operations of a VTS centre		
Procedures for individual emergencies Checklists Maintenance of VTS Operations Communications Traffic image		

ANNEX 1 VTS OPERATOR COMPETENCE CHART

Competence Area	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
Module 1 Language	*English Language and language authorised by the Government* Adequate knowledge of the English language and the language authorised by the Government to enable the operator to use charts, nautical publications and regulations; to understand meteorological, waterway, port management and safety information and to communicate with other ships, shore facilities and agencies. Ability to use and understand the IMO Standard Marine Communication Phrases	Examination and assessment of evidence obtained from practical instruction. Standard language assessment as used by the Government, see Annex 3 – Example of English language tests.	English language publications, regulations and messages relevant to the safety of the VTS area are correctly interpreted or drafted. Written and verbal reports regarding vessels and shore facilities relating to the VTS area are correctly interpreted or drafted. Communications by any means are clear and understood. Written reports Oral communication (articulation and enunciation) Reading skills
Module 2 Traffic management	*Regulatory requirements* 1. relevant national and international regulations; 2. implications of legal liabilities related to VTS functions; 3. safety related ship certificates.	Examination and assessment of evidence obtained from practical instruction and on the job training	Legislative requirements relating to the VTS area and the protection of the marine environment are correctly identified
	VTS environment 1. traffic patterns; 2. VTS area.	Examination and assessment of evidence obtained from practical instruction and approved simulator and on the job training	Demonstrate the ability to carry out the task safely and effectively
	Traffic monitoring and organisation Thorough knowledge of relevant national and international regulations, procedures, equipment, skills and techniques involved in monitoring and organising vessel traffic.	Examination and assessment of evidence obtained from simulated and on the job training for the following traffic configurations 1. off-shore; 2. coastal; 3. harbour approach and ports; 4. inland waterway.	Demonstrate a knowledge of the VTS operational area, including geographical features, traffic routing measures and aids to navigation Demonstrate a knowledge of the procedures for maintaining a safe and efficient waterway

Competence Area	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
Module 3 Equipment	*Basic equipment* 1. Telecommunications; 2. Radar; 3. Audio/video; 4. VHF/DF; *5.* Performance monitoring.	Examination and assessment of evidence obtained from practical instruction and approved simulator and on the job training	Demonstrate the ability to operate the equipment safely and effectively and to monitor its performance. Information obtained from the equipment and associated features is correctly interpreted and analysed taking into account the limitations of the equipment and prevailing circumstances and conditions
	Basic systems 1. Computerised; 2. Management information; 3. Manual tracking; 4. Radar tracking.	Assessment of evidence obtained from approved simulated and on the job training.	Demonstrate the ability to operate the systems safely and effectively. Information obtained from the systems and associated features is correctly interpreted and analysed taking into account the limitations of the system and prevailing circumstances and conditions
	Evolving technologies 1. ECS; 2. VTMIS; 3. AIS.	Assessment of evidence obtained from approved simulated and on the job training.	Demonstrate the ability to understand the techniques and to operate the equipment safely and effectively
Module 4 Nautical knowledge	*Carry out chartwork* Knowledge of and ability to use navigational charts and related publications 1. Chart information and terminology; 2. Plotting positions on charts; 3. True and magnetic courses; 4. Course/speed/distance/time calculations; 5. Tides and currents; 6. Traffic patterns; 7. Charts and publications corrections.	Examination and assessment of evidence obtained from practical instructions and approved simulated and on the job training using chart catalogues, charts and navigational publications	The information obtained from navigational charts and publications is relevant, interpreted correctly and properly applied. Tools associated with chart work are properly manipulated, work carried out on the chart is easily interpreted and adheres to indicated standards. Calculations and measurements of navigation information are accurate.
	Collision regulations Understanding of the content, application and intent of the International Regulations for Preventing Collisions at Sea (COLREGS).	Examination and assessment of evidence obtained from practical instruction and approved simulated and on the job training	Demonstrate the ability to interpret the application of the regulations relevant to a VTS area.
	Aids to Navigation Knowledge of various buoyage systems and electronic aids to navigation systems.	Examination and assessment of evidence obtained from practical instruction and approved simulated and on the job training.	Demonstrate the ability to interpret the effect of aids to navigation on the traffic flow in a VTS area.

Competence Area	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
Module 4 Nautical knowledge (Continued)	*Navigational aids* Basic understanding of Shipboard Navigational Equipment and electronic means of navigation (Radar, Compasses, ECDIS, ECS, etc.)	Assessment of evidence obtained from approved simulated and on the job training.	Demonstrate the ability to interpret the effect of aids to navigation on the traffic flow in a VTS area.
	Shipboard Knowledge Basic understanding of: 1. Ship terminology; 2. Different types of ships and cargo, including dangerous goods codes; 3. Ship stability; 4. Propulsion systems; 5. External forces; *6.* Vessel bridge procedures.	Examination and assessment of evidence obtained from practical instruction and approved simulated and on the job training.	Demonstrate the ability to assimilate all available information relevant to ship design, meteorological and hydrographic conditions that may influence the flow of traffic within a VTS area
	Port operations Knowledge of port operations. Knowledge of and ability to coordinate information relating to: 1. Pilotage; 2. harbour operations (including contingency plans); 3. security; 4. tugs and towing; 5. ships agents; *6.* other allied services.	Examination and assessment of evidence obtained from practical instruction and approved simulated and on the job training	Demonstrate the ability to assimilate all available information relevant to port operations and allied services that may influence the flow of traffic within a VTS area

Competence Area	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
Module 5 Communication co-ordination	*General communication skills* Knowledge of: 1. aspects of inter personal communication; 2. problems which can block or hinder the communication process; 3. the difference between verbal and non-verbal aspects of communication; 4. cultural aspects that can hinder the acquisition of a common understanding of messages communicated.	Assessment of skills in overcoming communication problems intentionally introduced in a simulated environment	Demonstrate the ability to avoid the introduction of communication problems and to overcome such problems when they are experienced
	Co-ordinate various communications between marine and marine related agencies. 1. Routine; 2. Emergency; *3.* Support functions.	Assessment of evidence obtained from approved simulated and on the job training	Demonstrate the ability to prioritise, relay and co-ordinate various communications between marine and marine related agencies, both on board participating vessels and in shore facilities
	Log keeping 1. Manual; *2.* Electronic.	Assessment of evidence obtained from approved simulated and on the job training	Demonstrate the ability to accurately maintain Logs
Module 6 VHF Radio	*Transmit and receive information using VHF radio equipment* 1. Radio operator practices and procedures; 2. VHF radio systems and their use in VTS; 3. Operation of radio equipment; 4. Communication procedures, including SAR.	Examination and assessment of evidence obtained from practical demonstration of operational procedures using: 1. approved equipment; 2. communication simulator; where appropriate 3. radio communication laboratory equipment, where appropriate.	Transmission and reception of communications comply with international regulations and procedures and are carried out efficiently and effectively. English language messages relevant to the VTS area are correctly handled.

Competence Area	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
Module 7 Personal attributes	*Diplomacy* Knowledge of, and ability to perform: 1. public relations; 2. operational telephone conversations; 3. negotiations with other interested parties.	Assessment of evidence obtained from approved simulated and on the job training.	Conduct conforms to acceptable principles, including confidentiality, and procedures established by the Competent Authority concerned.
	Time management Demonstrate skills required to perform and prioritise multiple and varying tasks Demonstrate initiative and critical thinking skills in dealing with unexpected circumstances	Assessment of evidence obtained from approved simulated and on the job training.	Conduct conforms to acceptable principles and procedures established by the Competent Authority concerned.
	Reliability Demonstrate 1. punctuality; 2. thoroughness; 3. decisiveness.	Assessment of evidence obtained from approved simulated and on the job training	Conduct conforms to acceptable principles and procedures established by the Competent Authority concerned.
	Stress management Demonstrate decision making skills when dealing with routine situations, emergency situations, panic stricken people and other unexpected circumstances.	Assessment of evidence obtained from approved simulated and on the job training	Conduct conforms with acceptable principles and procedures established by the Competent Authority concerned.
Module 8 Emergency situations	*Response to contingency plans* Knowledge of related national and international regulations concerning distress, pollution prevention and special circumstances and demonstrate the ability to: 1. prioritise and respond to situations; 2. commence alerting procedures; 3. co-ordinate with allied services; and 4. record activities. while continuing to maintain a safe waterway in all aspects.	Assessment of evidence obtained from approved simulated and on the job training.	Type and scale of emergency properly identified. Activate the relevant contingency plan appropriate. Actions undertaken ensure the protection of the VTS area and, as far as practicable, maintain a safe flow of marine traffic

ANNEX 2 TEACHING AIDS AND REFERENCES

Teaching aids that the participants ideally should have access to:

A1 Simulated VTS environment capable of meeting the training objectives

A2 Briefing/debriefing area for simulations, including facilities for modelling performance and reviewing recorded exercises

A3 Charts and associated publications

A4 Examples of Notices to Mariners applicable to a VTS area

A5 Ship models

A6 Video recording and playing facilities

A7 Audio recording and playing facilities

A8 Interactive language laboratory

A9 Personal computer

A10 Simulator exercises to practice operational maritime English

A11 Examples of equipment and systems capable of being manipulated in a manner similar to the equipment and systems used in VTS centres

A12 Interactive VTS simulator, including VHF facilities

A13 Simulated VHF DF system including digital selective calling facilities

A14 Appropriate video films;

A15 Manuals, strip cards and other facilities for use with the monitoring systems being taught

A16 Appropriate interactive video

A17 Guest speakers

A18 Case studies

Equipment recommended for each participant:

E1 Headset/microphone with press to talk (PTT) facilities

E2 Logging system

E3 For chartwork exercises, desks approximately 1 metre long by 0.7 metres width, with drawers for chart stowage

E4 Protractor, parallel ruler, dividers, nautical almanac, charts of a VTS area, calculator, chart correcting facilities

E5 Audio tapes of recorded VTS communications

References relevant to the planning of VTS training:

R1* SOLAS' 74 Regulation V/10 – Ships' routeing

R2* SOLAS '74 Regulation V/11 - Ship reporting systems

R3* SOLAS '74 Regulation V/12 - Vessel traffic services

R4* SOLAS '74 Regulation V/27 - Nautical charts and nautical publications

R5* SOLAS '74 Regulation V/7 – Search and rescue services

R6* United Nations Convention on the Law of the Sea (UNCLOS)

R7* International Regulations for Preventing Collisions at Sea, 1972 (COLREGS)

R8* International Maritime Dangerous Goods Code (IMDG Code)

R9* International Convention on Standards of Training, Certification and Watchkeeping of Seafarers, 1978, as amended in 1995 (STCW Convention)

R10* Seafarer's Training, Certification and Watchkeeping Code (STCW 95 Code)

R11* IMO GMDSS Manual

R12* IMO publication on Ships' Routeing

R13* IMO/ICAO Publication "International Aeronautical and Maritime Search and Rescue (IAMSAR) manual" - in three volumes:

Vol 1 – Organization and management (IMO 960)

Vol 2 – Mission co-ordination (IMO 961)

Vol 3 – Mobile facilities (IMO 962)

R14* IMO Assembly resolution A.705(17), Promulgation of Maritime Safety Information (MSI)

R15* IMO Assembly resolution A.772(18), Fatigue factors in manning and safety

R16* IMO Assembly resolution A.851(20), General principles for ship reporting systems and ship reporting requirements, including guidelines for reporting incidents involving dangerous goods, harmful substances and/or marine pollutants

R17* IMO Assembly resolution A.857(20), Guidelines for Vessel Traffic Services

R18* IMO Assembly resolution A.917(22), as amended by resolution A.956(23) on Guidelines for the onboard operational use of shipborne automatic identification systems (AIS)

R19* IMO Assembly resolution A.918(22), Standard Marine Communication Phrases

R20* IMO Assembly resolution A.950(23), Maritime Assistance Service (MAS)

R21* IMO Assembly resolution A.954(23), Proper use of VHF channels at sea

R22* IMO Maritime Safety Committee resolution MSC.232(82), Revised performance standards for Electronic Chart Display and Information Systems (ECDIS)

R23* IMO COMSAR/Circ.15 - Joint IMO/IHO/WMO Manual on Maritime Safety Information (MSI)

R24* IMO MSC/Circ.1014, Guidelines on fatigue mitigation and management

R25* IMO SN/Circ.244, Guidance on the use of the UN/Locode in the destination field in AIS messages

R26* International Code of Signals

R27 IHO approved documents of charts and publications

R28 ITU Radio Regulations, including Appendices

R29 ITU-R Recommendation M.493, DSC for use in the maritime mobile services

R30 ITU-R Recommendation M.541, Operational procedures for the use of DSC equipment in the maritime mobile services

R31 ITU-R Recommendation M.1371, Technical characteristics for an automatic identification system using time division multiple access in the VHF maritime mobile band

R32 IELTS Handbook - British Council, or equivalent.

R33 Marine Communications Handbook - Lloyds of London

R34 Equipment and system operating manuals

R35 National, regional and local legislation and regulations on VTS, ports, harbours, pilotage and allied services

R36 National Notices to Mariners pertaining to VTS

R37 National procedures and standards for operation of VTS

R38 National procedures and standards for operation of International Convention for the Prevention of Pollution from Ships (MARPOL)

R39 National arrangements for intervention, pollution and salvage

R40 Local/regional contingency and emergency requirements

R41 IALA Vessel Traffic Services Manual

R42 IALA Aids to Navigation Guide (NAVGUIDE)

R43 International Maritime Buoyage System (MBS), published by IALA

R44 IALA Recommendation V-103, Standards of training and certification of VTS Personnel

R45 IALA Recommendation V-119, Implementation of Vessel Traffic Services

R46 IALA Recommendation V-120, Vessel Traffic Services in Inland Waters

R47 IALA Recommendation V-125, The Use and Presentation of Symbology at a VTS Centre (including AIS)

R48 IALA Recommendation V-127, Operational procedures for Vessel Traffic Services

R49 IALA Recommendation V-128, Operational and technical performance requirements for VTS equipment

R50 IALA Guideline 1017, Assessment of Training Requirements for Existing VTS Personnel, Candidate VTS Operators and Revalidation of VTS Operator Certificates

R51 IALA Guideline 1026, AIS as a VTS tool

R52 IALA Guideline 1027, Designing and implementing simulation in VTS Training at Training Institutes/VTS Centres

R53 IALA Guidelines 1028, The Automatic Identification System (AIS) Volume 1, Part I Operational Issues

R54 IALA Guideline 1032, Aspects of Training of VTS Personnel relevant to the introduction of the Automatic Identification System

R55 IALA Guideline 1045, Staffing levels at VTS centres

R56 IALA Guideline 1050, Management and Monitoring of AIS Information

R57 IALA Guideline 1056, Establishment of VTS Radar Services (Ed 1)

R58 IALA Guideline 1068, Provision of a Navigational Assistance Service by Vessel Traffic Services

R59 IALA Guideline 1070, VTS role in managing Restricted or Limited Access Areas

R60 IALA Guideline 1071, Establishment of a Vessel Traffic Service beyond territorial seas

*There is an annual catalogue of IMO Publications, many of which are printed in languages other than English. The catalogue provides ISBN and IMO references to these publications and the price, together with order forms which may be faxed. Additionally, training organisations and course co-ordinators should note that groups of publications are also made available on CD-ROM, and may be a more convenient method of obtaining some of the data that they require.

The catalogue contains a list of national distributors who maintain stocks of IMO Publications.

The IMO Publications catalogue is available free of charge from:

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ANNEX 3 EXAMPLE OF ENGLISH LANGUAGE TESTS

In the United States of America the Test of English as a Foreign Language (TOEFL) is used and in the United Kingdom the International English Language Testing System (IELTS) is used. Other countries also have similar testing systems.

IELTS, which is jointly managed by the University of Cambridge Local Examinations Syndicate, the British Council and IDP Education Australia, provides an assessment of whether candidates are ready to study or train in the medium of English. It is recognised widely as a language requirement for entry to courses in teaching of English further and higher education. It is readily available at test centres around the world, which arrange test administration according to local demand.

The IELTS system uses band scores that are recorded on a test report form showing overall ability as well as performance in listening, reading, writing and speaking. There are 9 bands ranging from:

Band 1 - “Non-user” For a person who essentially has no ability to use the language beyond possibly a few isolated words; to,

Band 9 - “Expert user” For a person with full operational command of the language; with complete understanding, and who uses the language appropriately, accurately and fluently.

IELTS is a test for general English and the nearest test considered applicable for trainee VTS Operators is that for General Training. It is recommended that the overall ability level be IELTS Band 5, Modest User, or the equivalent in similar testing systems.

Modest User is defined as:

> *Has partial command of the language, coping with overall meaning in most situations, though is likely to make many mistakes. Is not able to use complex language.*