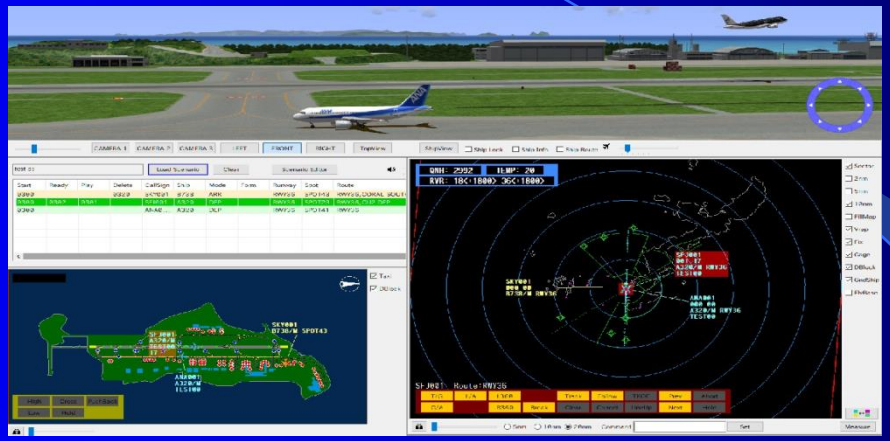
ATC Tower Training with



3D Tower Simulator

History of Tower Simulator

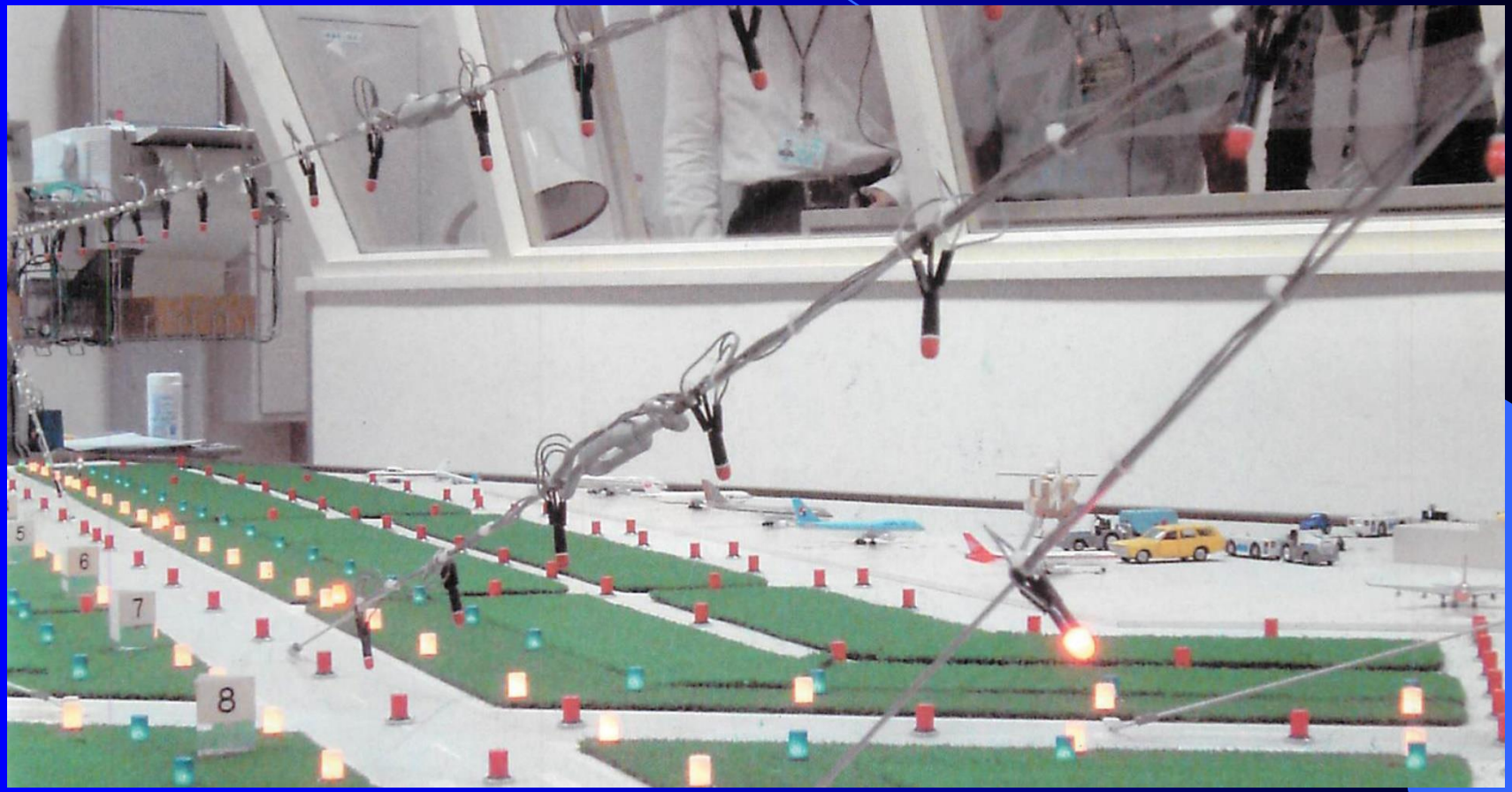
NASA Tests 360-Degree Airport Simulator for the Future of Air Traffic Control.

- The view is recreated on 12 projection screens from high-resolution aerial photography, elevation data and close-up digital photography. In FutureFlight's simulated world of aviation, planes taxi along the runway, take off, and land just as they would at a real airport.

Legacy models

Model in Rotation

Legacy models



Tower Simulator is as practical as Flight Simulator?

Flight Simulator(1)

Simulators can help with:

Procedures

Reviewing steps and procedures before going in the air. For example, for a student, steep turns or stall recovery can be a little nerve wracking at first. It may be much easier (and cheaper) to do it in a sim with an instructor, discussing all the steps and reasons for actions. Then when the student gets in the air, they won't have the "feel" for it, but at least the general process is already familiar.

Flight Simulator(2)

Simulators can help with:

Navigation

Tuning and identifying VORs, and interpreting the needles can be done just as well be done on the ground as in the air. If the sim has good, realistic terrain, it can also be used for some visual reference lessons.

Instrument interpretation

Scanning and cross-checking the 6-pack of instruments can be done in a simulator just fine, and a student can practice doing it for long periods of time for a fraction of the cost of flight-time.

Flight Simulator(3)

Simulators are not good enough for training:

On the ground & Outside the plane

Anything on the ground, such as taxiing and parking, or anything outside the airplane, such as pre-flight inspection, or weather interpretation, just doesn't work in a sim.

Radios

I haven't seen any flight sims that really work for the practice of talking on or listening to the radios. I don't think there's any good substitute for actually flying in a real airspace while simultaneously engaging in real radio conversations.

Flight Simulator(4)

Simulators are not good enough for training :

Feel

Even the best full-motion sim isn't a substitute for the forces a student feels in a real airplane. This is especially true on ground-reference maneuvers, takeoffs, and landings, where I feel sims fall far short of reality. No one will ever get a "feel" for the plane from a simulator.

Tower Simulator(1)

Training Areas simulators can help with:

Procedures

Reviewing standard procedures before siting for the actual OJT. For example a trainee can learn standard phraseology for landing clearance weather information and taxi instructions. He can confirm coordination procedures with trainer.(using land lines, if available) Flight progress strip marking and data recording such as down time can be confirmed.

Tower simulator is quite useful for the starter to master basic procedures.

Tower Simulator(2)

Training Areas simulators can help with:

Evaluations

Evaluation for newly planned airport is possible only by simulators. This is also true for some minor changes in airport layout, such as additional taxiways. Tower simulator has some advantages over the first time simulators because the traffic movements can be manipulated flexibly to cope with the situation. First time simulator variates time parameters and records the aircraft movements for analysis. But it is rather difficult to change course of simulation interactively according to the traffic situation.

Tower Simulator(3)

Training Areas simulators can help with:

Abnormal situation handling

Reviewing standard procedures before siting for the actual OJT. For example a trainee can learn standard phraseology for landing clearance weather information and taxi instructions. He can confirm coordination procedures with trainer.(using land lines, if available) Flight progress strip marking and data recording such as down time can be confirmed.

Tower Simulator(4)

Tower simulators are not good enough for training

Is tower simulator is realistic enough for the training?

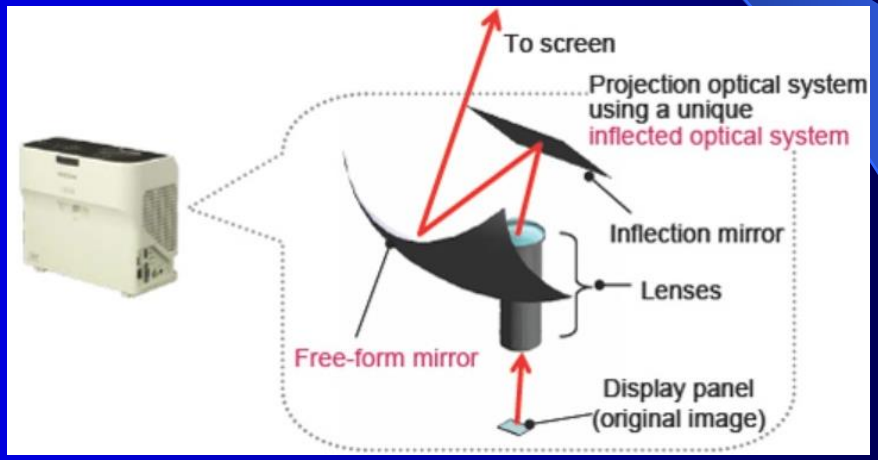
Wow!! To the Visitors!

Tower Simulator needs.. (1)

Total View of 'TO-SIM 3D-1' - Tower Simulator. 360° horizontal coverage, diameter: 12m, height: 3.8m

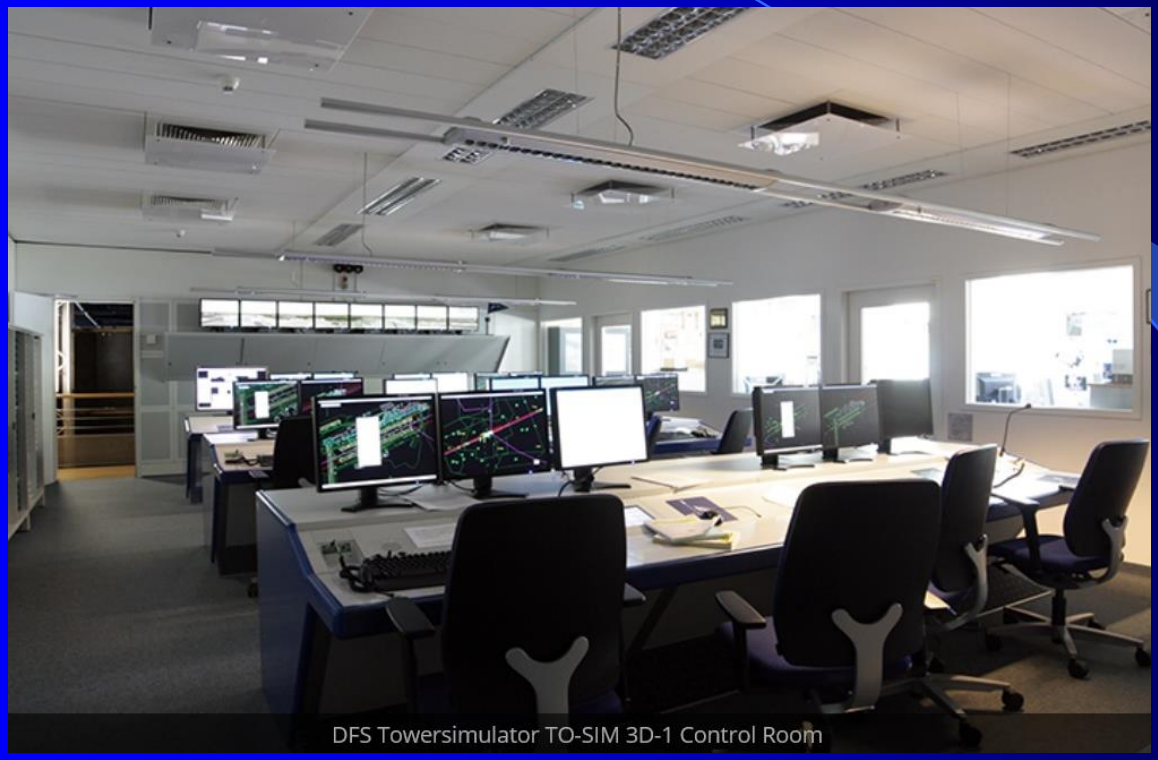
Tower Simulator needs spacious room.

Tower Simulator needs.. (1-1)



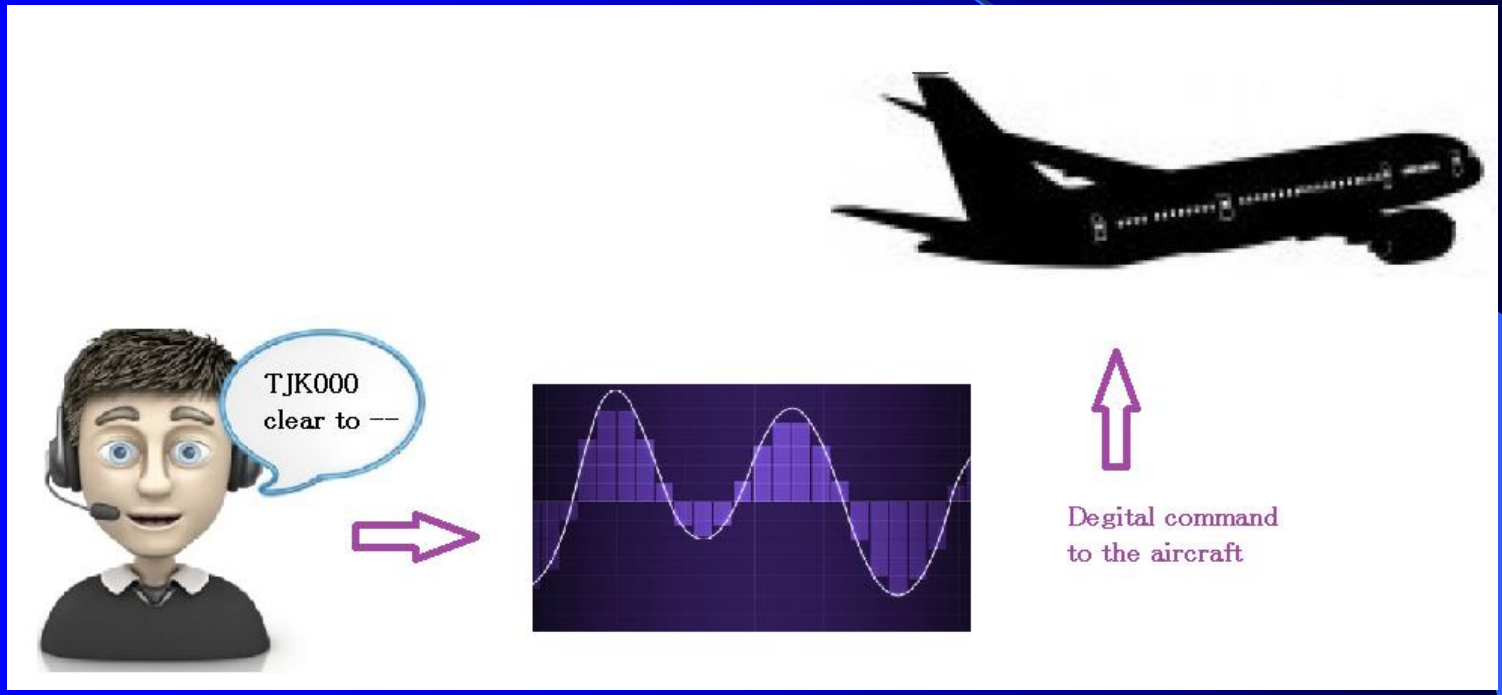
Screen Size and Projection Distance

Tower Simulator needs.. (2)



Tower simulator needs many helping hands.

Some solutions.(1)



Use voice recognition.

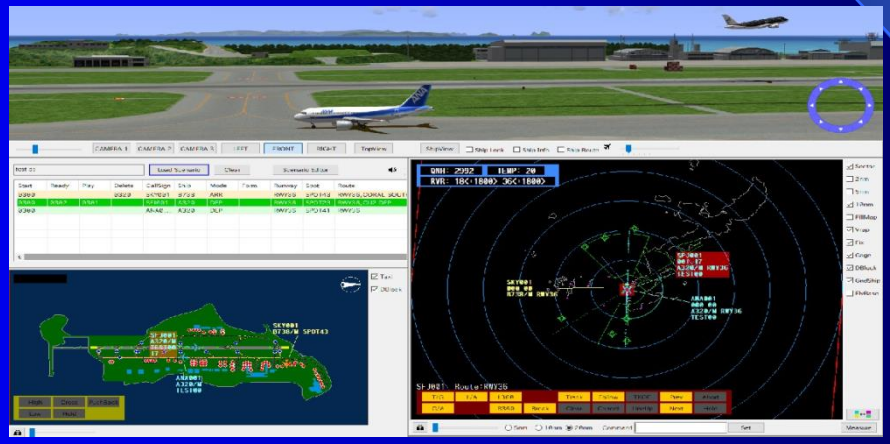
Some solutions.(2)

Virtual reality.

Some solutions.(3)

Artificial intelligence (AI) is intelligence exhibited by machines. In computer science, the field of AI research defines itself as the study of "intelligent agents": any device that perceives its environment and takes actions that maximize its chance of success at some goal. Colloquially, the term "artificial intelligence" is applied when a machine mimics "cognitive" functions that humans associate with other human minds, such as "learning" and "problem solving".

Basic Data and Information for scenario making using



3D Tower Simulator

Documents for Coordination

1. LOA
2. Rules on Coordination Procedures
3. Memorandum

Framework of LOA (1)

- PURPOSE: To specify air traffic control and coordination procedures to be applied between Facility AAA and BBB.
- 2. SCOPE.
- a. This agreement is supplementary to the procedures contained in the air traffic control manuals of respective agencies and pertinent ICAO documents.
- b. Revision to this agreement shall be made only with the concurrence of both parties.
- 3. GENERAL PROCEDURES.
- a. The procedures outlined in this document shall be followed, unless verbal coordination is conducted clearly defining lines of responsibility and both parties are in agreement.
- b. Interfaculty coordination with the appropriate controller is considered sufficient to meet all coordination requirements as dictated in this agreement.
- c. The transfer-of-control shall be effective at the airspace boundary.

Framework of LOA (2)

- d. Flight Plan messages on departures from aerodromes located within AAA airspace which will enter BBB's airspace, shall be forwarded to BBB's Flight Information Processing System.
- e. The transferring facility shall forward items (1) through (6), listed below, to the adjacent facility for all departures originating from the transferring facility's area of jurisdiction and for all overflights transiting the receiving facility's airspace. Forward this information at least fifteen 15 minutes prior to aircraft reaching the airspace boundary, or as soon as practicable after departing or receiving an air-filed flight plan.

How to incorporate coordination into tower training with simulator?

Framework of LOA (3)

- (1) Aircraft identification;
- (2) Route;
- (3) Altitude assigned, including restrictions;
- (4) Actual time of departure (ATD) [if applicable];
- (5) Estimated time of arrival (ETA) for transfer of control point (TCP) [if applicable];
- (6) Any other pertinent information;
- (7) Type of aircraft; and
- (8) Beacon code assigned.

How to incorporate coordination into tower training with simulator?

Documents for ATC procedures

1. ATC Operation Procedures
2. ATC Rules on Coordination Procedures
3. Notices

Coordination with related sections

- Means of coordination and information
  - * Tele phone (**) ***-***
  - * Hotline
  - *LAND Line
    1. Airport･Airspace capacity
    2. Weather condition, forecast etc.
    3. Alternative routes
    4. Airport equipment Maintenance
    5. Request from Airlines
    6. Emergency and other abnormalities

How to incorporate coordination into tower training with simulator?

Documents for Training

1. Detailed ATC Special Training Manual
2. (ATC Training Progress Reports)
3. Notices
4. TWR simulator Operation Manual

Basic Statistic on Airport Operation

1. Aircraft Movements
2. Delay Information
3. Hazard Map
4. Weather Characteristics
5. Aircraft Operation Information

1. Aircraft Movement

(Traffic Accumulation in the system)

1240	2	*ACA001	*JAL408										
1244	3	*ACA001	*JAL408	*NCA133									
1248	5	*ACA001	*JAL408	*NCA133	*ANA009	*DLH710							
1252	6	*ACA001	*JAL408	*NCA133	*ANA009	*DLH710	*JAL47						
1256	8	*ACA001	*JAL408	*NCA133	*ANA009	*DLH710	*JAL47	*VIR900	*COA7				
1300	10	*ACA001	*JAL408	*NCA133	*ANA009	*DLH710	*JAL47	*VIR900	*COA7	*JAL412	*JAL1		
1304	12	*ACA001	*JAL408	*NCA133	*ANA009	*DLH710	*JAL47	*VIR900	*COA7	*JAL412	*JAL1	*AFR274	*DAL25
1308	11	*ACA001	*JAL408	*ANA009	*JAL47	*VIR900	*COA7	*JAL412	*JAL1	*AFR274	*DAL25	*SAS983	
1312	11	*ACA001	*ANA009	*JAL47	*VIR900	*COA7	*JAL412	*JAL1	*AFR274	*DAL25	*SAS983	*UAL875	
1316	11	*ACA001	*JAL47	*COA7	*JAL412	*JAL1	*AFR274	*DAL25	*SAS983	*UAL875	*NWA901	*ANA202	
1320	11	*COA7	*JAL412	*JAL1	*AFR274	*DAL25	*SAS983	*UAL875	*NWA901	*ANA202	*SIA11	*AZA786	
1324	12	*JAL412	*JAL1	*AFR274	*DAL25	*SAS983	*UAL875	*NWA901	*ANA202	*SIA11	*AZA786	*NWA17	*ANA208
1328	11	*JAL1	*DAL25	*SAS983	*UAL875	*NWA901	*ANA202	*SIA11	*AZA786	*NWA17	*ANA208	*ANA46	
1332	10	*SAS983	*UAL875	*NWA901	*ANA202	*SIA11	*AZA786	*NWA17	*ANA208	*ANA46	*SWR168		
1336	8	*NWA901	*ANA202	*SIA11	*AZA786	*NWA17	*ANA208	*ANA46	*SWR168				
1340	7	*NWA901	*SIA11	*AZA786	*NWA17	*ANA208	*ANA46	*SWR168					
1344	5	*SIA11	*NWA17	*ANA208	*ANA46	*SWR168							
1348	3	*NWA17	*ANA46	*SWR168									
1352	1	*SWR168											

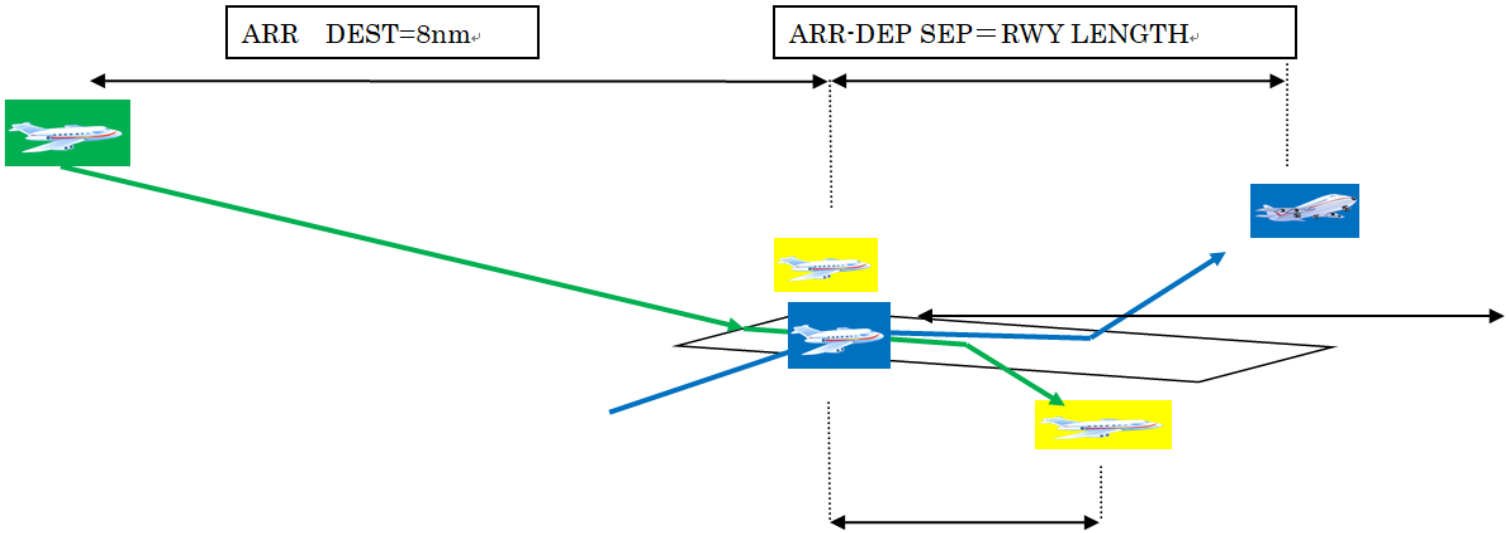
1. Aircraft Movement

(Time Table)

Departure from the international airports of Tajikistan						
Flight number	Aircraft	Departure airport	Departure time	Arrival airport	Arrival time	Days of operation
7J 105	B-733	Dushanbe	10:40	Tehran	12:10	Sunday
7J 113	B-752	Dushanbe	12:30	Urumqi	18:30	Thursday
7J 117	B-733	Dushanbe	10:30	Delhi	14:00	Friday
7J 627	B-752	Dushanbe	19:00	Moscow/Domodedovo	21:30	Mo., Tu., Fr., Su.
7J 629	B-752	Dushanbe	21:25	Moscow/Domodedovo	23:55	We., Th., Sat.
7J 4801	B-734	Dushanbe	20:50	Ekaterinburg	00:20+	Friday
7J 4805	B-733	Dushanbe	19:40	Surgut	23:40	Sunday
7J 4849	B-733	Dushanbe	11:00	Bishkek	13:30	Wednesday
7J 4851	B-752	Dushanbe	08:15	St. Petersburg	11:45	Saturday
7J 4863	B-734	Dushanbe	22:30	Novosibirsk	03:00+	Saturday
7J 4897	B-733	Dushanbe	07:00	Almati	09:40+	Thursday
7J 645	B-734	Khujand	19:00	Moscow/Domodedovo	21:30	Tu., Th., Sa.
7J 647	B-734	Khujand	21:25	Moscow/Domodedovo	23:55	Sunday
7J 4911	B-734	Khujand	08:30	Surgut	12:30	Wednesday
7J 4929	B-734	Khujand	08:30	Novosibirsk	13:05	Tuesday
7J 4701	B-734	Kurgan-tube	15:00	Moscow/Domodedovo	19:00	Tu., Th., Su.
Arrival to the international airports of Tajikistan						
Flight number	Aircraft	Departure airport	Departure time	Arrival airport	Arrival time	Days of operation
7J 106	B-733	Tehran	13:30	Dushanbe	17:30	Sunday
7J 114	B-752	Urumqi	20:25	Dushanbe	20:00	Thursday
7J 118	B-733	Delhi	15:00	Dushanbe	17:00	Friday
7J 628	B-752	Moscow/Domodedovo	23:00	Dushanbe	05:05+	Mo., Tu., Fr., Su.
7J 630	B-752	Moscow/Domodedovo	01:30+	Dushanbe	07:30	Th., Fr., Su.
7J 4802	B-734	Ekaterinburg	02:10	Dushanbe	05:40	Saturday
7J 4806	B-733	Surgut	03:40+	Dushanbe	08:20	Monday
7J 4850	B-733	Bishkek	15:00	Dushanbe	15:30	Wednesday
7J 4852	B-752	St. Petersburg	13:15	Dushanbe	20:15	Saturday
7J 4864	B-734	Novosibirsk	04:30	Dushanbe	06:30	Sunday
7J 4898	B-733	Almati	11:00	Dushanbe	12:00	Thursday
7J 646	B-734	Moscow/Domodedovo	23:00	Khujand	05:05	Tu., Th., Sa.
7J 648	B-734	Moscow/Domodedovo	01:30+	Khujand	07:30	Monday
7J 4912	B-734	Surgut	16:30	Khujand	20:30	Wednesday
7J 4930	B-734	Novosibirsk	14:35	Khujand	17:00	Tuesday
7J 4702	B-734	Moscow/Domodedovo	21:00	Kurgan-tube	03:30+	Tu., Th., Su.

Aircraft Movement

ROT(1)



①8NM-LANDING	②DEPARTURE	③ARRIVAL
MIN=183	MIN=45	MIN=77
MAX=232	MAX=65	MAX=158
AVR=200	AVR=54	AVR=105
STD=9.4	STD=3.1	STD=14.9

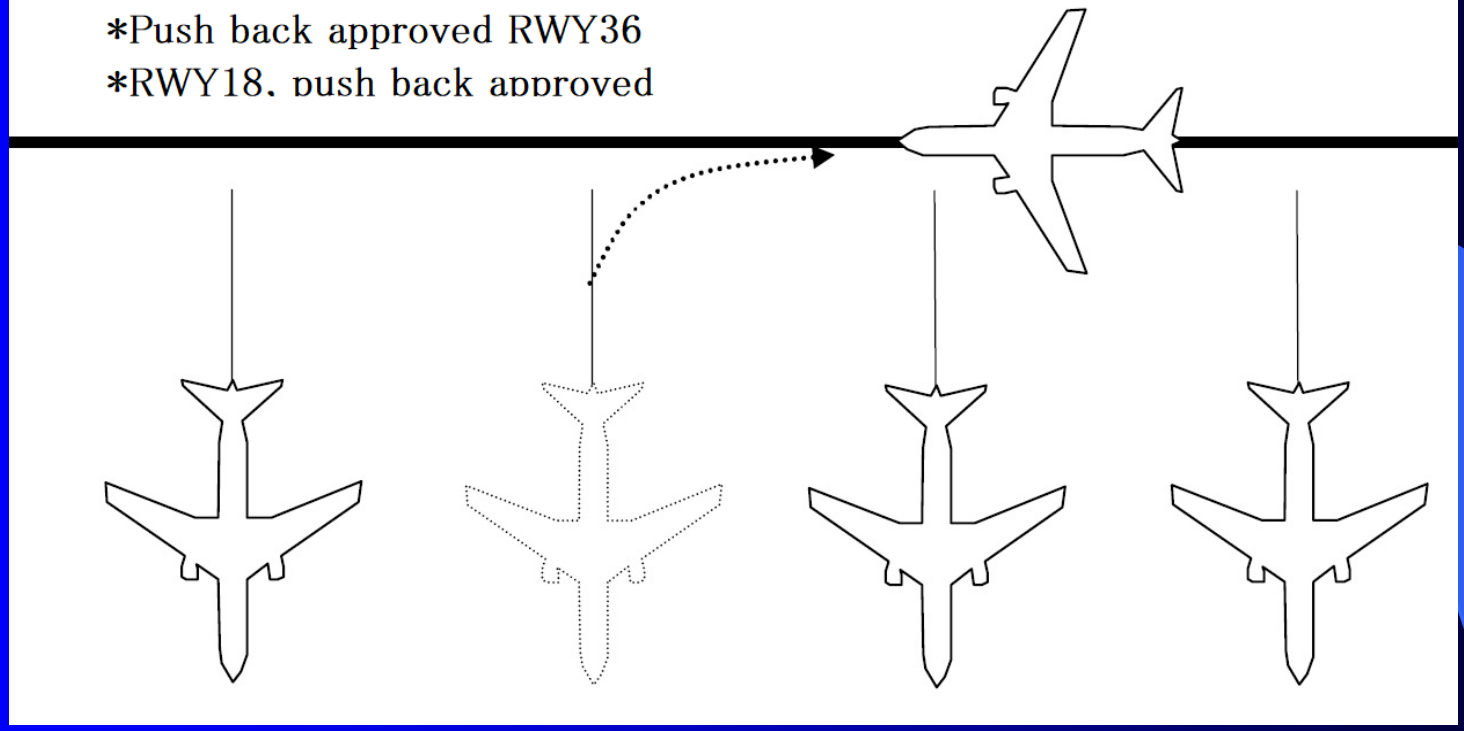
Aircraft Movement

Push Back

Normal Push Back distannce is about one spot distance (75m,AGS rule)

*Push back approved RWY36

*RWY18, push back approved



Aircraft Movement

Push Back

	Push-back Direction (Facing / Heading)			
	East	West	South	North
				
SPOT	J 7 TWY	J 7 TWY	R 4 TWY	—
51	×	◎	◎	—
52	◎ PLFWD	◎	◎	—
53	◎ PLFWD *	◎	◎	—
54	○	◎	◎	—
55	○ *	×	◎	—
	J 6 TWY	J 6 TWY	R 3 TWY	R 3 TWY
56	◎ PLFWD	×	—	◎
57	×	◎	—	◎
58	×	◎	—	◎
59	×	◎	×	○
60 / 81	×	◎	×	○
	—	Z TWY	R2 / R3 TWY	R2 / R3 TWY
61 / 82	—	◎	○	○
62	—	◎	○	○
63 / 83	—	◎	○	○
	J 4 TWY	J 4 TWY	R 2 TWY	R 2 TWY
64 / 84	—	◎	○	◎ PLFWD
65	—	◎	○	×
66	×	◎	◎	—
67L	×	◎	◎	—
67	×	◎	◎	—
67R	×	◎	◎	—
68	◎ PLFWD	×	◎	—
	X TWY	X TWY	—	X TWY
69	○	×	—	×
70	×	○	—	×

◎ :Stop position is specified
○ :Normal Push-back
× :No Push-back
PLFWD Push-back then Pull forward
* :Pull forward not required for B763 or smaller
* :Pull forward Possible

Red: Middle(B763 or smaller)
Green:Big(B773 or smaller)
Blue:Small(A321 or smaller)

T/O Time Separation and Distance Separation

T/O Time Difference	Distance Along Route	Direct Distance
80.0	3.0	2.7
85.0	3.6	2.8
88.3	3.3	2.8
88.4	3.4	2.6
89.8	4.0	3.3
89.8	3.6	3.0
93.6	3.8	2.9
94.8	4.2	3.2
95.1	3.8	2.9
95.2	3.8	2.8
95.7	3.7	3.1
96.6	3.8	3.0
97.0	4.3	3.1
97.0	4.0	3.1
97.1	4.3	3.4
100.1	4.0	3.1
101.3	4.0	2.9
104.4	4.4	3.2
104.5	4.5	3.4
105.6	4.3	3.4
105.6	4.5	3.5
107.1	4.4	3.2
107.9	4.1	2.8
107.9	5.1	3.6
108.0	4.2	3.3
108.5	4.8	3.4
110.3	4.7	3.6
111.5	4.5	3.4
112.1	4.5	2.4
115.3	5.5	3.1
116.3	7.8	3.2
119.9	5.1	2.6

Take Off Time Separation is 2minutes(120sec).

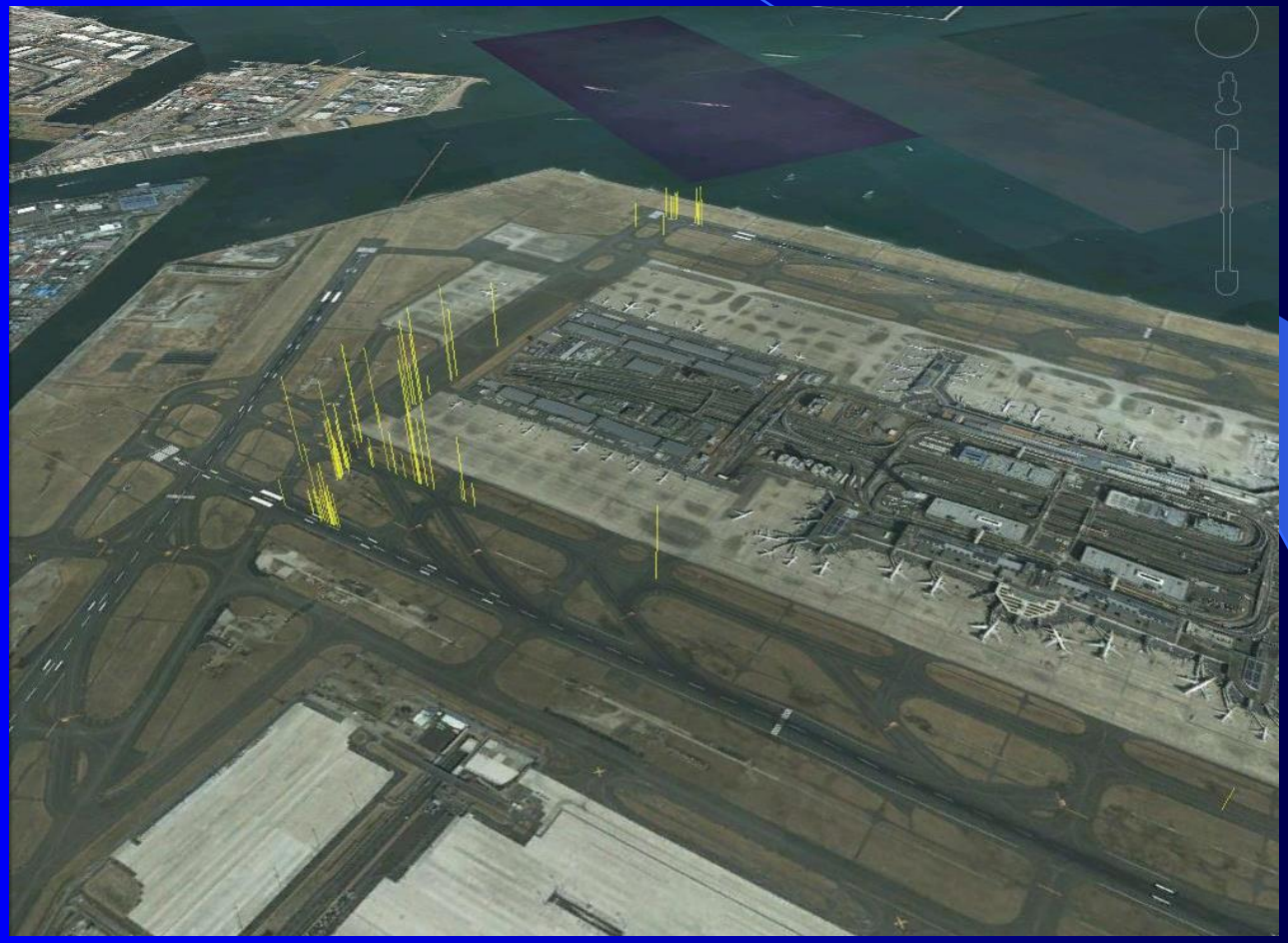
Radar Separation is 3NM.

2. Delay Information (1)

NARITA RWY DEP DELAY

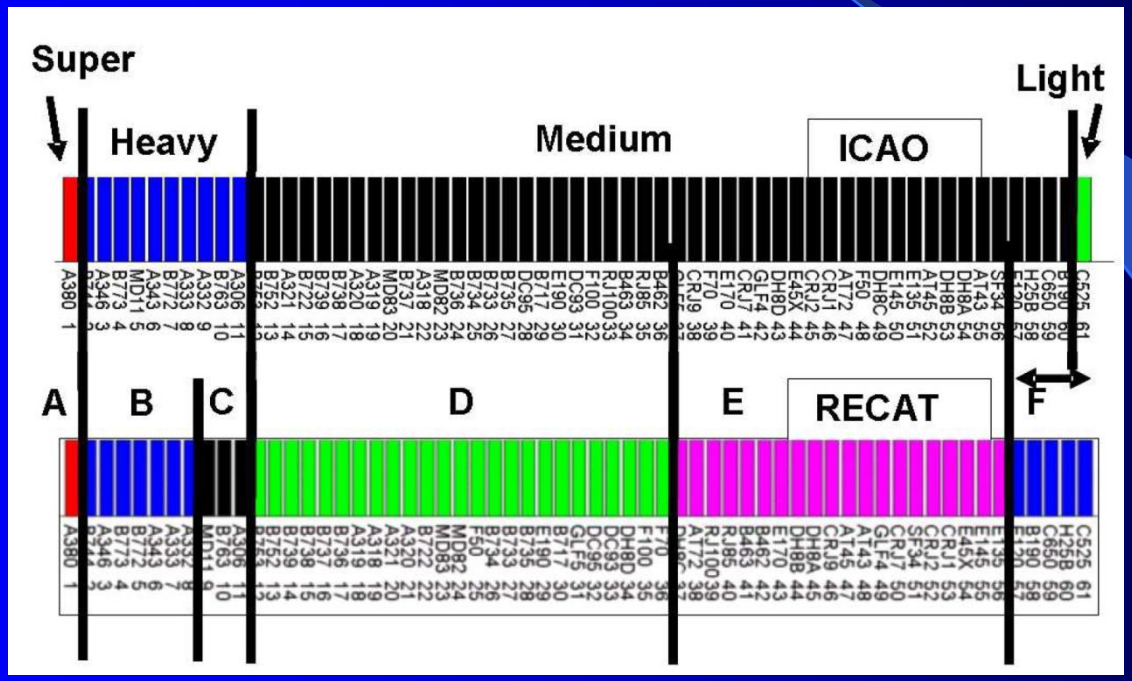
Delay Information (2)

HANEDA RWY DEP DELAY



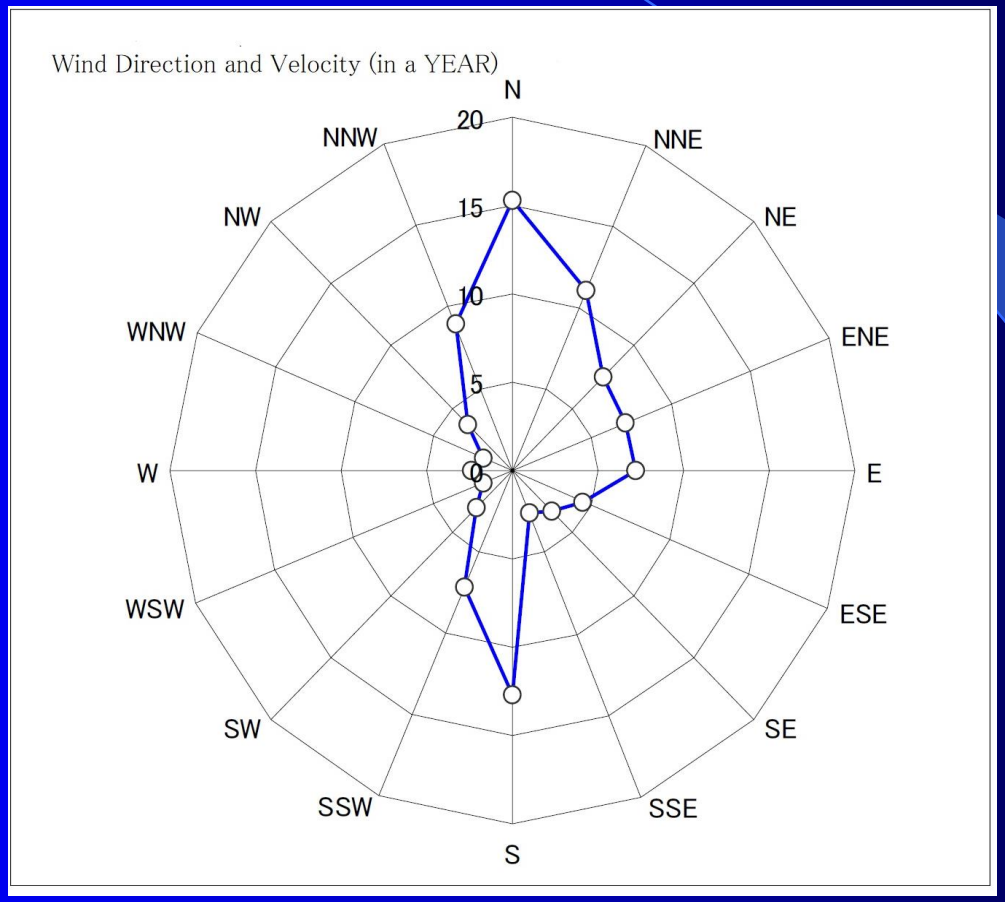
Delay Information (3)

RECAT



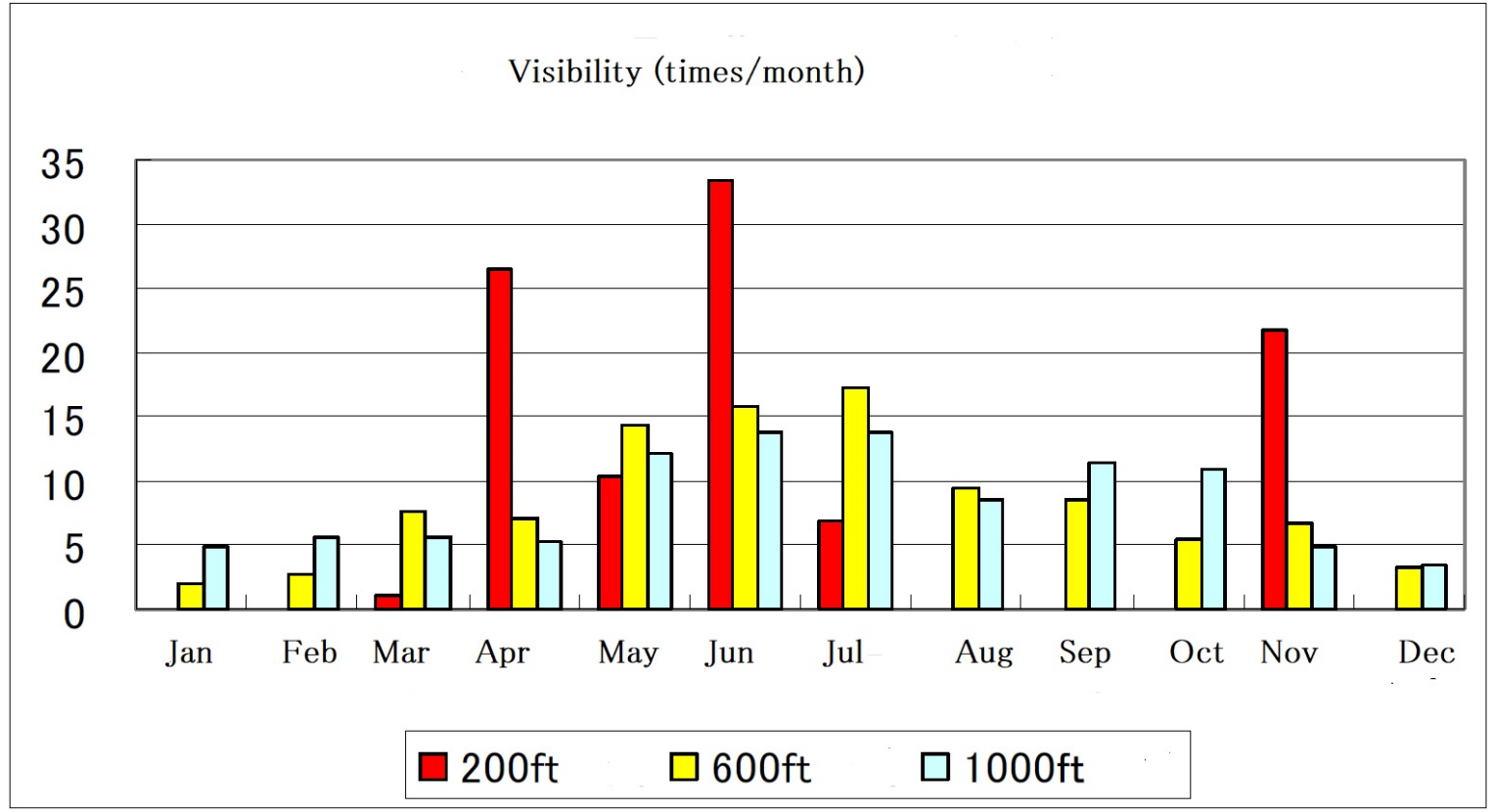
Weather Characteristics(1)

Wind Direction and Velocity



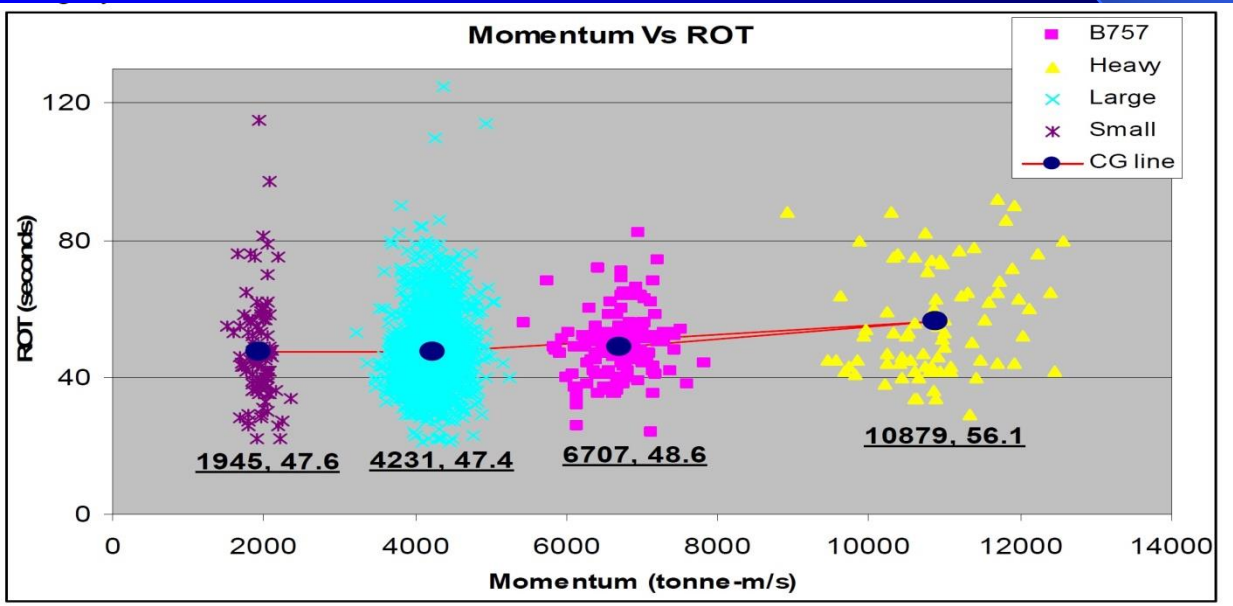
Weather Characteristics(2)

Visibility



Aircraft Performance ROT

The Runway Occupancy Time of an aircraft is a function of its weight and velocity, besides other factors like exit type and location, aircraft braking thrust etc.



ROT as a function of Momentum

Aircraft Performance Speed

(1) IAS (Indicated Air Space)
(2) CAS (Calibrated Air Speed)
(3) EAS (Equivalent Air Speed)
(4) TAS (True Air Speed)
(5) GS (Ground Speed).

Tower simulator uses IAS while ATC needs GS or time distance.

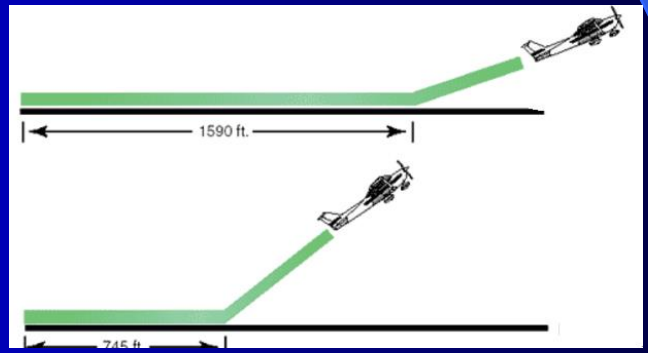
*IAS is the airspeed read directly from the airspeed indicator on an aircraft, driven by the pitot-static system. It uses the difference between total pressure and static pressure.

Aircraft Performance Wind

Strong heavy wind directly affects aircraft speeds. Tower simulator can effectively simulates winds effects. It even can simulates crosswind factor while landing

Aircraft Performance (Temperature)

The air density becomes sparse during the hot(summer) time. This affects directly to the take off performance. Tower simulator does not simulates this. So you have to devise the procedure to simulate the effects of the temperature .

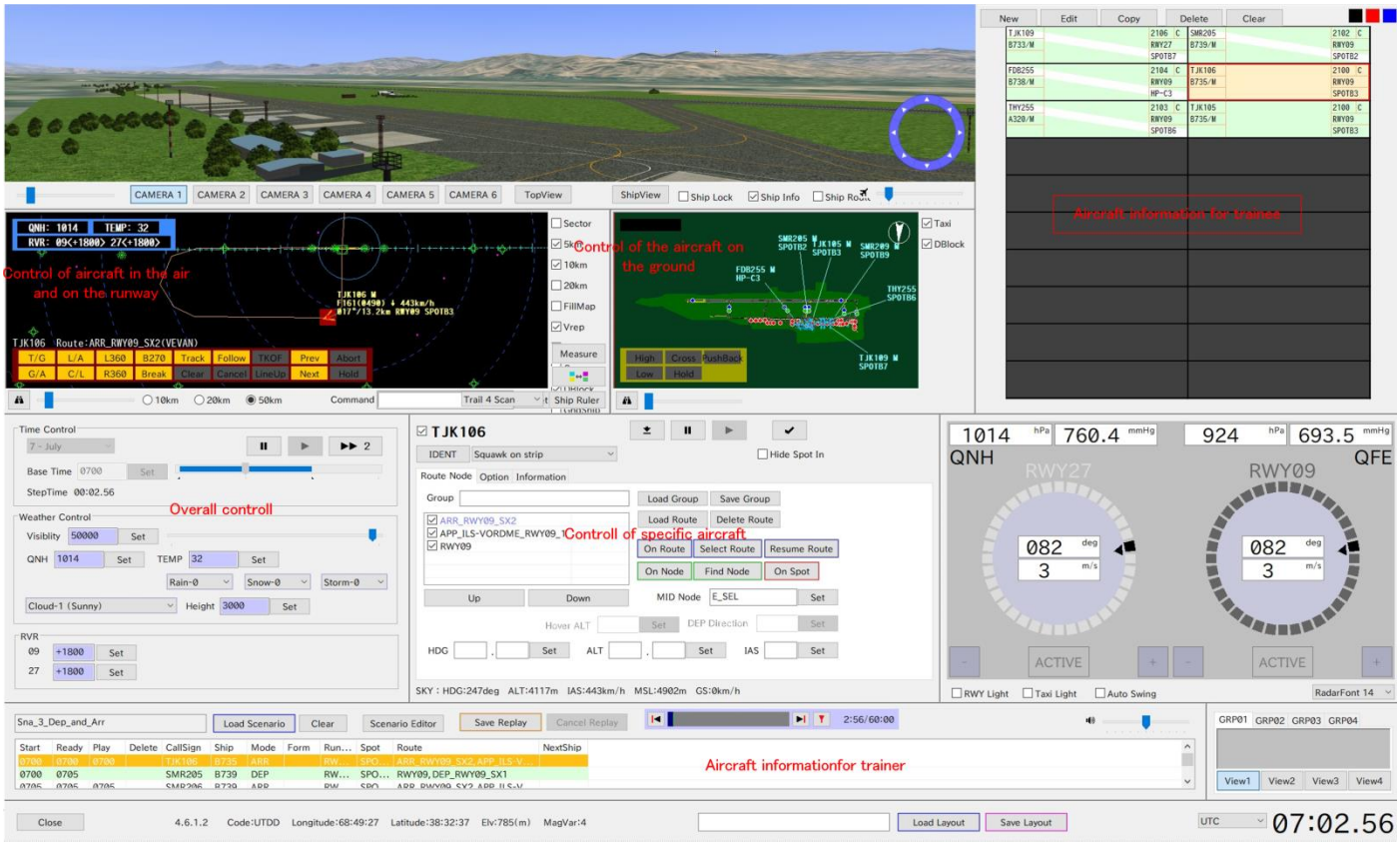


ATC Tower Simulator

ULANS

Scenario Editor HANDBOOK

Trainer Operation Console Functions



Aircraft　Manuver in the air

1. Initial aircraft manuver in the air is defined by values set in the scenario editor.

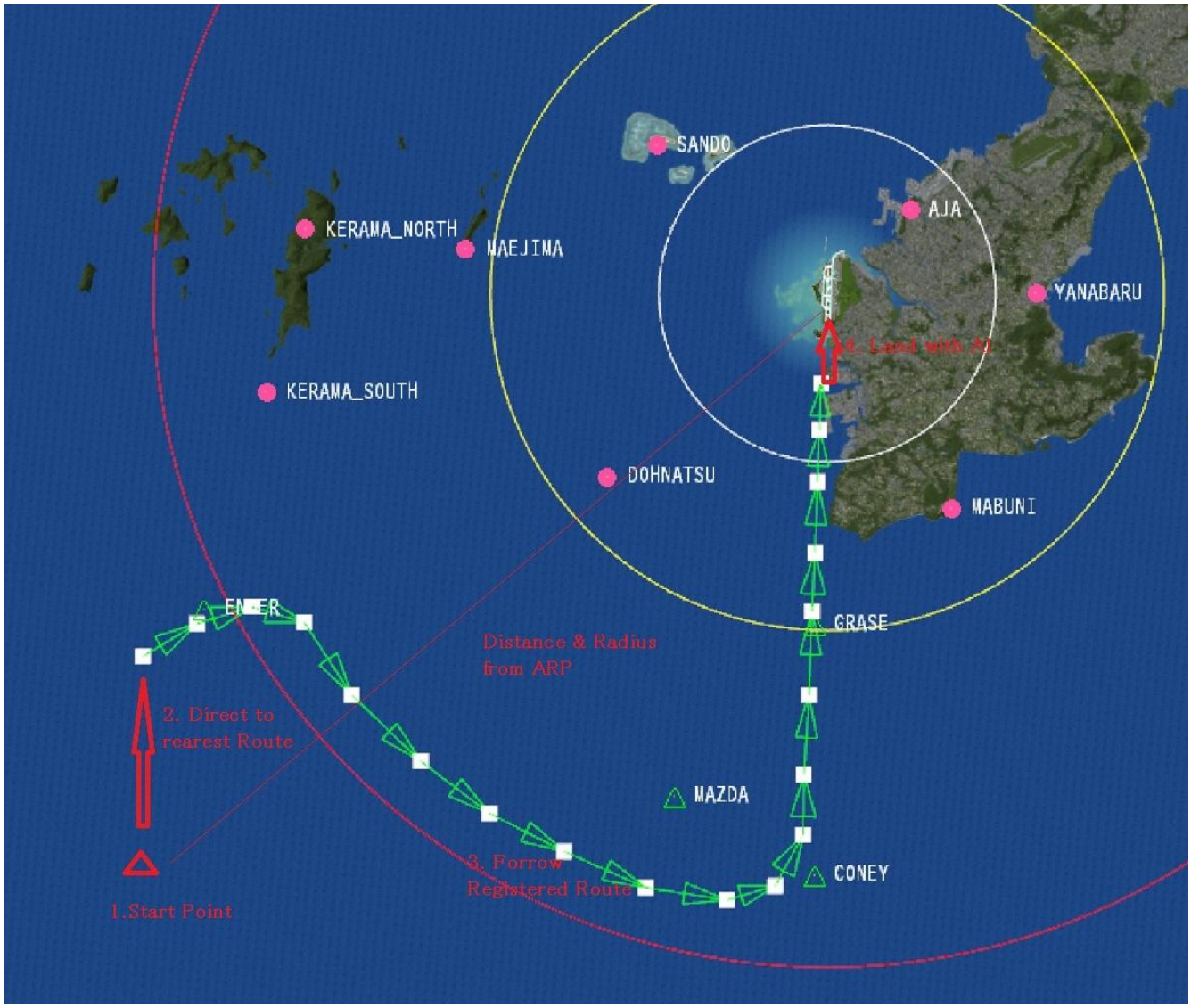
2. The aircraft is shown on the Radar console at the position specified by editor with altitude and speed.

3. From the position specified by editor aircrft flys along the route to the destination (usually final destination is specified spot in the airport).

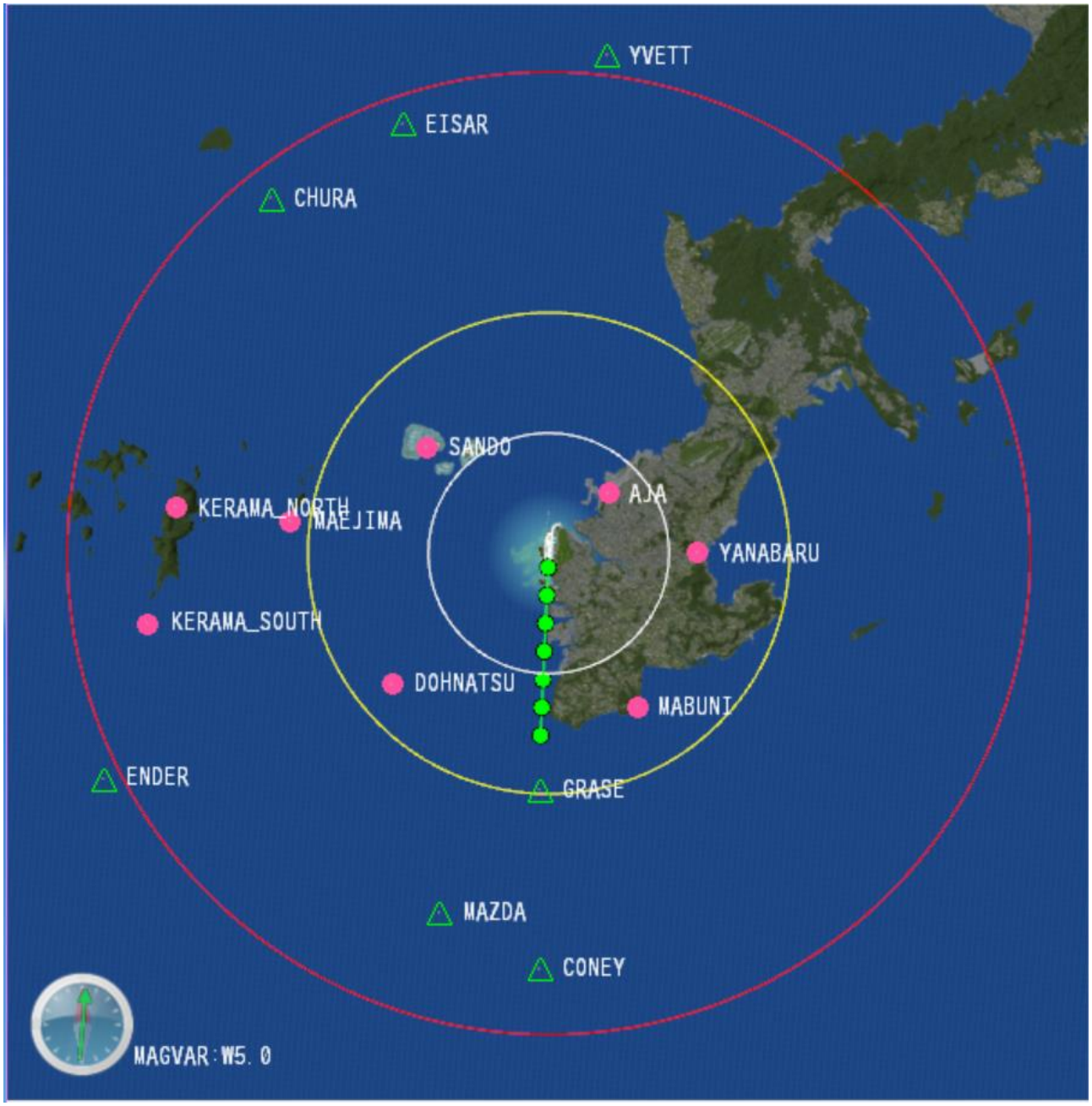
3. If the initial starting point is not, for instance, on the predetermined route the AI drives the aircraft to the nearest possible points on the route.

CORAL　SOUTH ARRIVAL

1. Initial Point is

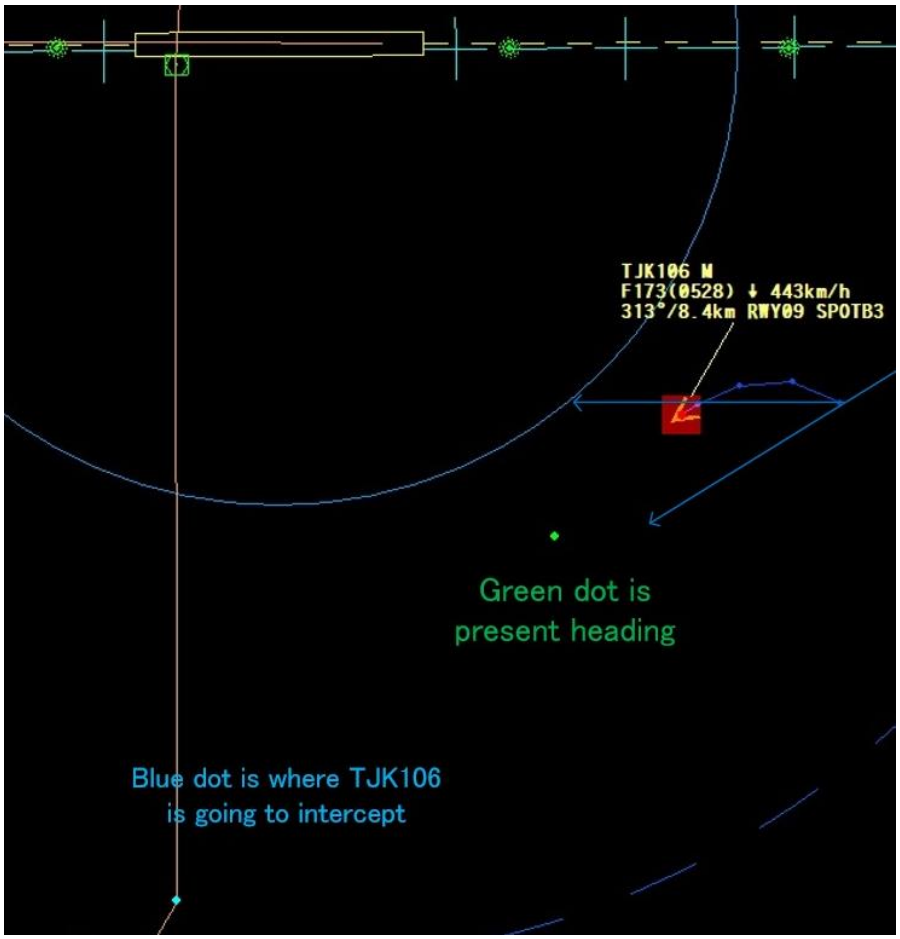


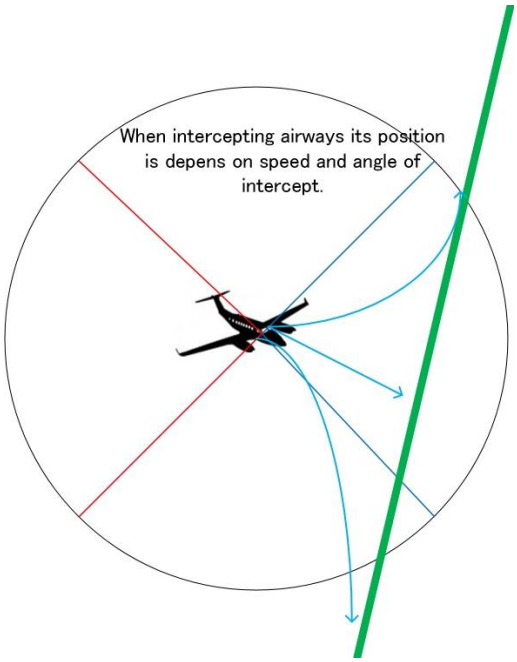
RWY36



1. You can show “fixes” and “visual reporting points” by route editor.
2. Registered route “CORAL SOUTH ARRIVAL ” is shown by loading “CORAL_SOUTH_ARR”.

Airway intercepting angle and speed





Aircraft　Manuver on the ground

AIRPORT FLAT MAP and NODEs

While on the ground aircraft movements is controlled by AI function and Nodes characteristics.

For instance landing aircraft clears runway when her speed is slow enough for the safe departure from the runway. She stops when she founds the other aircraft at the exit of her taxiway. After clearing conflicts, she commences taxi to her destination spots.

Each node has attributed particular characteristics.

On ground console you can steer the aircraft by clicking the route.

You can also use commands in the command bar.

[Visible(VB)] Used in this scenery. When not checked it is shown in filled black on the node editor, it could be for future use.

[Click(CL)] Green circle, at this node you can change moving directions by click.

[MidPoint(MD)] Light blue circle. Set at the midpoint of two nodes. At this node you can change moving directions by click.

[Runway(RW)] Blue circle. Set on the taxiway at Entry/Exit points to/from the runway.　At this node you can change moving directions by click.　In case of Node name and taxiway name matches, you can use in a command.

[Spot(SP)] Red circle on the screen

Push Back

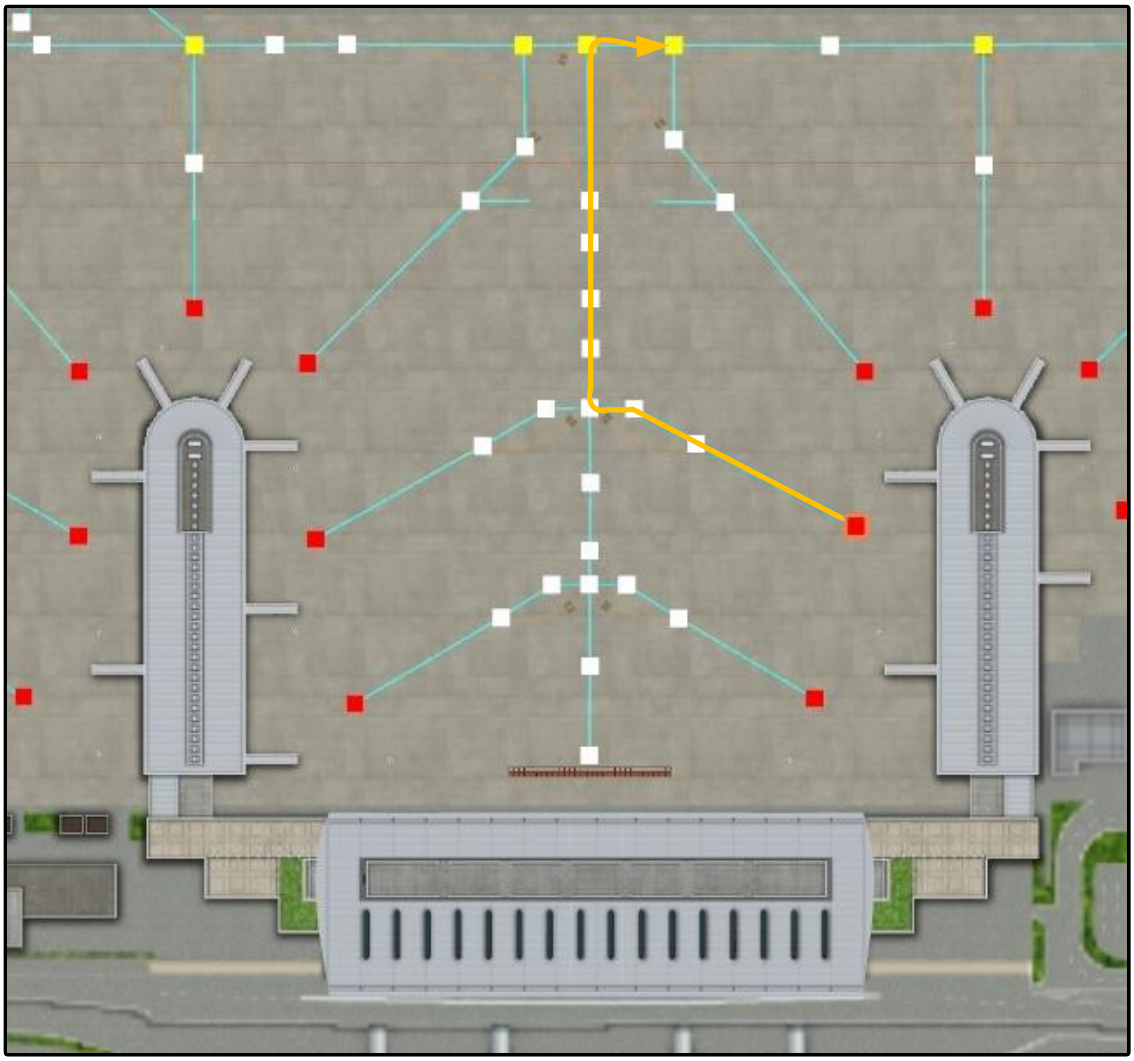
[SPOT(SP)] Red square.

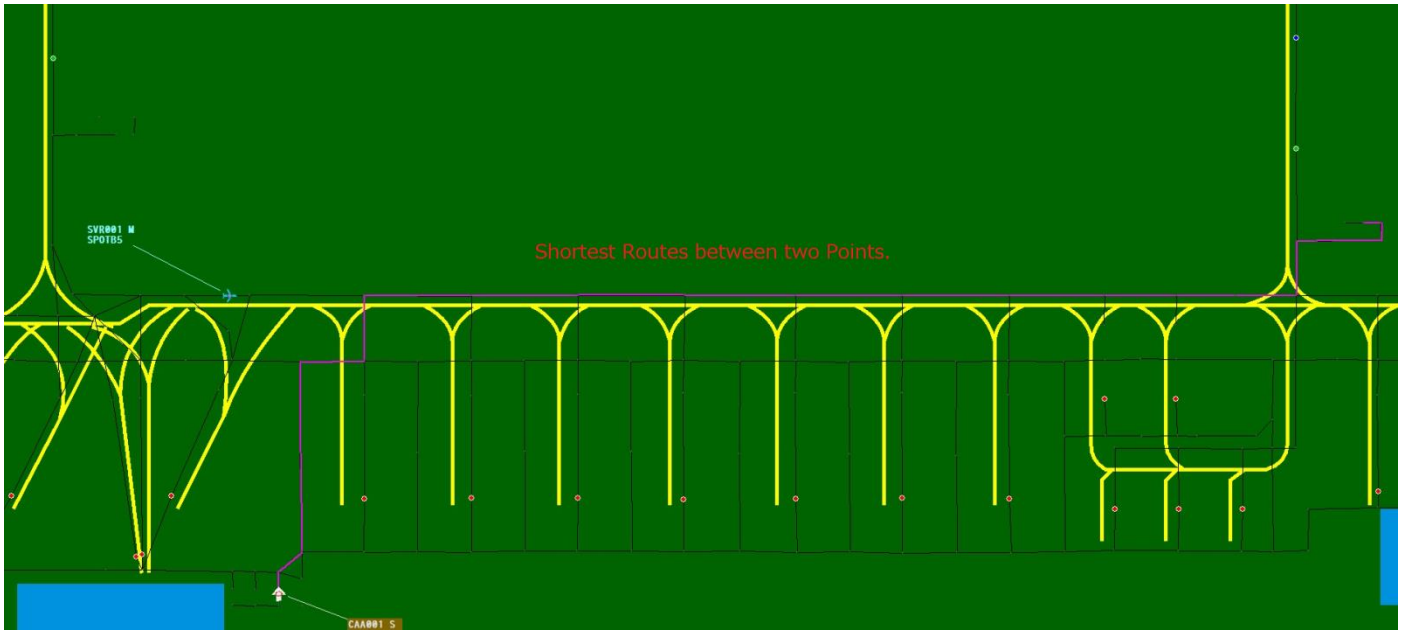
[Pushback Point(PP)]

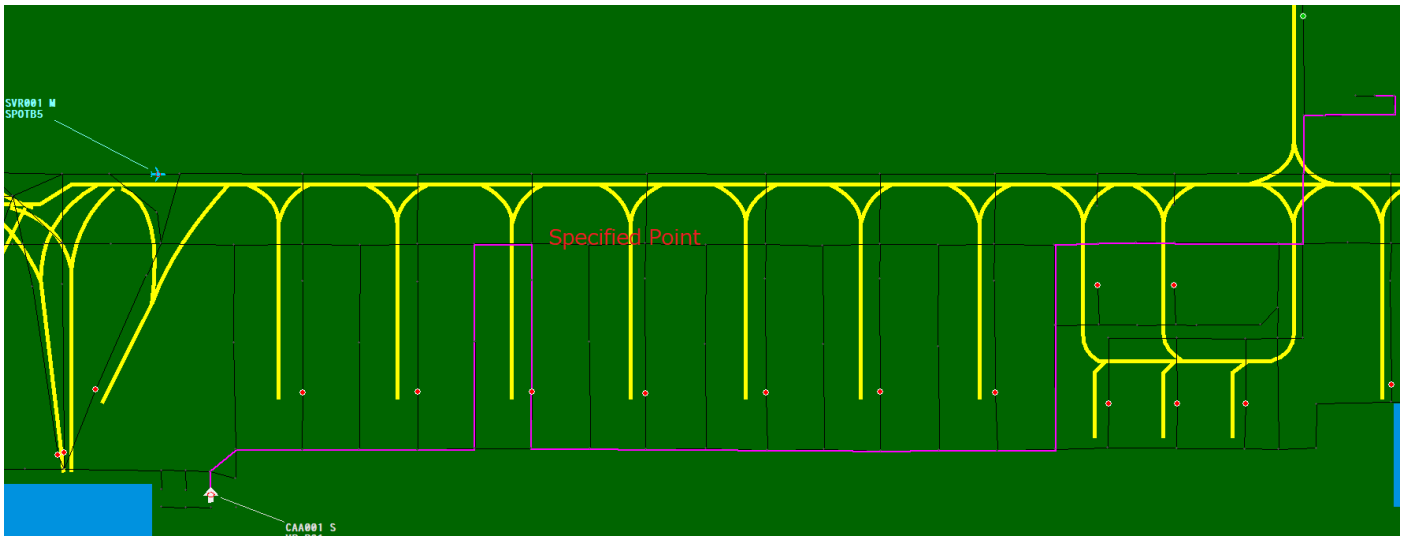
Push Back is done along the default routes.　At this node aircraft pushed back to face to taxi to the departure runway.

Push back is done along the nodes. Red square is a spot. Yellow is turning point. White squares are nodes in between.

PUSH-BACK







Function of Consoles

Displays

1. WINVIEW
2. WINSNA
3. System Console
4. WINCTRL
5. WINSHIP
6. WINRADAR
7. WINGROUND
8. WINPILOT
9. WINCONSOLE
10. WINPAD

Node Editor

1.System Console

Close 4.5.13 Code: ROAH Longitude127:38:45 Latitude 26:11:45 Elv13 MagVar-5

DEMO Load Layout Save Layout UTC 12:00:01

＊Ver. 4.5.13

[Close]

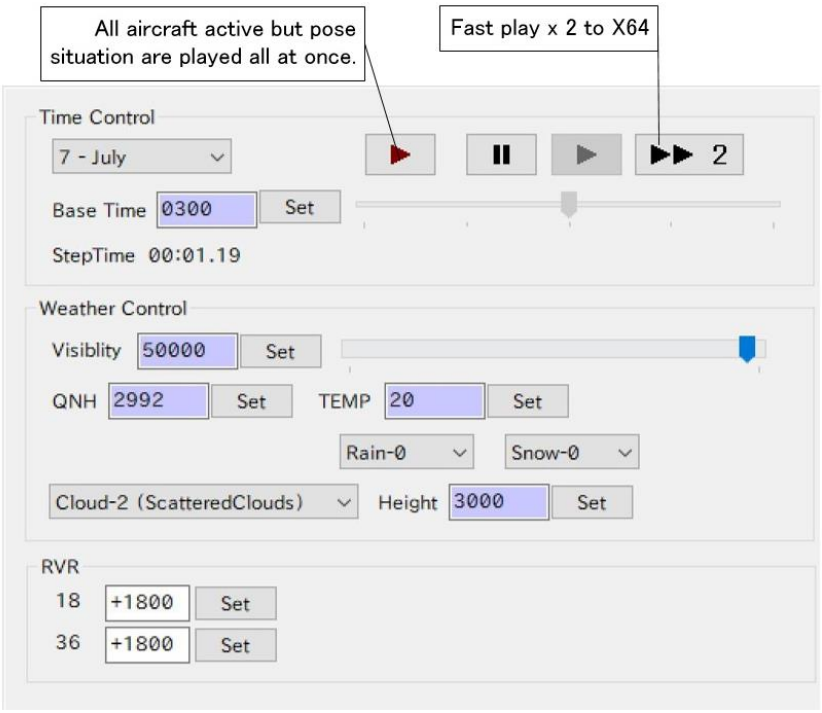
[Shutdown] 表示なし

[Load Layout]

[Save Layout]

2.Control Console

<Scenario Editor>---→aircraft tag click



Time control

Base Time/Set Displayed at System console.

Step time

Weather Control When weather conditioned by scenario background color is violet. Once reset manually it's background color become white.

Visibility

QNH

Temp/Set

Rain-0

Snow-0

Cloud-2 (Scattered Clouds) Height/Set

RVR

This value does not correlate with visibility at view console. When its value is cleared, RVR becomes not available at trainee's console.

3.View Console (WINVIEW)

CAMERA1/2/3 LEFT

FRONT

RIGHT

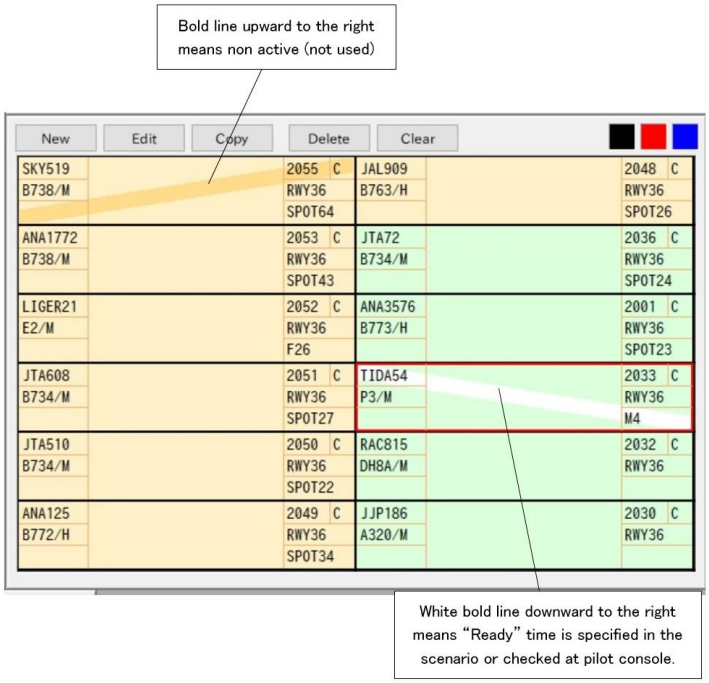
Top View

Ship View

Ship Route

4.Strip Console (WINSHIP)

<Scenario Editor>---→Strip Console



New

Edit

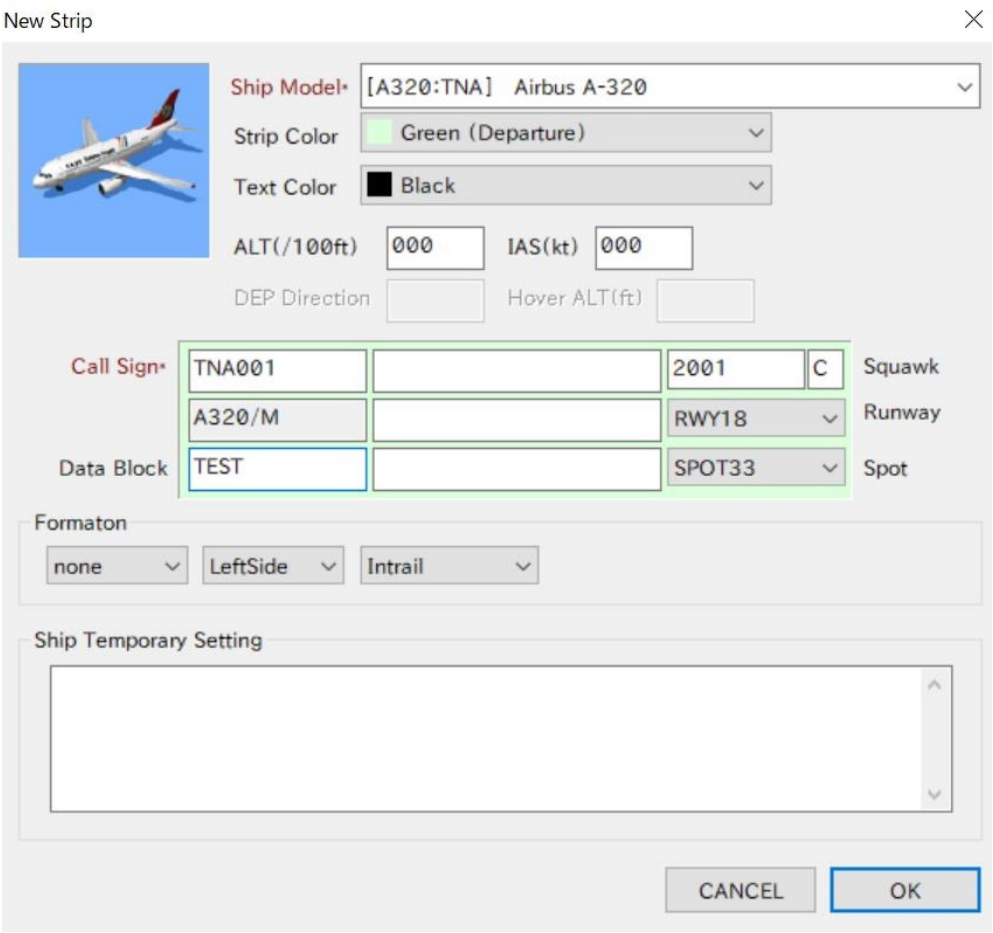
Copy

Delete

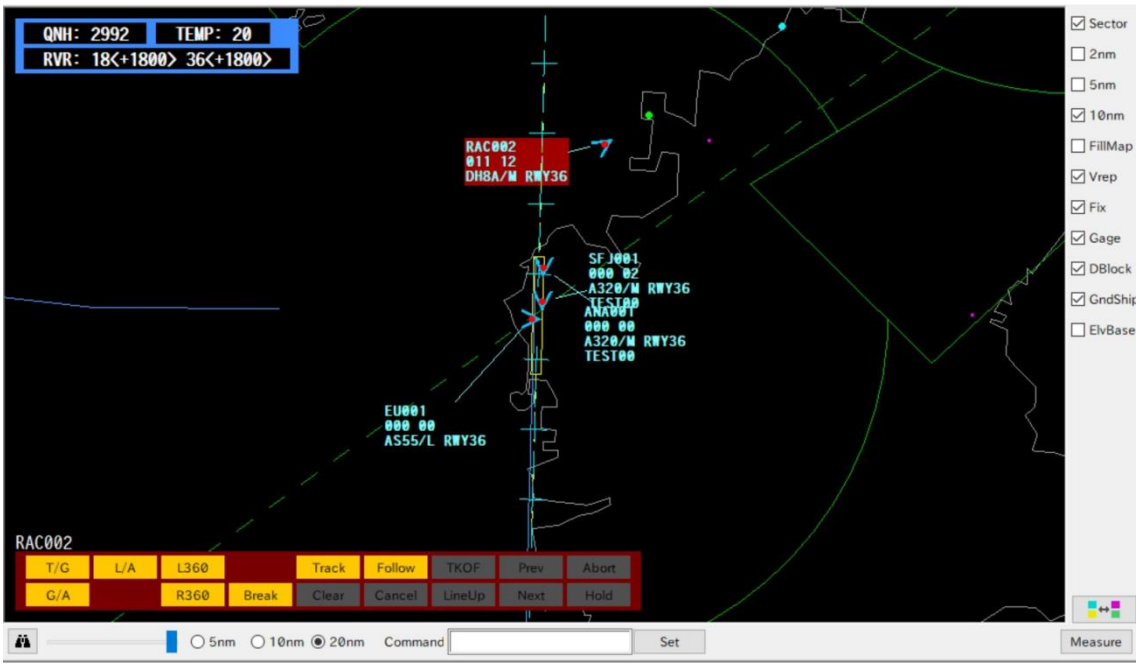
Clear All strips are cleared.

<Scenario Editor>---→(Strip) New

4-1.Registration Dialog of Aircraft



5. Radar Console (WINSHIP)



Command Button

[T/G]

[G/A]

[L/A]

[L360]

[R360]

[Break]

[Track]

[Clear]

[Follow]

[Cancel]

[TKOF]

[Prev/Next]

[LineUp]

[Abort]

[Hold]

Character Command Box

Character Command

Abbreviated Command

6.Ground Radar Console (WINGROUND)

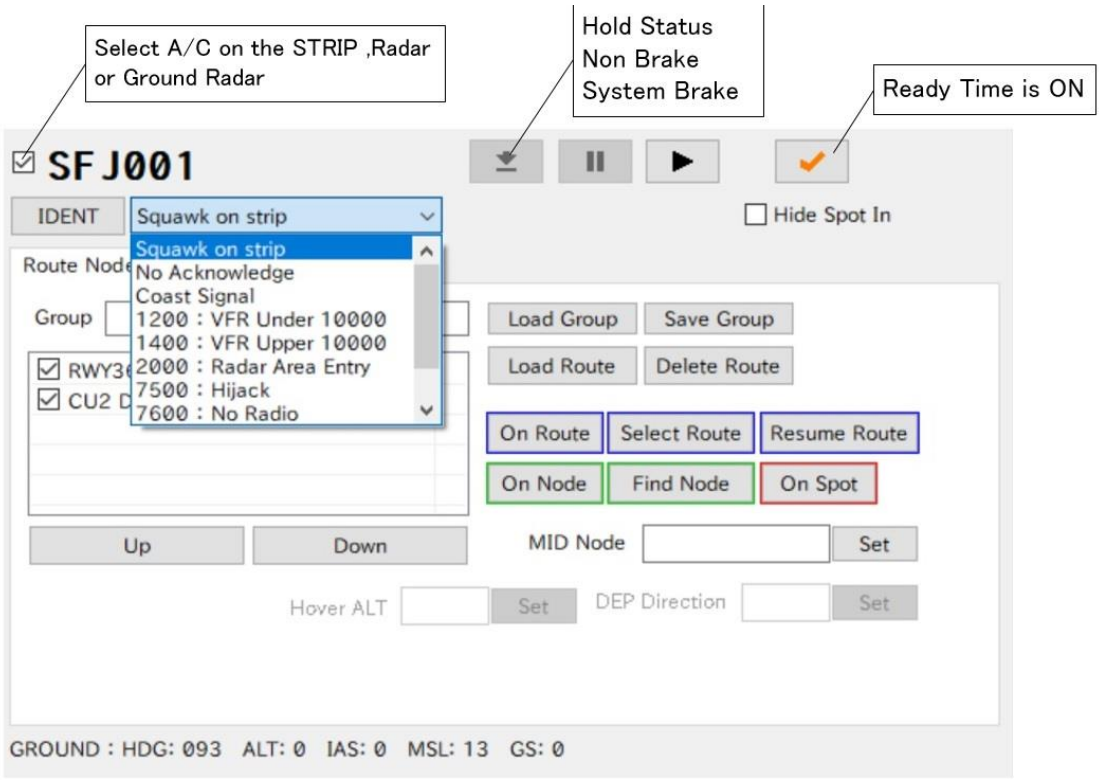
[PushBack]+[Default],[****],[****],[*****] Max 4

[Cross] Cross Runway, cancel HOLD specified at the NODE

[High]

[Slow]

7.Pilot Console (WINPILOT)



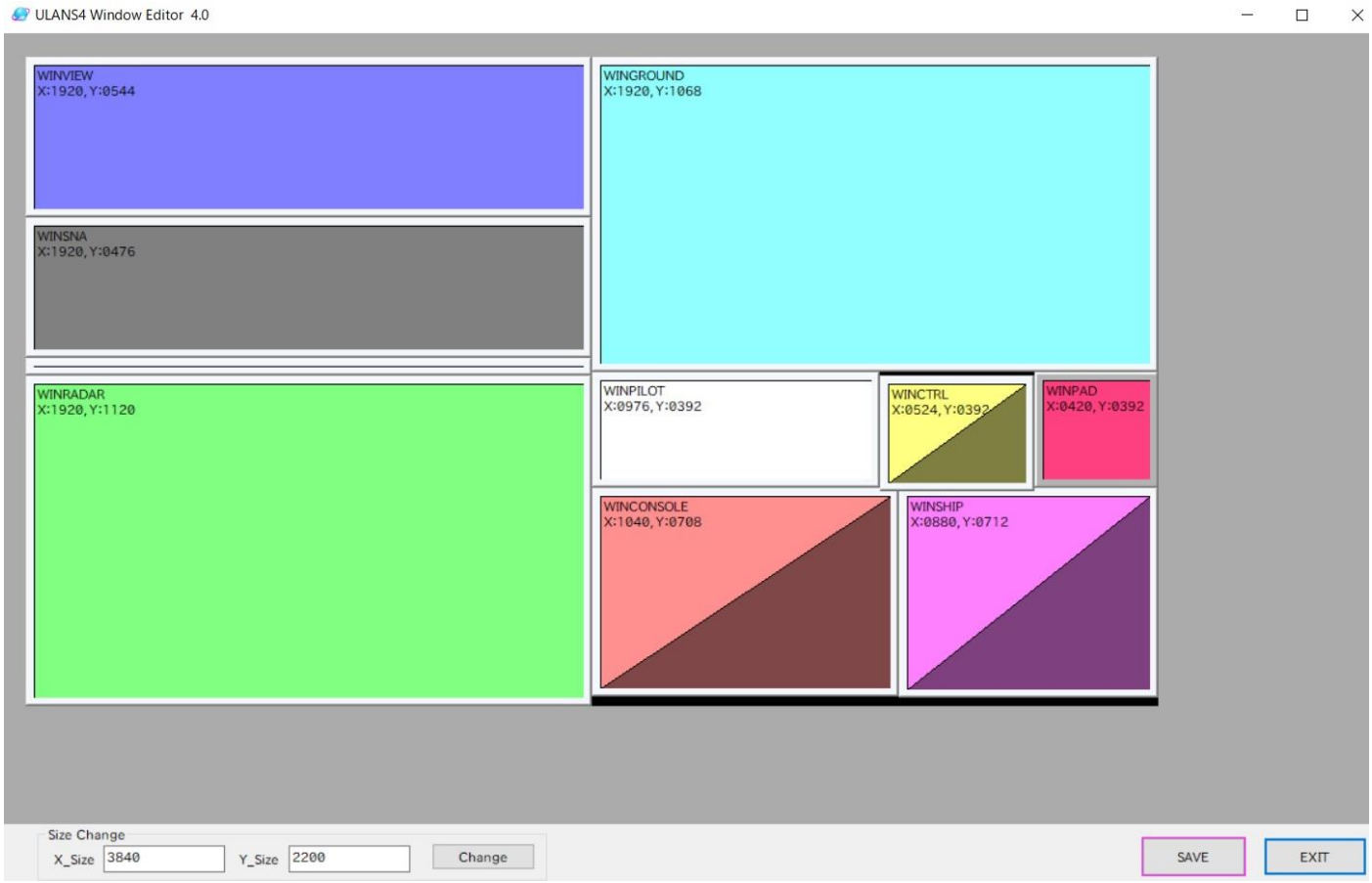
SFJ001

IDENT

Squawk on strip
Save Group
Load Route
Delete Route
UP/Down
[On Route]
[Select Route]
[Resume Route]
[On Node]
[Find Node]
[On Spot]
[ ] Hide Spot In When checked (default) the aircraft is kept on the screen even after engine cut off.
[Select Route]
[Resume Route]
<DEP Direction>
<Taxi Point>
*System brake can momentarily (10 seconds) be suspended.

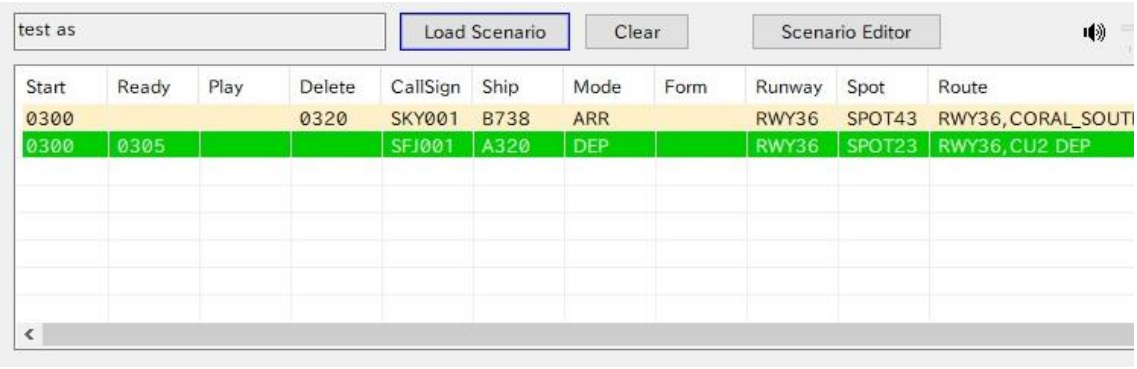
8.Config Console (WINCONSOLE)

9.Window Editor

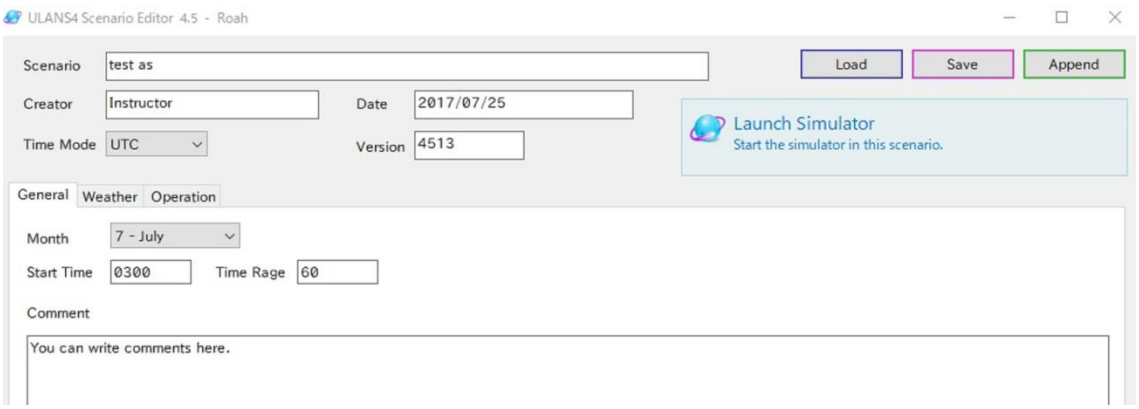


10.Scenario Console/Editor

1. Scenario Editor can be launched from Application Launcher or from Scenario console in the instructor's screen.



10-1 Scenario Name and General



Scenario

Creator

Date

Time Mode <UTC> <LOCAL>

Version

[LOAD] [SAVE][Append]

Launch Simulator

<Scenario Editor> <General>

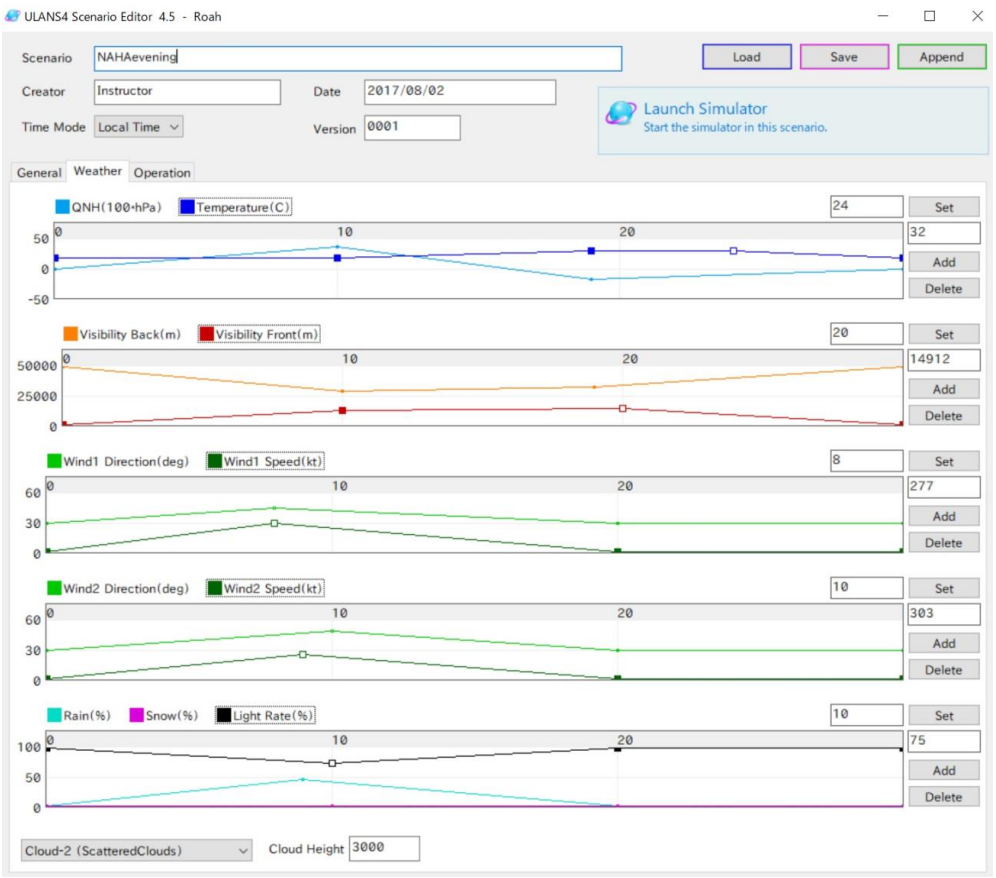
Month

Start Time

Time Range

Comment

10-2 Weather



QNH/Temperature

Visibility Back(m)/Visibility Front(m)

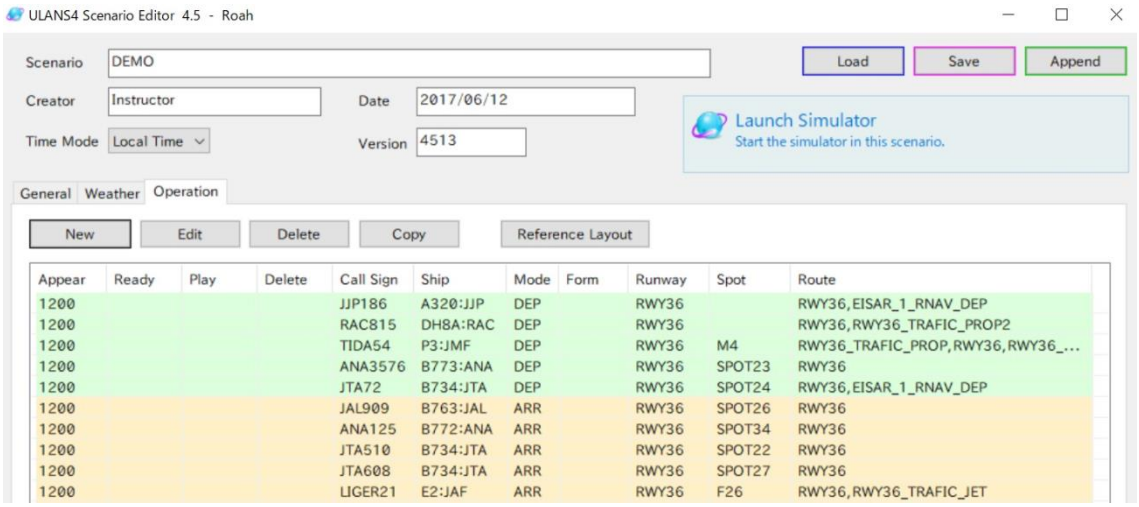
Wind1 Direction(deg)/ Wind1 Speed(kt)

Wind2 Direction(deg)/ Wind2 Speed(kt)

Rain(%) Snow(%) Light Rate(%)

Cloud-2 (Scattered Clouds)

10-3Operation



From scenario editor select <Operation>.

(Name Scenario, Date, Time mode etc,).

[New] [Edit] [Delete] [Copy] [Reference Layout]

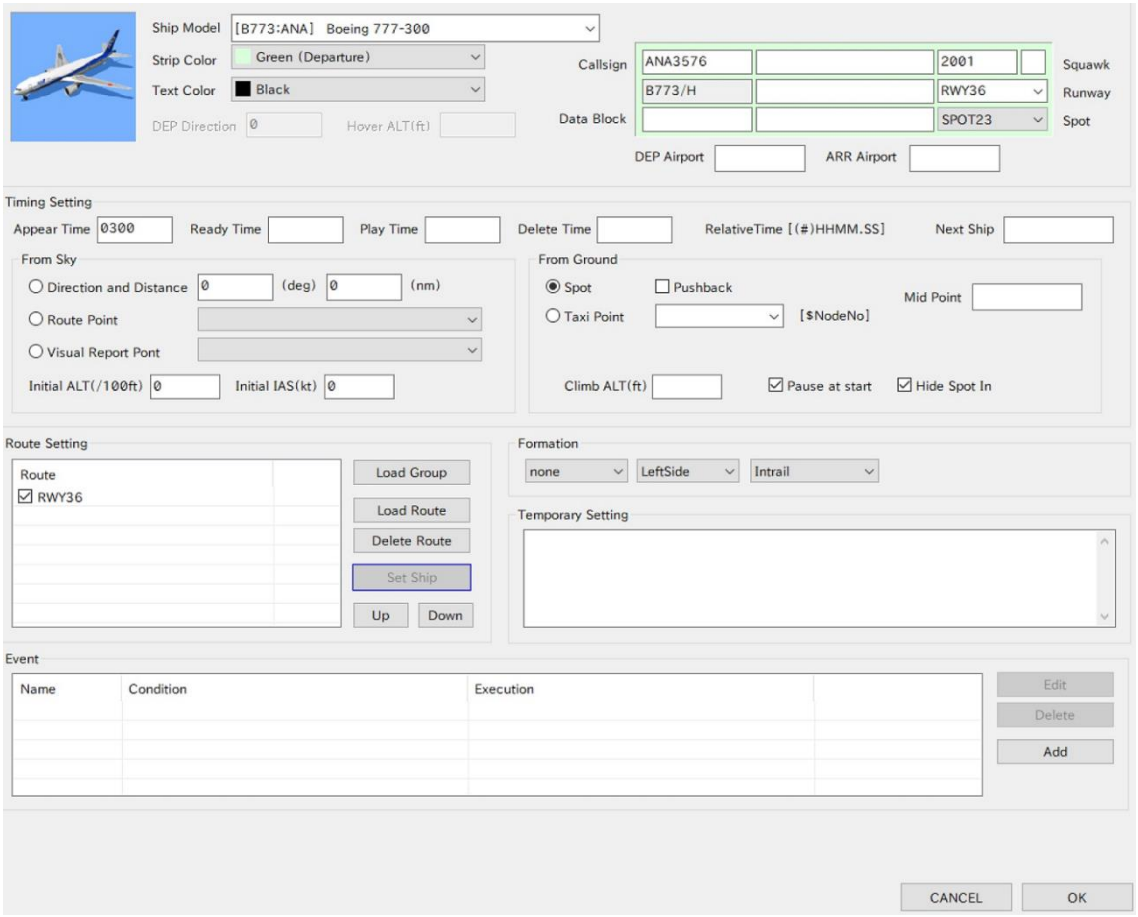
Load Scenario

3. From <Operation> select <New>

Set Aircraft information, Timing and route.

2. For New Scenario click Scenario Editor.

10-4 Operation Diagram of Aircraft



<Scenario Editor> <Operation> <New>

Ship Model

Ship Color Green (Departure), Orange(Arrival), Aqua(Departure), Pink(Arrival)

Text Color

Comment

[Appear Time] At this time flight progress strip is created and aircraft information is displayed. When [Ready Time] and/or [Play Time] is not specified the aircraft starts to move. If you want to hold the aircraft at spot specify [Pause at Start].

[Ready Time] At this time lights are on.

[Play Time] This item is specified for demonstration use. Aircraft starts to move at this time

If [Pause at Start] is specified, it is ignored.

[Delete Time] At this time aircraft data will be deleted from the system.

When relative time system is used;

Departure: When aircraft reached at the end of assigned route

Arrival: Spot-in and engine cut off.

Relative Time [(#)HHMM.SS]

Next Ship　At Delete Time aircraft specified here appears.

From Sky

Direction and Distance

Route Point

Visual Report Point

Initial ALT(/100ft) Initial IAS[kt]

From Ground

Spot

Pushback

Mid Point

Arrival:

Taxi　Point　[$NodeNo]

Climb ALT(ft)

Pause at start

Hide Spot In

Formation

none 1 2 3 4

LeftSide RightSide

Intrail (Follow preceding a/c) / Alert (all a/c take off at once)/ Combination(2 a/c paired side by side)

Temporary　Setting

Load Group

Load Route

Delete Route

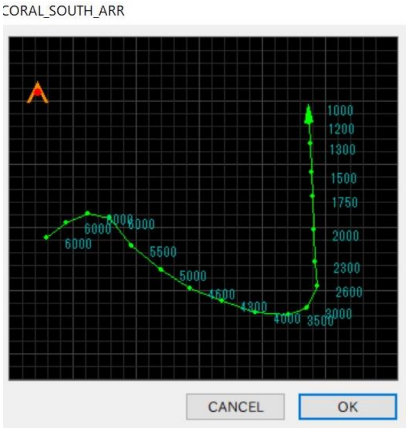
Set Ship

Up/Down

Event　Edit/Delete/Add

10-5Route Diagram

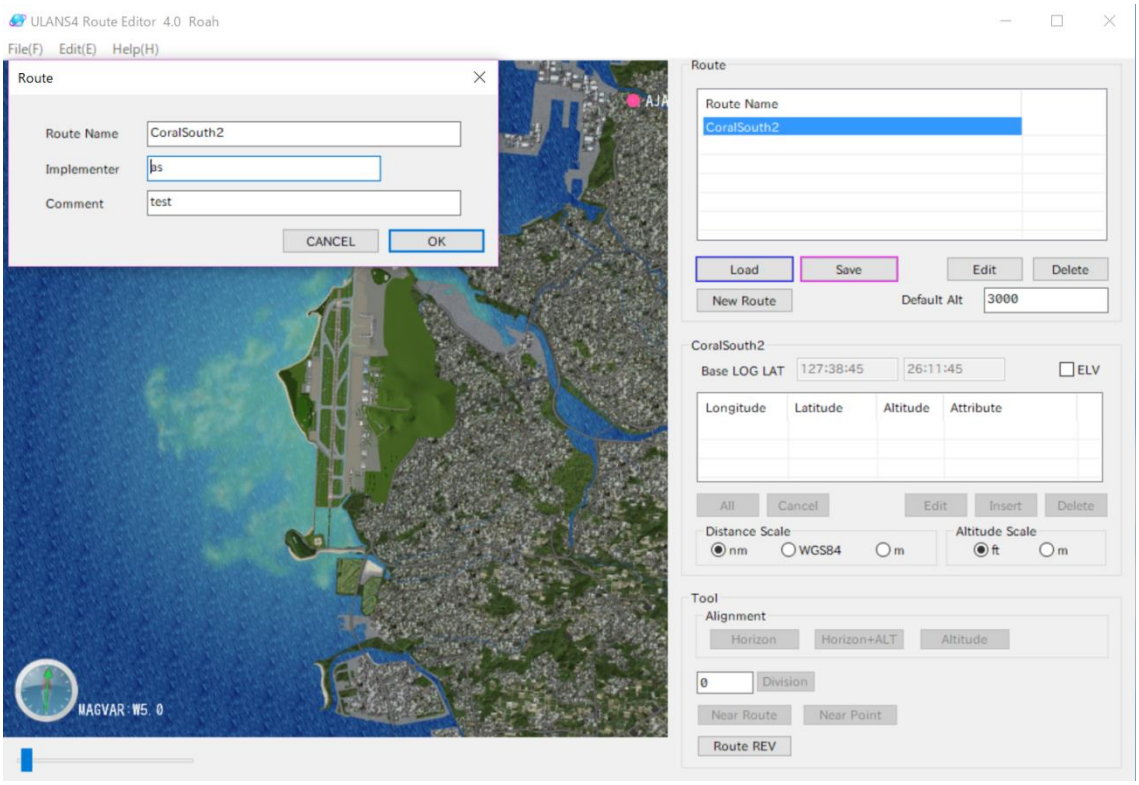
Route Map is shown　Double Click at Route　Setting



11.Route Editor

From New Route [Route]

11-1Route



Load/Save/Edit/Delete

New Route

Default Alt

Base LOG LAT

ALL/Cancel/Edit/Insert/Delete

Distance Scale (nm,WGS84,m)

Altitude Scale (ft,m)

Tool

Alignment (Horizon, Hrizon+ALT, Altitude)

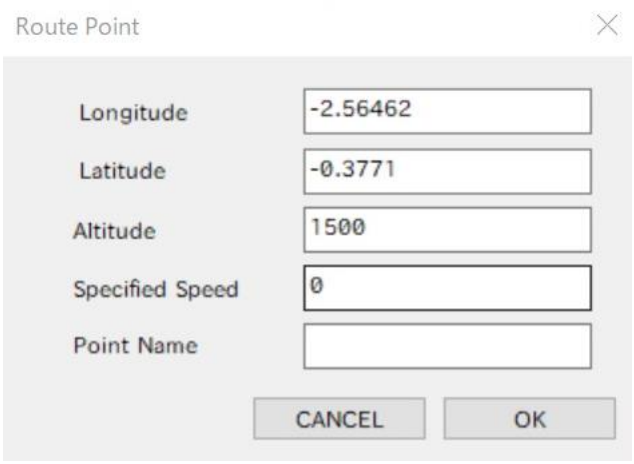
Dvision

NearRoute/Near Point

Route REV

Double click on point

11-2Route Point



12.Node Editor

New List/Save List/Load List

Node Point

Name No Name

No

☑Visible	☑Click	☑MidPoint
☑Runway	☑Spot	☑Helipad
☑HiSpeed	☑LowSpeed	☑FastSpeed

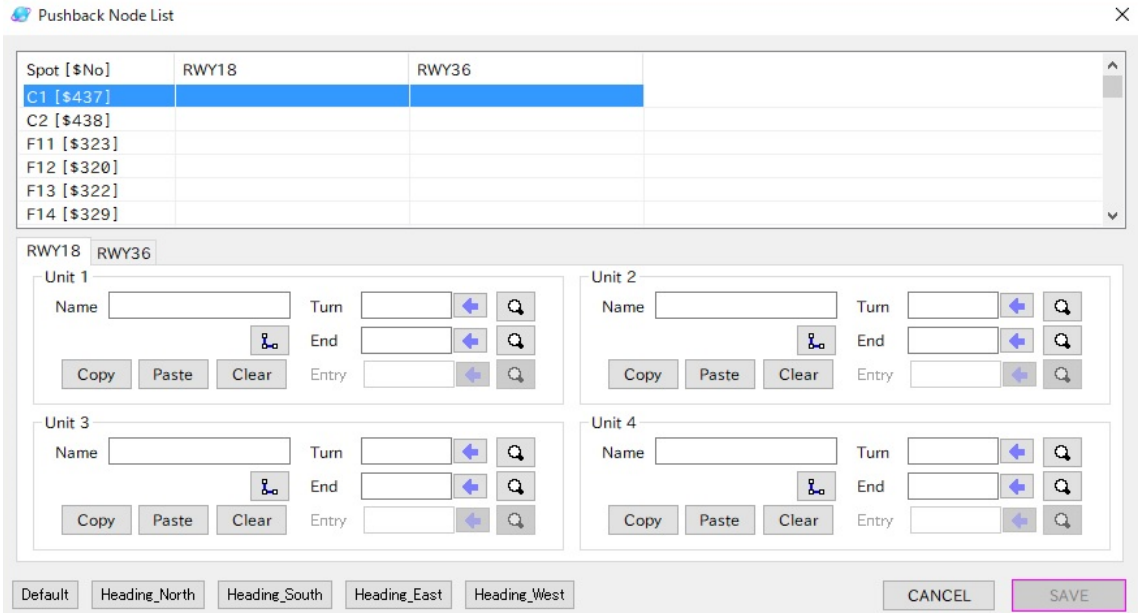
☑Hold ☑HoldCancel ☑TurnHandle compati 用

☑PushbackPoint ☑TurnPoint ☑VehicleOnly 使用法

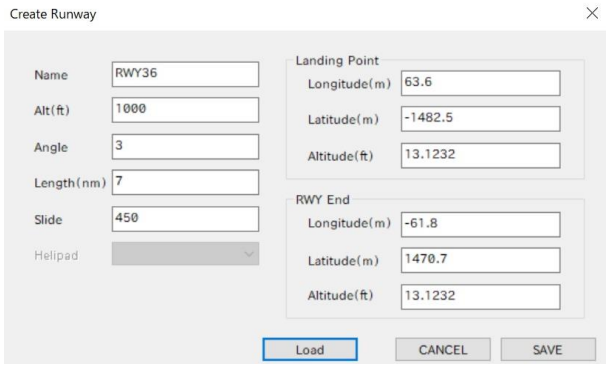
Appellation Rule

Node without specific name can be named by No Name button as “_NoName”.

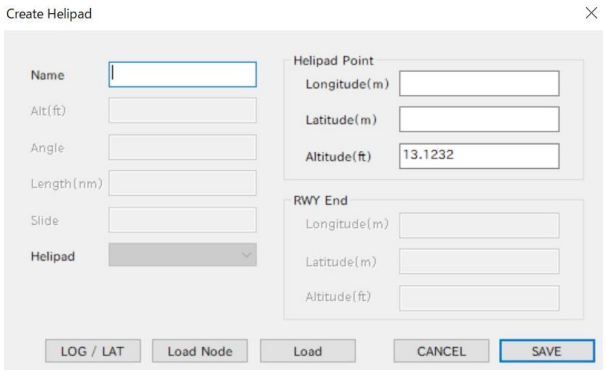
Part of the name after underscore will be neglected.



Create Runway

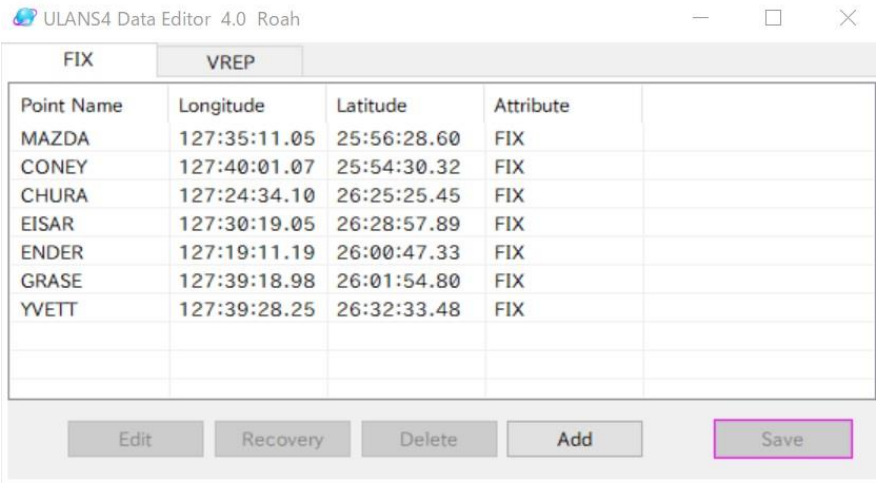


Create Helipad

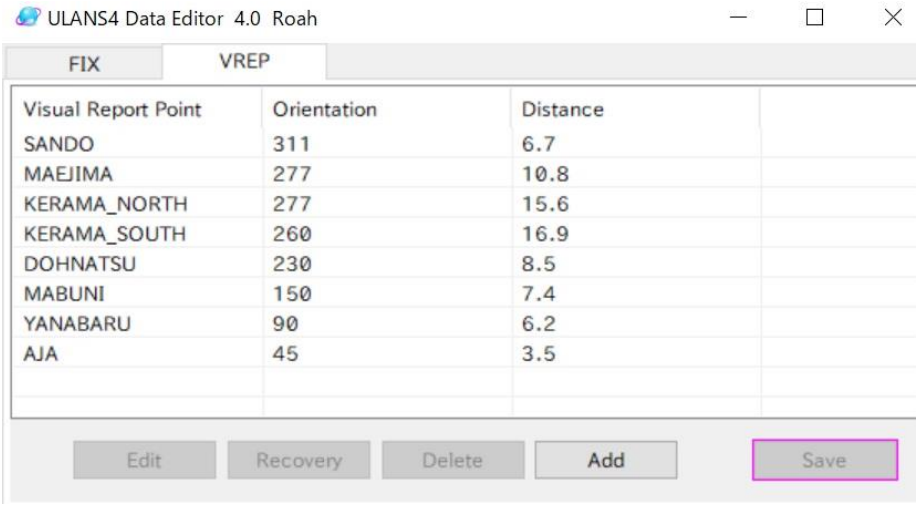


13.Data Editor

13-1Fix



13-2 VREP



14. Ship Editor

ULANS4 Ship Editor 4.0

[B735:TJK] Boeing 737-500 (Code:B735_TJK)

Save

Ship Data

Code B735_TJK Maker Boeing

Name 737-500

User

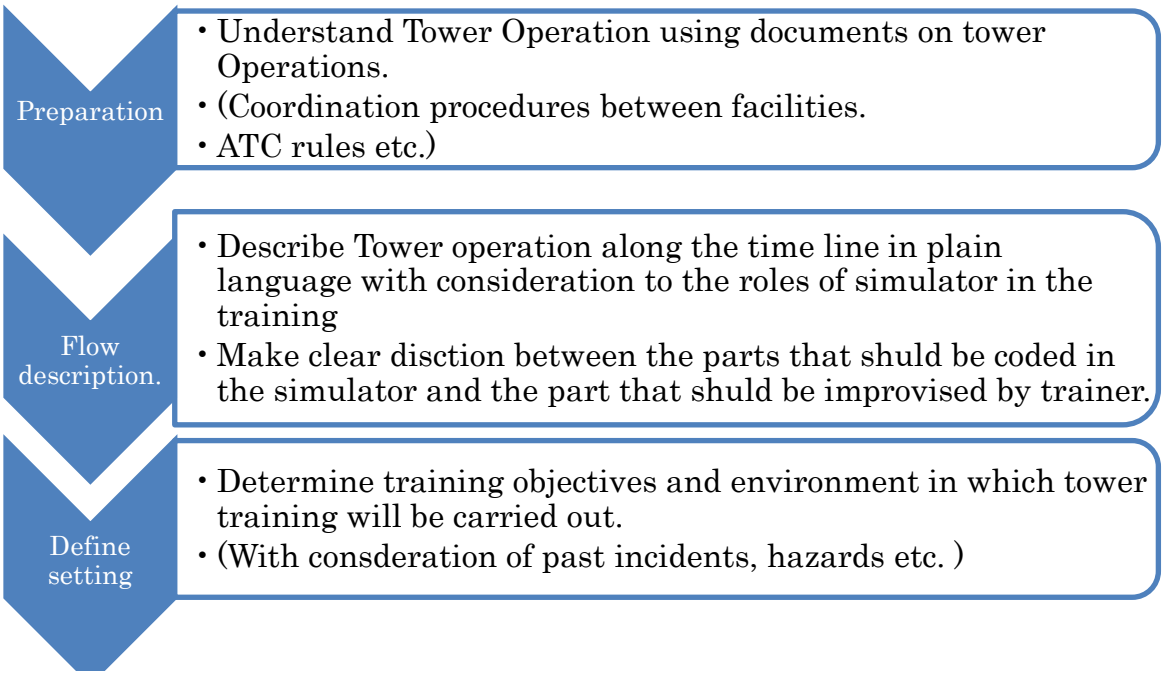
Name Tajik Air

3Letter TJK 2Letter 7J Register LY-AWG

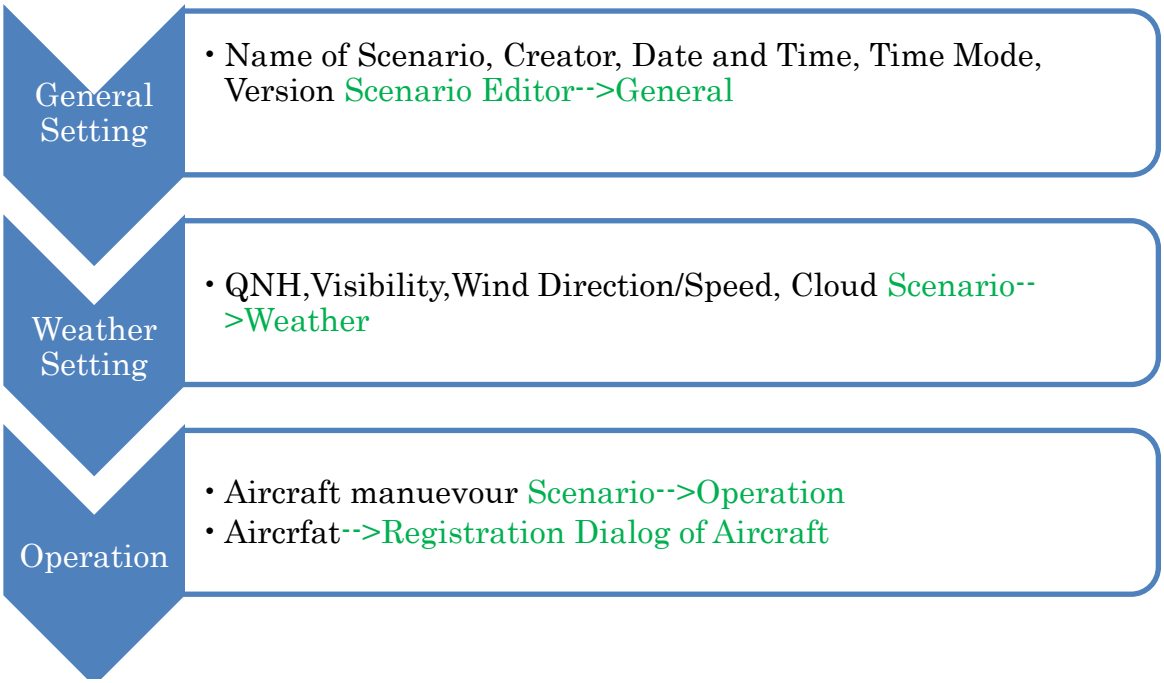
Section	Key	Value	Help
SHIP	Icao	B735	ICAO airframe name
	Wtc	M	Wake Turbulence Category
	Type	L2J	Airframe type
	Apc	C	Approach category
FILE	Model	LY-AWG.pvm	Model file name
	Sound	engine.wav	Engine sound source file name
SIZE	Weight	79000	<kg> Weight of airframe
	CenterHeight	2.2	<m> Vertical height of supposed center of gravity above gro...
	FrontLength	15.6	<m> Nose length measured from the coordinate origin
	RearLength	15.6	<m> Tail length measured from the coordinate origin
	Height	13.2	<m> Vertical height from ground contact point to the highe...
	Width	31.6	<m> Width from the coordinate origin to each side
	nose	10.6	<m> Length up to the nose gear
PITCH	MaxUpPitch	20	<Deg> Maximum climbing angle (+value)
	MaxDownPitch	5	<Deg> Maximum descending angle (+value)
	PitchPerSec	2	<Deg> Pitch angle changeable per second
	CruisePitch	-2	<Deg> Cruise pitch angle (pitch up: negative value (-))
	StaticPitch	0	<Deg> Static pitch angle (pitch up: negative value (-))
ROLL	MaxRoll	40	<Deg> Maximum roll angle
	RollPerSec	20	<Deg> Roll angle changeable per second
	MaxRollAngle	40	<Deg> Maximum roll variation angle (maximum roll when t...
SPEED	BaseAlt	914.4	<m> Base altitude (maximum speed with this altitude)
	BaseAltIas	444.48	<km/h> Indicated air speed at base altitude (maximum spe...
	MinIas	259.28	<km/h> Minimum indicated air speed (stalling starts from t...
	IasPerSec	2.2224	<km/h> Indicated air speed changeable per second
	TaxiIas	37.04	<km/h> Indicated air speed when taxiing
	RunwayIas	92.6	<km/h> Indicated air speed on runway (Including speed o...
	HiTaxiIas		<km/h> Indicated air speed of taxiing for alert (set as neces...
	BaseUpwardIas		<km/h> Indicated air speed of Based upward (extended)
	TopAlt		<m> Clititude of Maximum upward (extended)
	TopIas		<km/h> Indicated air speed of Maximum upward (extended)
TRACE	TraceRange	120	<Deg> Route effective trace range (route in this range is ret...
	TraceLimitSec	10	<Sec> Route trace release time (sec) (threshold time to ski...
APPROACH	Ias	268.54	<km/h> Approach speed at threshold
	Pitch	-4	<Deg> Approach pitch angle (plus or minus added to the ai...
	FlarePitch	-4	<Deg> Nose up pitch angle at takeoff (plus or minus added...
	FlareAlt	6.096	<m> Flare start altitude
	HeadDownIas	240.76	<km/h> Indicated air speed at nose down after landing
	TouchAndGoIas	148.16	<km/h> Indicated air speed at touch-and-go start
	BrakeSpeedDownRate	1.6	<Rate> Indicated air deceleration rate after landing (multip...
	ReverseCloseIas	111.12	<km/h> Reverser release speed (0 for aircraft without thrus...
DEPARTURE	Ias	333.36	<km/h> Maximum indicated air speed at takeoff
	FlarePitch	-6	<Deg> Nose up pitch angle at takeoff (plus or minus added...
	HeadUpIas	222.24	<km/h> Indicated air speed at nose up (rotation) during ta...
	LiftUpIas	250.02	<km/h> Liftoff indicated air speed during take off
	SpeedUpRate	2	<Rate> Acceleration at takeoff (multiplied by IasPerSec)
THRUST	MasterVolume	0.9	<Rate> Master volume rate of engine sound
	ThrustPerSec	0.1	<Rate> Thrust changeable per second
	ThrustTakeoffPerSec	0.4	<Rate> Thrust speed up rate at takeoff (multiplied toThrust...
	ThrustReverserPerSec	0.6	<Rate> Thrust reverser rate at takeoff (multiplied toThrustP...
	ThrustOffsetPerPitch	0.02	<Rate> Thrust variation rate to pitch at flight (added to Th...
	StartStopSec	6	<Sec> Engine start/stop time
	IdleThrust	0.1	<Rate> Thrust at engine idle
	MaxThrust	1	<Rate> Maximum thrust
	TaxiThrust	0.2	<Rate> Taxi thrust
	ApproachThrust	0.5	<Rate> Approach thrust
	IdlePitch	0.4	<Rate> Sound pitch at idle
	IdleVolume	0.6	<Rate> Sound volume at idle
	MaxPitch	1.2	<Rate> Sound pitch at maximum thrust
	MaxVolume	1.0	<Rate> Sound volume at maximum thrust

Steps for Scenario making

I. Preparation



II. Scenario Coding



III. Scenario Operation

Overall Control	• Time,Weather,RVR Control Console
Aircraft Control	• Route/Spot Selection Pilot Console
Ground Control	• Control of Aircraft/Vehicle on the Ground Ground Radar Console
Sky Control	• Control of the aircraft in the sky. Radar Console

IV. Scenario Evaluation

General Setting	• Name of Scenario, Creator, Date and Time, Time Mode, Version Scenario Editor-->General
Weather Setting	• QNH,Visibility,Wind Direction/Speed, Cloud Scenario-->Weather
Operation	• Aircraft manuevour Scenario-->Operation • Aircrfat-->Registration Dialog of Aircraft

EXERCISE TRAINING SCENARIOs

1. Objective: Confirm Basic ATC Operation for one inbound.
2. Environment:
3. No of Traffic:1 Arrival

TRAINING SCENARIO 2.

4. Objective: Confirm Basic ATC Operation for one departure.
5. Environment:
6. No of Traffic:1 Departure

TRAINING SCENARIO 3.

7. Objective: Confirm basic ATC separation between inbound and departure.
8. Environment:
9. No of Traffic: 2 Arrivals and one Departure

TF-1 Activity Plan (4 Sep to 6 Oct 2017)

Date		AM	PM	Remarks
2	S			arrived KC131
3	S			
4	M	Explanation by NTT Data	Explanation by NTT Data	
5	T	Explanation by NTT Data	Explanation by NTT Data	
6	W	Explanation by NTT Data	Explanation by NTT Data	
7	T	Explanation by NTT Data	Explanation by NTT Data	
8	F	Explanation by NTT Data	Explanation by NTT Data	
9	S			
10	S			
11	M	Internal meeting	TF-1 Meeting	
12	T	Simulator Basics	Prerequisite (Documents and Information)	
13	W	Data Base Explanation Scenario Coding Explanation Data Base Creation Scenario Coding for one Arrival	Scenario Coding for one arrival Data Base Creation	
14	T	Arrival Hands-On	Arrival Hands On	
15	F	Scenario Coding for one Departure	Departure Hands-On	
16	S			
17	S			
18	M	Aerodrome Instructor (AD-I)training course (1) One departure and two arrival Scenario Coding	Aerodrome Instructor (AD-I)training course (2) One departure and two arrival Hands-On	
19	T	Aerodrome Instructor (AD-I)training course (3) One departure and two arrival Scenario Coding	Aerodrome Instructor (AD-I)training course (4) One departure and two arrival Hands-On	
20	W	Aerodrome Instructor (AD-I)training course (5) Two departure and two arrival Scenario Coding	Aerodrome Instructor (AD-I)training course (6) Two departure and two arrival Hands-On	
21	T	Aerodrome Instructor (AD-I)training course (7) One departure and two arrival Scenario Coding	Aerodrome Instructor (AD-I)training course (8) One departure and two arrival Hands-On	

22	F	Aerodrome Instructor (AD-I)training course (9) One departure and two arrival Scenario Coding	Aerodrome Instructor (AD-I)training course (10) One departure and two arrival Hands-On	
23	s			
24	s			
25	M	AD-2(1) same as AD-1(1)	AD-2(1) same as AD-1(2)	
26	T	AD-2(1) same as AD-1(3)	AD-2(1) same as AD-1(4)	
27	W	AD-2(1) same as AD-1(5)	AD-2(1) same as AD-1(6)	
28	T	AD-2(1) same as AD-1(7)	AD-2(1) same as AD-1(8)	
29	F	AD-2(1) same as AD-1(9)	AD-2(1) same as AD-1(10)	
30	S			
1	S			
2	M	AD-3(1) same as AD-1(1)	AD-3(1) same as AD-1(2)	
3	T	AD-3(1) same as AD-1(3)	AD-3(1) same as AD-1(4)	
4	W	AD-3(1) same as AD-1(5)	AD-3(1) same as AD-1(6)	
5	T	AD-3(1) same as AD-1(7)	AD-3(1) same as AD-1(8)	
6	F	AD-3(1) same as AD-1(9)	AD-3(1) same as AD-1(10)	
7	S			
8	S			
9	M	Wrap-up TF-1 Meeting	Report to JICA office	
10	T			Depart KC132

Appendix 2

Operation Records

Date(yymmdd)		
Name of Operators		
Objectives		
Start Up (hh:mm)		
Operation Contents		
Normal Operation Yes No (Details in Operation Contents)		
Shut Down (hh:mm)		

Appendix 3

Mal-Function Report Form

Reported Date:MM:DD:YY

Reported:

(Endorsed by:_____)

1.Summary of Mal-function

2. Frequency:

3. Magnitude:

4. Urgency:

5. Cause :

6. Remedy(if any):

Report Must Includes below Information

1. Summary of Mal-function 2. Frequency *always ((reproducible=100%), frequently (70%), sometimes (50%). rarely (10-30%), scarcely ever (0-10%), periodically 3. Magnitude (grave, middle, trivial) 4. Urgency (Need urgent fix, As soon as possible, Not urgent) 5. (Estimated) Cause(s) 6. Remedy (if any)

AD-Sim Supplementary Manual

ADSIM　Operation and Management Rules

Securities

1. The Men who are responsible for Management of AD Simulator, here after"Sim-Manager" (instructors and pilot), have the responsibility of security of the AD Simulator room. (Lock Up)
2. Sim-Manager if necessary assigns the entry password to the system.

Eligibilities

1. The Man who is responsible for Management of AD Simulator should assign authorized members of Simulator Operations (including IT staffs).
2. Authorized members should be assigned among those who had taken training course for this simulator.
3. Operation of AD Simulator should be authorized members of simulator or should be done under supervising of these member(s).

Start UP and Shut Down

1. Start Up and Shut Down must be done according to the Start Up and Shut Down pictures.　(Appendix 1)
2. After Start Up, normality of basic functions should be checked against the Start Up and Shut Down procedures.

File Management

1. Scenario name should be "**Scenario name**" and the details should be in the scenario's remarks.

1. Scenario name should be named so that the contents of the scenarios are clearly identified and the details should be in the scenario's remarks.

The scenario names should be recorded in the AD Sim PC.

2. Permanent changes in original data and parameters should be done with the consent of the man in charge of this system. The scenarios are also should be updated according to the changes.
3. The permanent changes should be correctly recorded in the Operation Record. (Appendix 2)
4. Changes to the parameters and data for the personal use should be done after back up and be restored after the work. The personal data (scenarios) should be stored under specified personal directory.
5. Parameters and Data should be regularly backed-up (Erased) and change

history should be correctly recorded.
6. Person in charge of back up should be appointed by Sim-Manager.
7. Backed Up Fixed Drive should be under Sim-Manager's control.
8. Back Up files and their directories are follows.

C>ULANS4>PORT>UTDD>GROUND>taxi.csv (ground NODEs)
C>ULANS4>PORT>UTDD>GROUND>pushback.csv (pushback NODEs)
C>ULANS4>PORT>UTDD>RADAR>fix.csv (FIXes)
C>ULANS4>PORT>UTDD>RADAR >vrep.csv (Visual Reporting Points)
C>ULANS4>PORT>UTDD>ROUTE>route.ard (Routess)
C>ULANS4>PORT>UTDD>SCENARIO > *filename*.ard (SCENARIO)
C>ULANS4>PORT>UTDD>LAYOUT > *filename*.lay (LAYOUT)
C>ULANS4>SHIP>UTDD>*aircraft type* > spec (Aircraft Specification)
*DB updating is ATC's responsibility.

NOTE
Copy edited "ROUTE", "GROUND" and "RADAR" data in the instructor terminal to the pilot terminal. The data in the pilot terminal must coherent with the one in the instructor terminal.
(To utilize pilot terminal, the files same as "ROUTE", "GROUND" and "RADAR" are necessary.)

Recording
1. Daily operation of the AD Simulator should be recorded in the "Daily Operation Records."

Mal-function reporting procedure and Form

1. Initial mal-function assessment should be done under original environment and with original settings.
2. Daily mal-functions should be recorded in the "Daily Operations Records" and if necessary should be reported to the Sim-Manager.
3. If necessary Sim-Manager should submit the Mal-function record in the written form of "Mal-function Report" to the IT specialist. (Appendix 3)

START UP AND SHUT DOWN

Start Up

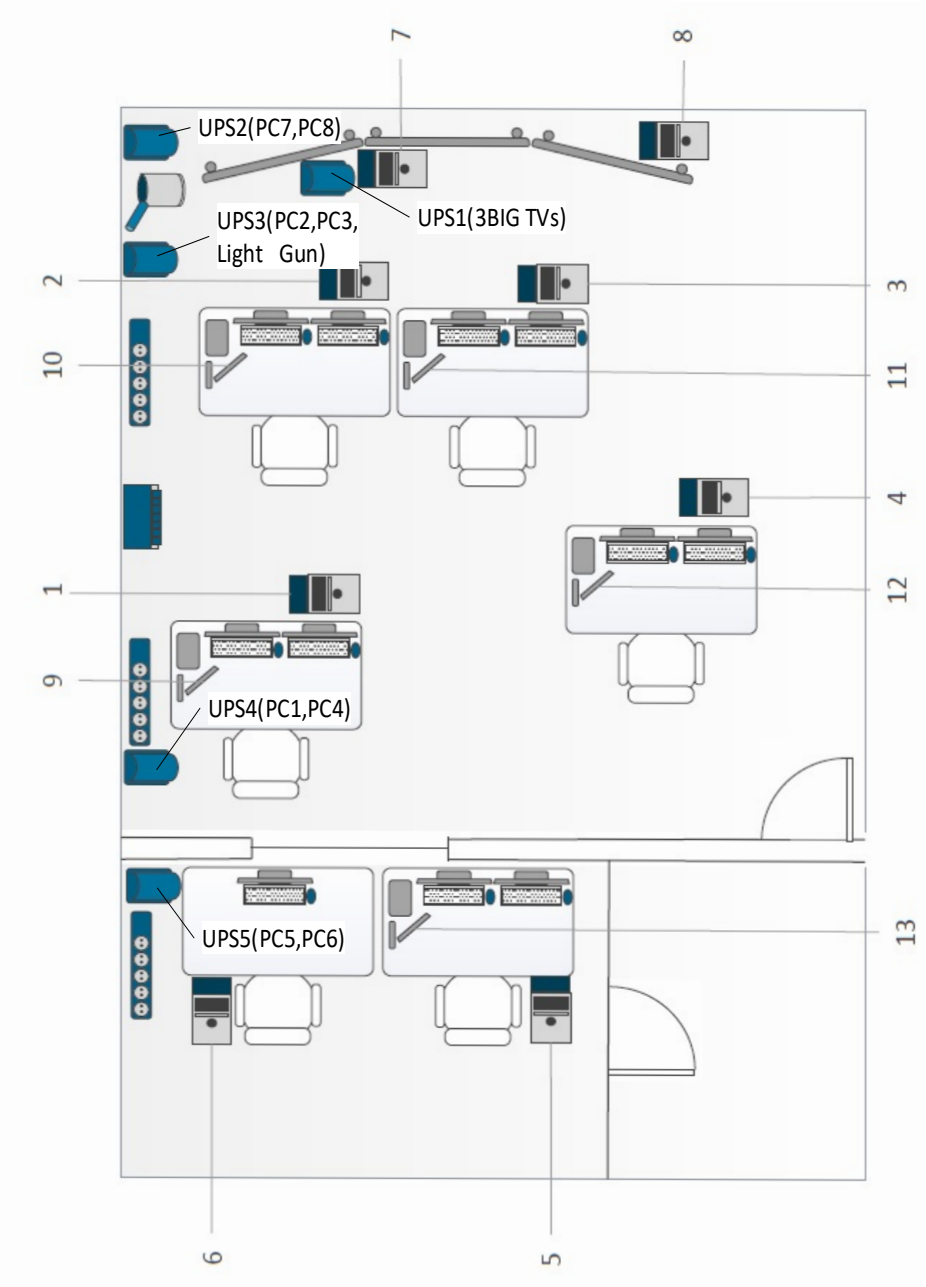
1) UPS 1-5 ON
2) 3TVs ON Startup PC7, PC8
4) Startup PC1-6 and Power Strips9-13
5) Load Scenario and Check
   Check sound from TV
   Check LAND LINEs Check VHFs
   Check Strips

Shut Down

1) Reverse Sequence

**Double click ON TV for shut down menu.*

**Do Not Off Speakers(?)*



*Power Strips(Communication PCs=9,10,11,12,13) and Speakers are directly connected to the power outlets.

Appendix 2

Operation Records

Date(yymmdd)		
Name of Operators		
Objectives		
Start Up (hh:mm)		
Operation Contents		
Normal Operation Yes No (Details in Operation Contents)		
Shut Down (hh:mm)		

Operation Records *(sample entry)*

Date(yymmdd) *2017･09･26*

Name of Operators

Sakae Akio

Objectives

**Make basic scenarios for tower trainees.*
**Set up 180 degrees turn node on RWY between TWY "D" and "E".*

Start Up (hh:mm) *09:30*

Operation Contents

Scenarios.
20170926SakaeOneArrivalTwoDeparture
20170926SakaeTwoDeparturesFollowMe

Malfunction
PC5(Controller_4) disconnected twice during the operation.
Each time below message appeared on the screen.
ULANS4 Simulator has stopped working.
A problem caused program to stop working correctly. Windows will close the program and notify you if solutions is available.

Re-linked by system restart.

Normal Operation Yes ☐ No **(Details in Operation Contents)**

Shut Down (hh:mm) 16:30

Appendix 3

Mal-Function Report Form

Reported Date:MM:DD:YY

Reported:

(Endorsed by:_____)

1.Summary of Mal-function

2. Frequency:

3. Magnitude:

4. Urgency:

5. Cause :

6. Remedy(if any):

Report Must Includes below Information

1. Summary of Mal-function 2. Frequency *always ((reproducible=100%), frequently (70%), sometimes (50%). rarely (10-30%), scarcely ever (0-10%), periodically 3. Magnitude (grave, middle, trivial) 4. Urgency (Need urgent fix, As soon as possible, Not urgent) 5. (Estimated) Cause(s) 6. Remedy (if any)

Sample of Mal-Function Report

Mal-Function Report Form

Reported Date:MM:DD:YY 04/10/2017

Reported by: Akio SAKAE

(Endorsed by:_____)

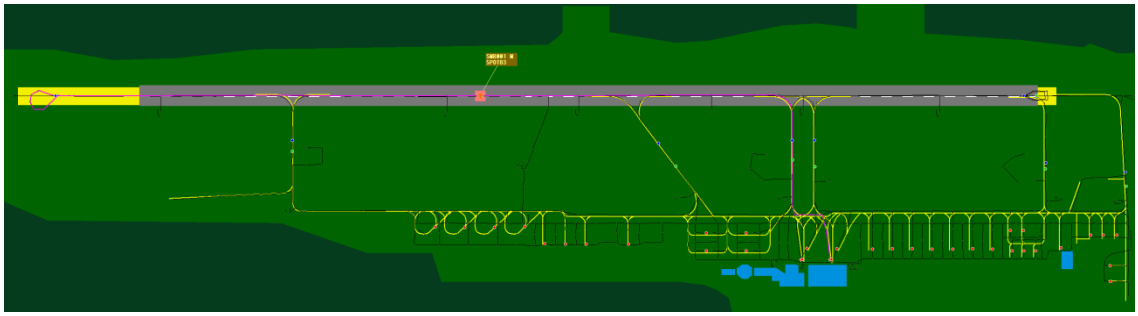
1.Summary of Mal-function

When setting two nodes and save ",” is automatically inserted.
Because of this ",” two nodes does not work correctly.

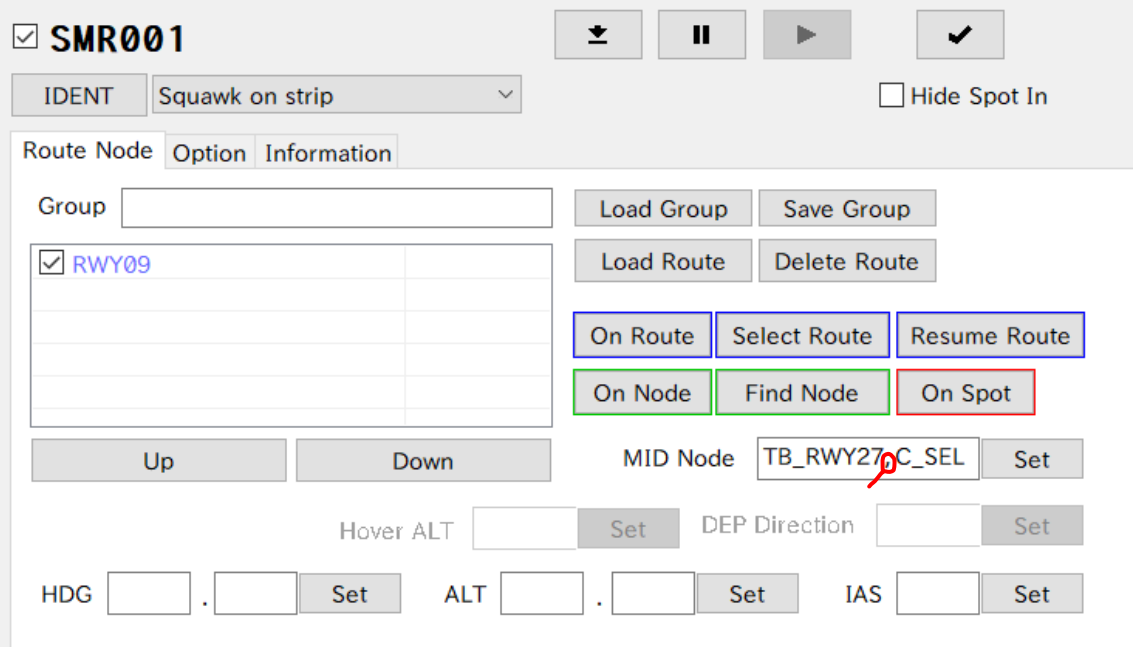
Original TAXI ROUTE

MID_Node=TB_RWY27

MID_Node=C_SEL



MID_Node=TB_RWY27 C_SEL



2. Frequency Reproducible
3. Magnitude Middle
4. Urgency Not urgent
5. Cause when saving "," is automatically inserted
6. Remedy

Read scenario and remove "," in the "groundmidnode" and save the scenario.

TB_RWY27,C_SEL
[INFORMATION]
creator=Instructor
date=2017/08/30
version=4612
nosave=0
port=UTDD
[GENERAL]
month=7
basetime=1200
baserange=60
commentline=1
comment00=You can write comments here.
[WEATHER]
qnh=0,2992,10,2992,20,2992,30,2992,40,2992,50,2992,60,2992

temp=0,20,10,20,20,20,30,20,40,20,50,20,60,20
visibleend=0,50000,10,50000,20,50000,30,50000,40,50000,50,500
00,60,50000
visiblestart=0,0,10,0,20,0,30,0,40,0,50,0,60,0
wind1speed=0,0,10,0,20,0,30,0,40,0,50,0,60,0
wind1direct=0,180,10,180,20,180,30,180,40,180,50,180,60,180
wind2speed=0,0,10,0,20,0,30,0,40,0,50,0,60,0
wind2direct=0,180,10,180,20,180,30,180,40,180,50,180,60,180
rainfall=0,0,10,0,20,0,30,0,40,0,50,0,60,0
snowfall=0,0,10,0,20,0,30,0,40,0,50,0,60,0
sandstorm=0,0,10,0,20,0,30,0,40,0,50,0,60,0
cloud=ScatteredClouds
cloudheight=3000
[SHIP0000]
shipcode=B738_SMR
callsign=SMR001
squawk=2101
guid=170830001
ownchar=C
runway=RWY09
hoveralt=0
spot=SPOTB3
icaocode=B738
arrport=UTDD
start=1200
mode=11
backcolor=2
textcolor=0
skydirect=270
skydistance=5.39957
skyalt=2001
skyias=160
groundalt=0
groundpushback=0
groundhold=0
groundhidespotin=0

groundmidnode=TB_RWY27,C_SEL

linkcount=0
linkposition=0
linkdeaprture=0
route00=RWY09
extcolor=0x00000000
setupvalue=0
setupvalue2=0
setupvalue3=0
setupvalue4=0

Report Must Includes below Information

1. Summary of Mal-function 2. Frequency *always ((reproducible=100%), frequently (70%), sometimes (50%). rarely (10-30%), scarcely ever (0-10%), periodically 3. Magnitude (grave, middle, trivial) 4. Urgency (Need urgent fix, As soon as possible, Not urgent) 5. (Estimated) Cause(s) 6. Remedy (if any)

How to be a master of AD-SIM ?

First thing is to know the particular features of this simulator.

AD-SIM is often said to be a typical system "working but not used".
Or systems only for the visitors wonder and not used for actual simulation training.

There are several reasons for this. One of the reason why is AD-SIM requires many helping hands to train one trainee.
To resolve this problem this system introduced AI function.

AI function is introduced to alleviate heavy burden on the instructor. Miss. Kyarii is the AI. She controls the air craft. But How??? You will understand by Touch and Feel. Miss Kyarii has the responsibilities for over all maneuvering the aircraft. In a way she acts like pilot.

Air traffic controller provides the separation between aircraft. If he fails they collide
Air traffic controller has the responsibilities to provide safe separation between aircraft.

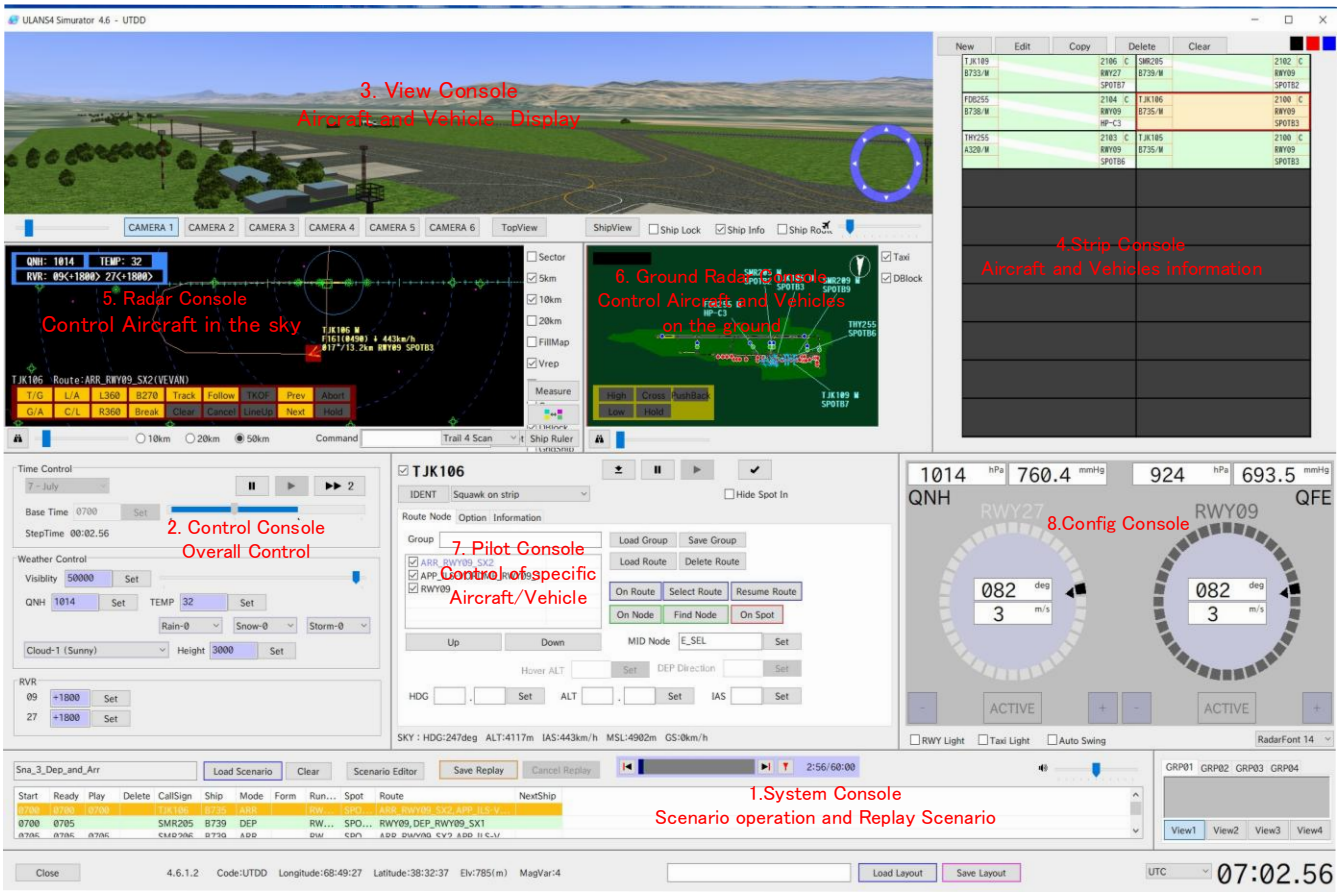
1)Set up the environment so that this system is used regularly. Do not let this system lapse into the situation "Working but NOT used!".

2) Through regular use **customize** your system to work more realistically.
SID/STA.FIX NAMES, 180 TURNS ON RWY AND TWY

3)Through regular use find out the function that does not fit to your operation then devise a way to fix it.

Foster your system like you bring up your own children!

Trainer Operation Console Functions



DB Maintenance

You can maintenance AD-Sim DB by using editors.

All the data that materialize simulation are stored in the directory ULANS4.

Under subdirectory PORT data that generates for natural phenomena is stored. Data for each airport are stored under specific airport designator. For instance data for Dushanbe airport is under subdirectory UTDD. Data open to the user with data editor are shown below.

Data Base for simulator should be prepared by user but it is usually prepared by software supplier for the turn key system. But it is very important to have the knowledge of the stored data. Especially in cases like introduction of new SID/STARS which necessitates new creation/edition of data for simulation as a basic Data Base.

Scenario Editor

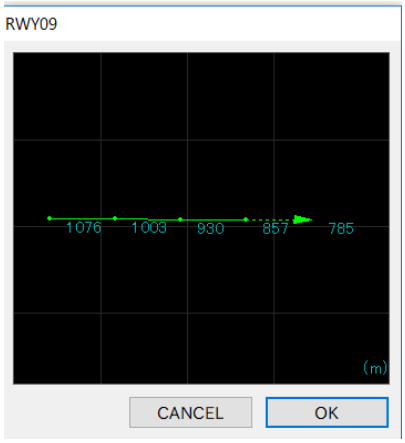
ULANS Scenario Editor set all the data that generates simulation. The data is stored under directory “Scenario” with attribute **.sna.

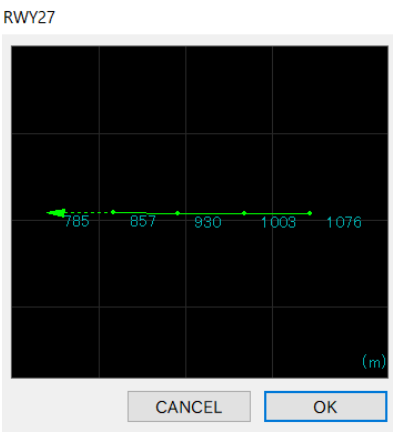
Route Editor

Route Editor is used to create/edit aircraft flight routes. The data is stored under directory “Route” with attribute **.ard.

APP_2NDB-DME_RWY27 & APP_ILS_VORDME_RWY09_1

RWY09 & RWY27

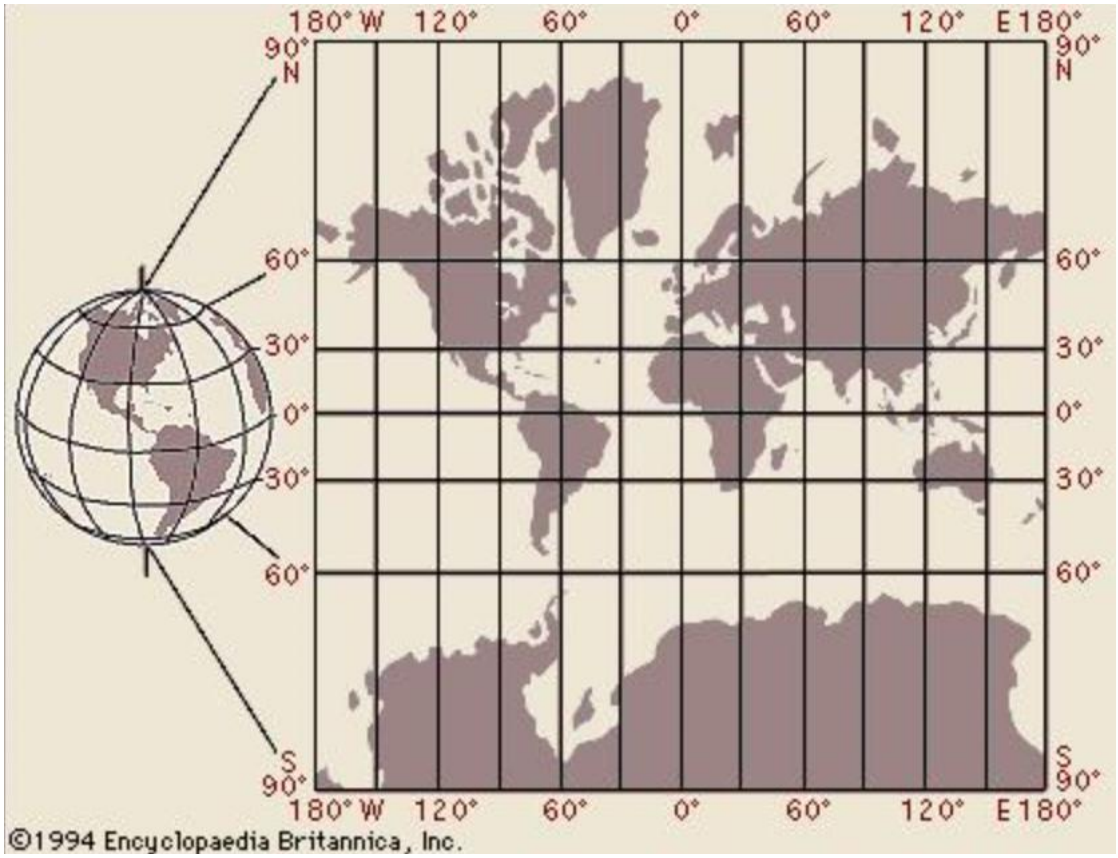




Writing Routes on the map

1. You can write rough SID/STARs using Route editor. Start up route editor and click New and name new names for the SID/STARs. Then click on the map. Subsequent click points are automatically connected to form the new SID/STARs.

If you want to make fine adjustment you can do that dragging the points. Each point is described either with the distance from distance from Base LOG and LAT (68.49.27, 38.32.27) OR WGS84 coordinates.



2. If you need more precision you can make it by plotting the route on the map.

Plots routes on the Mercator's charts and reads coordinates to draw routes (SID, STAR etc). Draw on the graph paper with Latitude/Longitude ratio same as Mercator. Use graph paper and make 27.25mmX37.00mm grid. Subdivide each grid into 60. Then plots the route and read out coordinates from the graph. Write SID/STAR using these read out plots.

3. You can also calculate some of the intersection points using spherical trigonometry. (All is in the Web)

Calculating the Positions, distances and bearings using spherical trigonometry. (Mean Middle Latitude Sailing methods also give pretty good precision.)

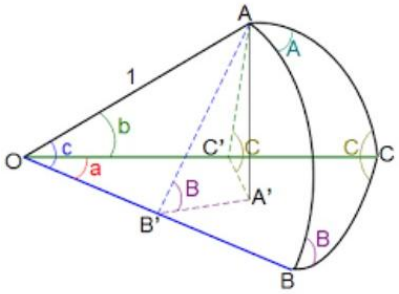
Spherical Trigonometry

1) Distance between B(LatB,LonB)-C(LatC,LonC)=xdeg

AB=90deg-LonB

AC=90deg-LonC

AB=LatC-LatB



$$\mathbf{cosx^{\circ} = CosABcosAC + sinABsinACcosAB}$$

$$\mathbf{Distance\ x = \frac{x^{\circ}}{\rho^{\circ}} R(km)\ \ R = 6370km\ \frac{1}{\rho^{\circ}} = 0.017454 = \frac{\pi}{180}}$$

2) Distance between B(LatB,LonB)-C(LatC,LonC) and bearing

$$\tan\frac{A+B}{2} = \frac{\cos\frac{AC-AB}{2}}{\cos\frac{AC+AB}{2}} = \cot\frac{N}{2} \qquad \tan\frac{A-B}{2} = \frac{\cos\frac{AC-AB}{2}}{\cos\frac{AC+AB}{2}} = \cot\frac{N}{2}$$

-→ Bearing A,B

$$\cos\frac{AB}{2} = \frac{\cos\frac{AC+AB}{2}}{\cos\frac{B+C}{2}} = \sin\frac{A}{2}\ \ AB = \frac{L}{R}\rho^{\circ}\ \ Distance\ L = \frac{AB}{\rho^{\circ}}R$$

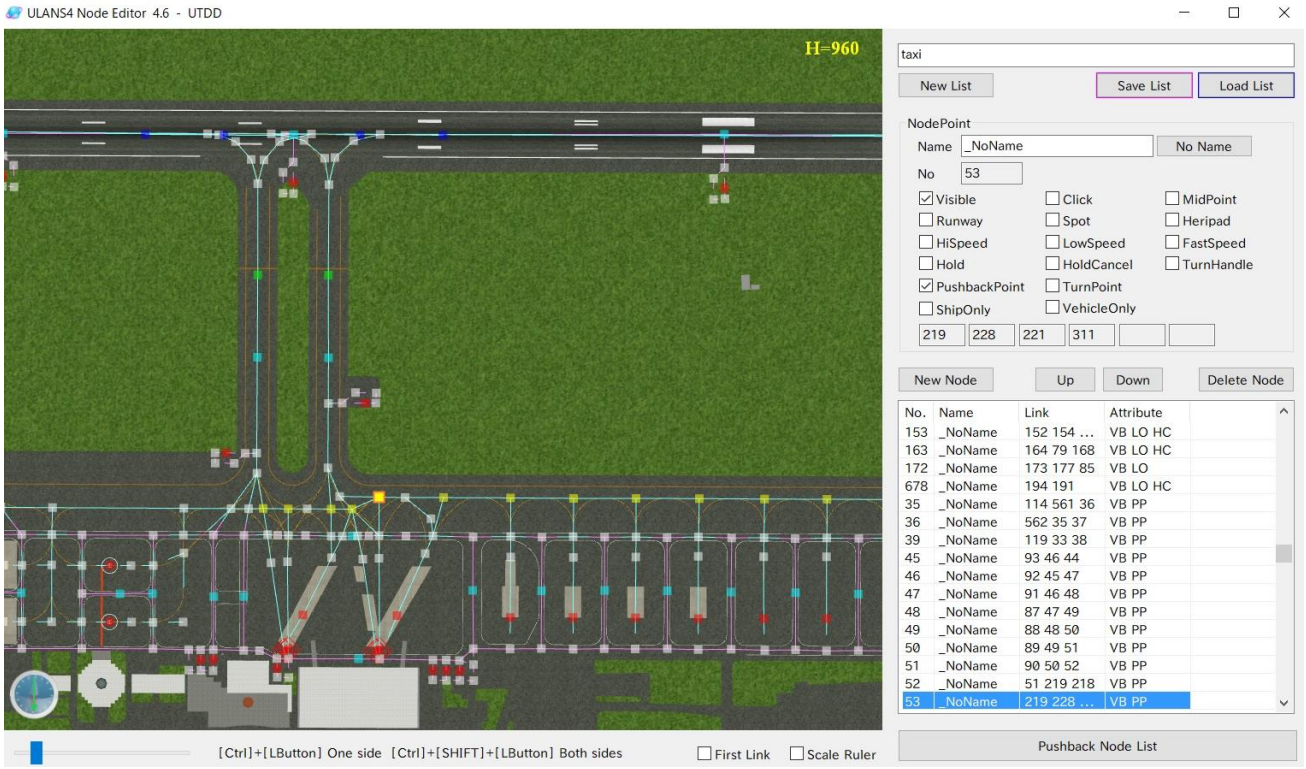
Example of distance between Tokyo and Dushanbe
DUSHANBE(38.32.06N,068.49.05E)

TOKYO（HME=36.33.44N,139.45,40E）

DISTANCE=6109,180m (6109km)
Bearing
Dushanbe Tokyo 68Deg15Min
Tokyo Dushanbe 295Deg13Min

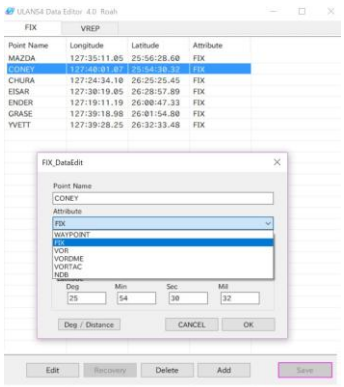
Node Editor

Node Editor is used to create/edit nodes for aircraft/vehicles on the ground.



Data Editor

Data Editor is used to create/edit fix and visual reporting points data for aircraft in the air.



Ship Editor

Ship Editor is used to edit parameters of the aircraft.

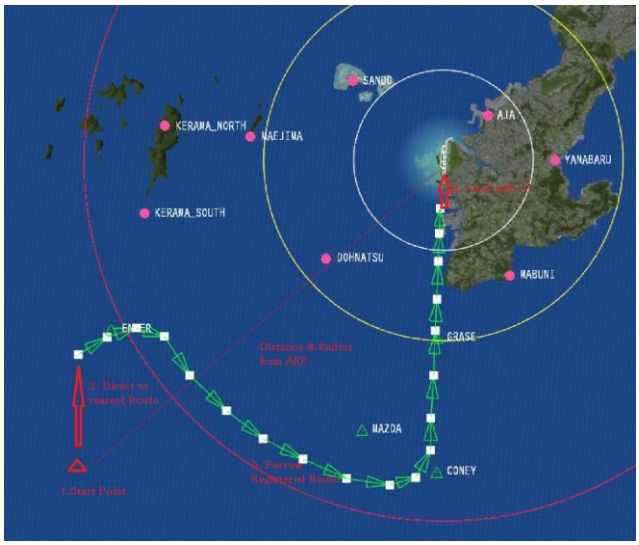
Window Editor

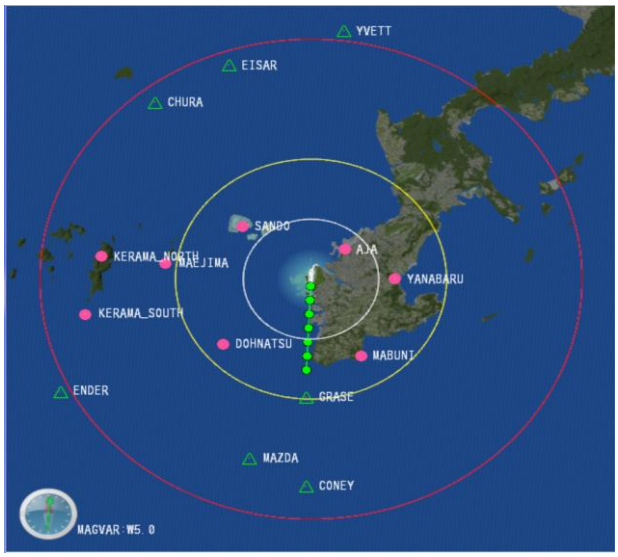
Window editor enables multiple planes to fit into one screen.

Aircraft Manuver in the air

1. Initial aircraft manuver in the air is defined by values set in the scenario editor.
2. The aircraft is shown on the Radar console at the position specified by editor with altitude and speed.
3. From the position specified by editor aircrft flys along the route to the destination (usually final destination is specified spot in the airport).
3. If the initial starting point is not, for instance, on the predetermined route the AI drives the aircraft to the nearest possible points on the route.

CORAL SOUTH ARRIVAL
1. Initial Point is
RWY36





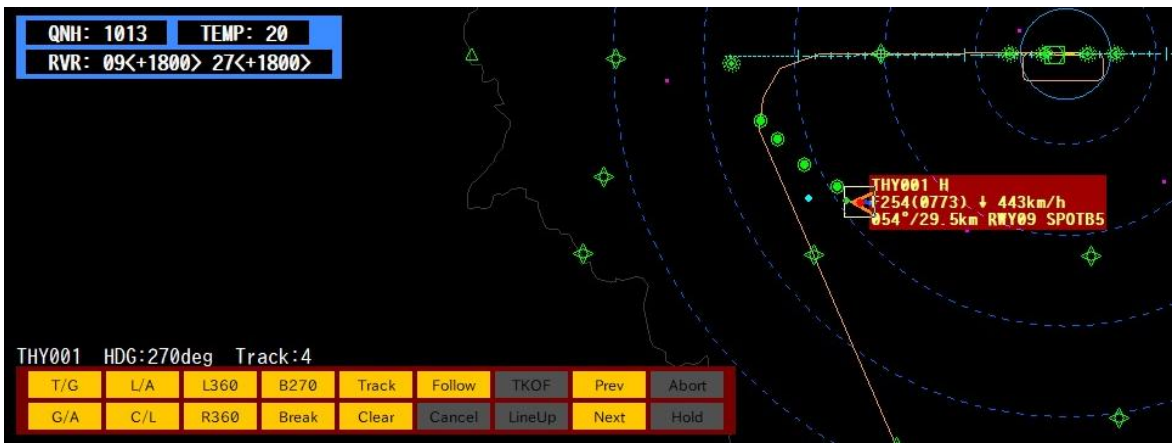
1. You can show “fixes” and “visual reporting points” by route editor.
2. Registered route “CORAL SOUTH ARRIVAL ” is shown by loading “CORAL_SOUTH_ARR”.

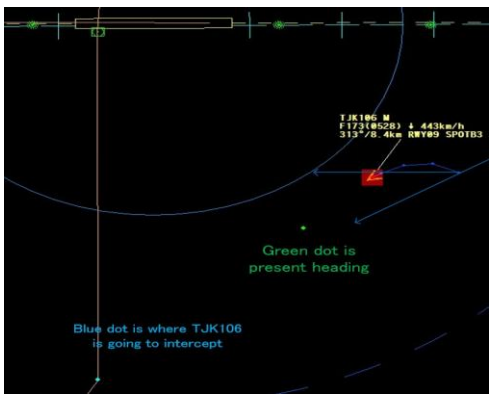
Control of the aircraft in the air.
Aircraft in the air (about the speed it is also true aircraft on the ground) can

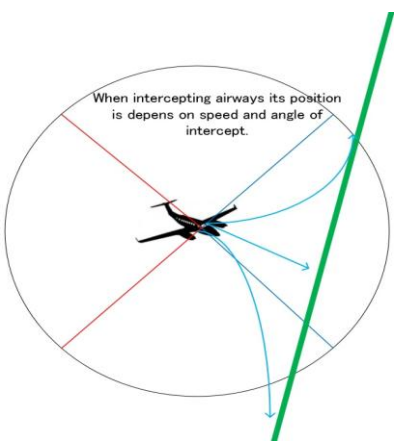
manipulate using the Command.
For e.g. Heading (H270, V015) Altitude(A0150 E0150) Speed(S050)
When applying these commands you have to always in mind the existence of AI.
1. Vector heading is in some cases might be over ridded by AI. In the case below VCT:300deg seems to be accepted. But it will soon be canceled by AI and aircraft proceed direct to the PETIN.
2. Second picture shows Track command and heading command applied at the same time. In this case heading command over ride track command. (Track command does not work. If you want to work track command cancel heading command by entering H+Enter/Set)

.Eg. Vector command vs IA

Eg. Track command and Heading







Airway intercepting angle and speed

ALTITUDE Indication

ElvBase=ON

eg. H022(0300)= 2215m (3000m) (2215+785=300)

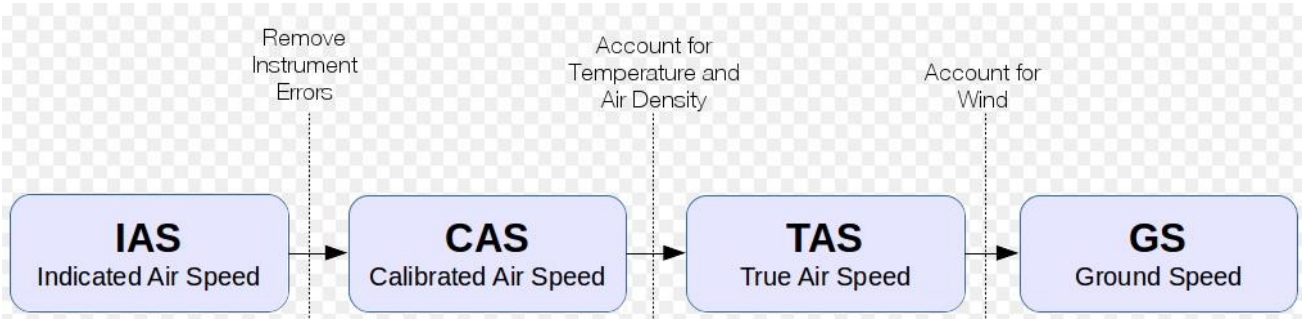
ElvBase=OFF

eg. F131(0400)= 13120ft (4000m)

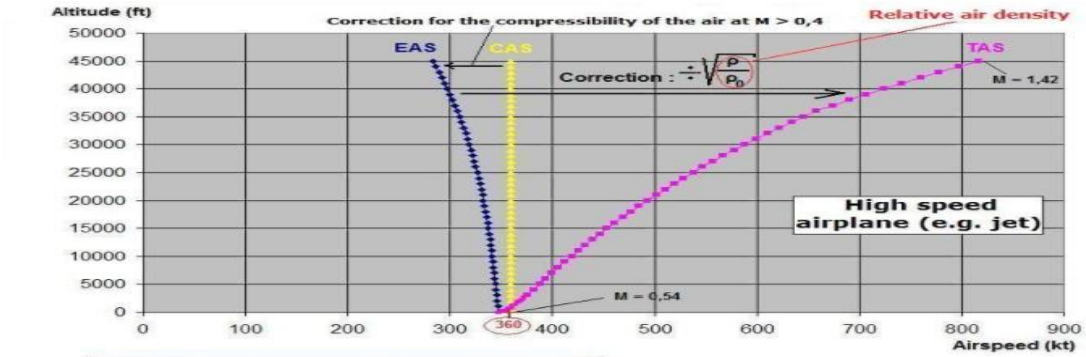
eg. H022(FA098)= 2215m (10000ft) (2215+785=300)

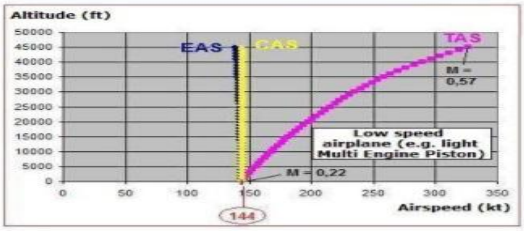
ALTITUDE and Speed

Pilots fly aircraft with IAS while the controllers control aircraft using GS.

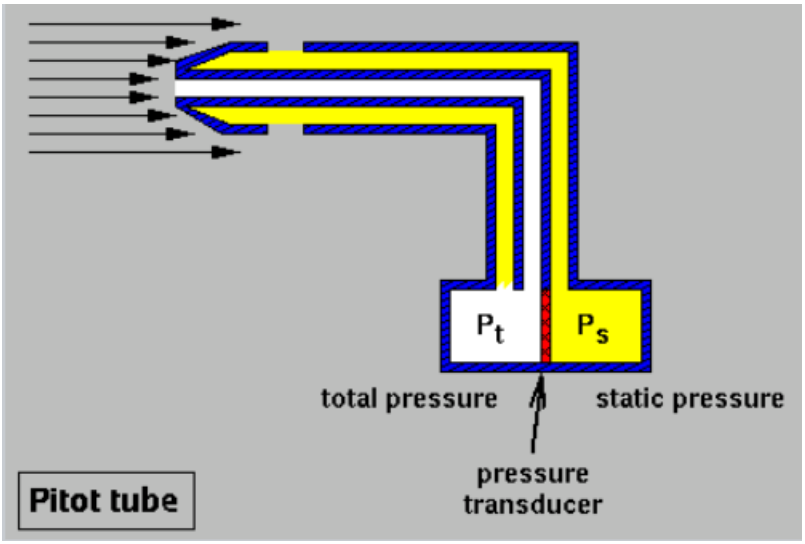


Note. EAS (Equivalent Air Speed) is CAS corrected for compressibility. It is also the airspeed at sea level in the International Standard Atmosphere at which the dynamic pressure is the same as the dynamic pressure at the true air speed and altitude at which aircraft is flying.





NOTE



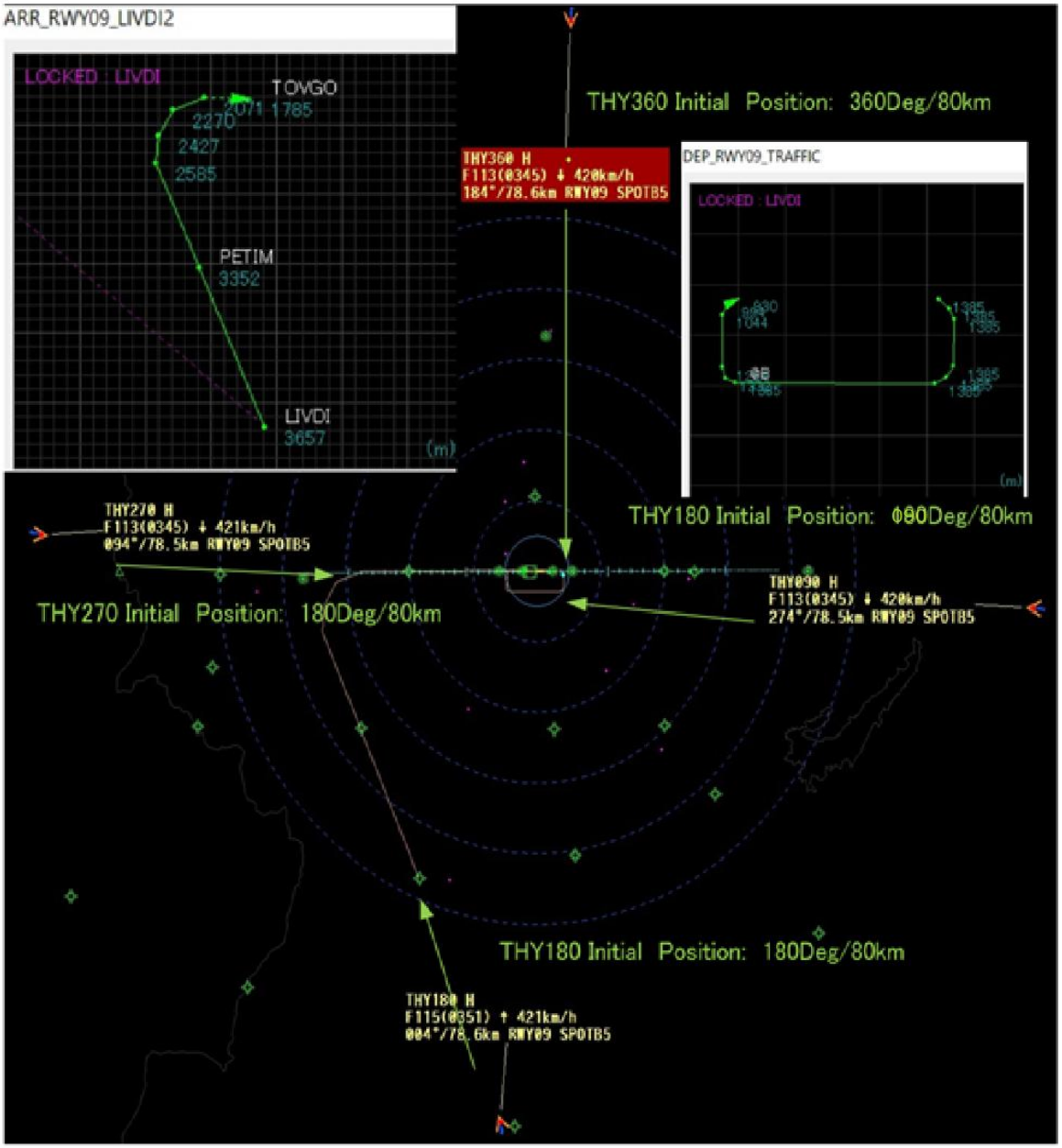
Aircraft speed is calculated as the difference of total pressure and static pressure in the Pitot tube.

Initial Altitude Heading and Speed.

DEFINED ROUTEs:

1. ARR_RWY09_LiVDI2
2. APP_ILS_VORDME_RWY09_2
3. RWY09
4. DEP_RWY09_TRAFFIC
5. RWY09

Initial HEADING: Shortest Routes to the Defined Routes
Initial ALTITUDE: 3500m--------→ Route Altitudes
Initial IAS: 350km----------→444km



Aircraft　Manuver on the ground

AIRPORT FLAT MAP and NODEs

While on the ground aircraft movements is controlled by AI function and Nodes characteristics.

For instance landing aircraft clears runway to the taxiway to where correct connection of the nodes are available. But, even if the route is available with the correct connection of the nodes, if her speed is not slow enough for the safe exits from the runway that particular tax way will not available (done by AI). So it is very important that at least two conditions should be met to select taxi way. She stops when she founds the other aircraft at the exit of her taxiway. After clearing conflicts, she commences taxi to her destination spots. These are also done by AI functions and this will greatly reduce the load of the instructor.

Each node has attributed particular characteristics.

On ground console you can steer the aircraft by clicking the route.

You can also use commands in the command bar.

[**Visible(VB)**] Used in this scenery. When not checked it is shown in filled black on the node editor, it could be for future use.

[Click(CL)] Green circle, at this node you can change moving directions by click.

[MidPoint(MD)] Light blue circle. Set at the midpoint of two nodes. At this node you can change moving directions by click.

[Runway(RW)] Blue circle. Set on the taxiway at Entry/Exit points to/from the runway.　At this node you can change moving directions by click.　In case of Node name and taxiway name matches, you can use them in command also.

[Spot(SP)] Red circle on the screen

Aircraft　Move linking nodes.

TAXI

1. When RWY27 and spot B3 are selected the most plausible route (pink line) is automatically selected. In this case, route selected by system is depicted by pink line. The aircraft move from spot B3 to runway end via taxiway E.

2. You can change taxiway by clicking a node/nodes between RWY27 end and spot B3. Click D(shown by red circle) then the route is revised. New route laid out by system is from B3 to RWY27 end via D3.

3. The third example is the case click on E. In this case the aircraft will move from B3 to runway via E for intersection take off.

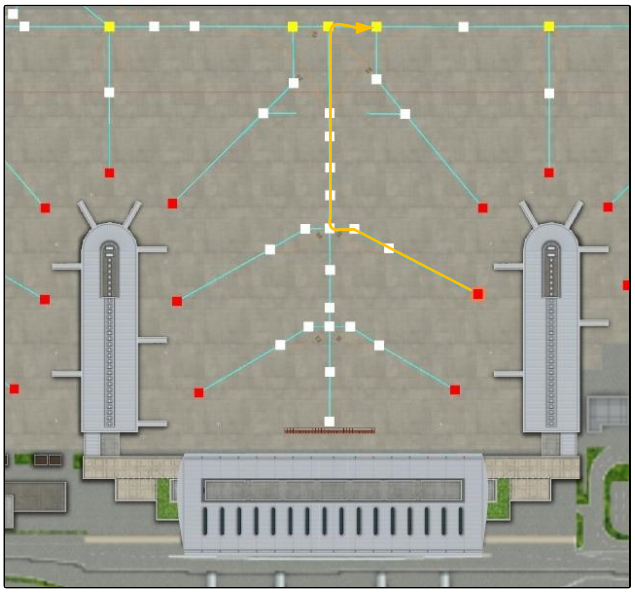
Push Back

[SPOT(SP)] Red square.

[Pushback Point(PP)]

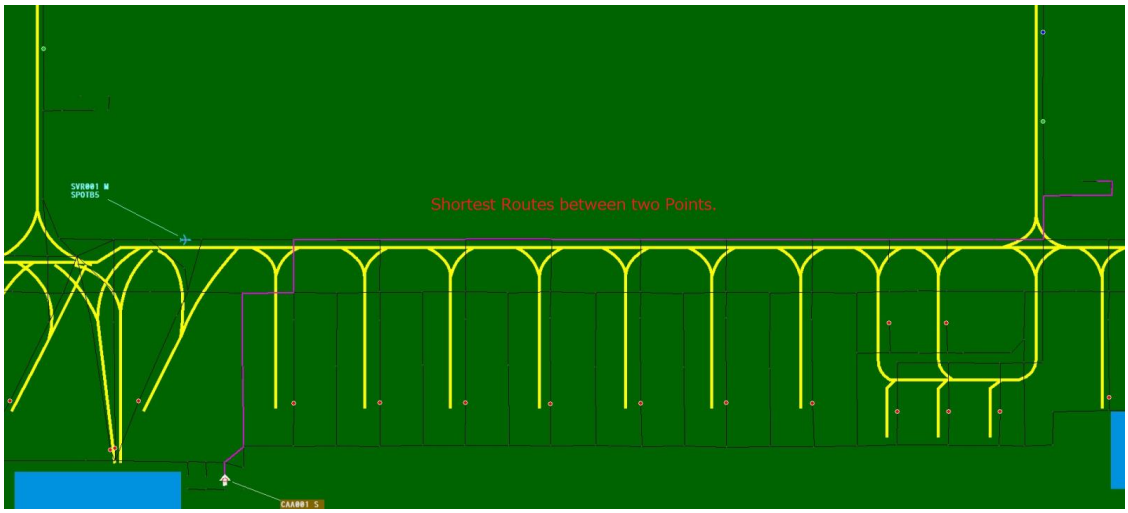
Push Back is done along the default routes. At this node aircraft pushed back to face to taxi to the departure runway.

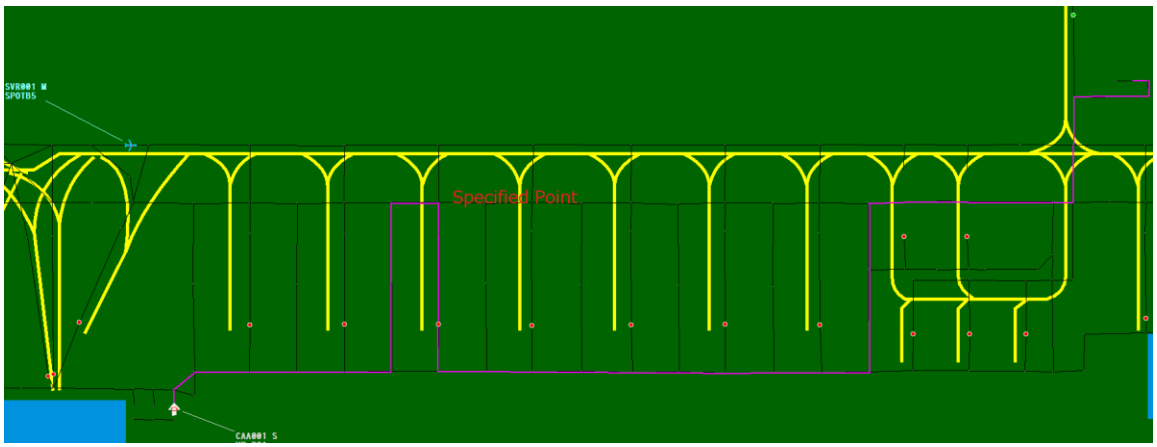
Push back is done along the nodes. Red square is a spot. Yellow is turning point. White squares are nodes in between.



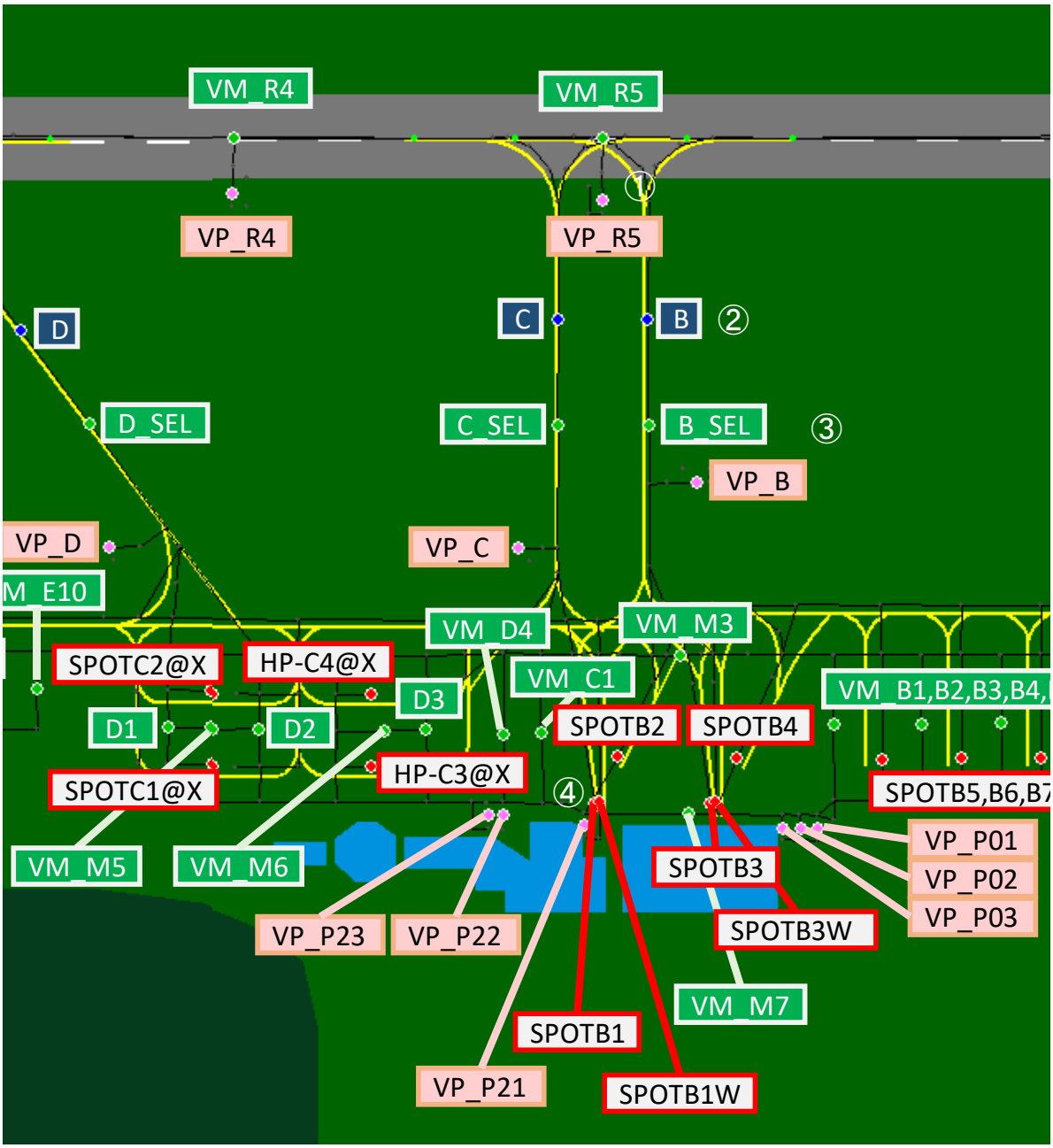
The TAXI way follow me can be managed by the same way as the aircraft.

(NOTE: Routes with VO attributes are only for vehicle. These routes are not available for aircraft.)



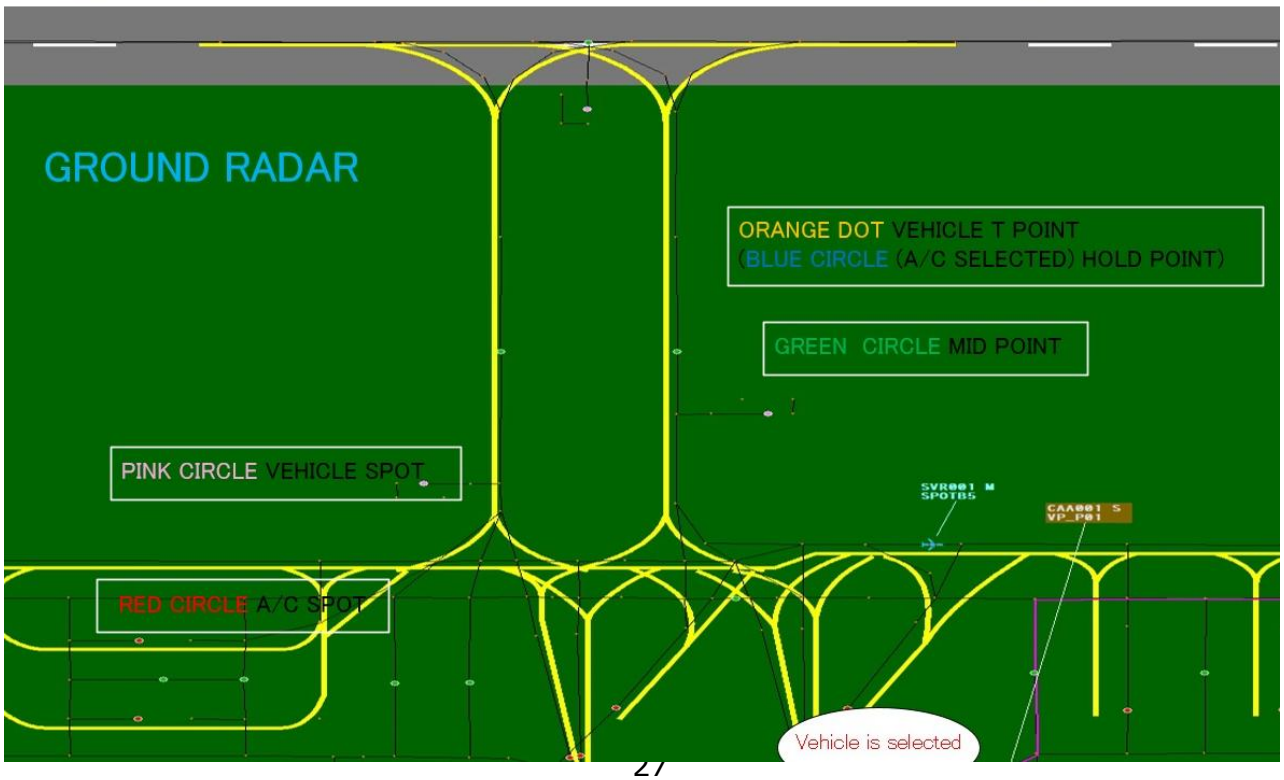


Nodes



①(Pink Circle)536 VP_R5 665 VB SP VO (Red Square)
Vechicle Only Spot with VisiBle atribute
②(Blue Circle) 159 B 143 161 VB CL HD LO (Green Square)
Click,Hold,Low speed with VisiBle
③(Green Circle) 161 B_SEL 608,159 VB CL MD (Light Blue Square)
Click,MiD point With VisiBle
④(Red Circle) 25 SPOTB1 574 574 VB SP (Orange Square)
Spot for aircraft with VisiBle


NODE DITOR
BLUE VB RW HI
WHITE VB LO HC
GREEN VB CL HD LO
LIGHT BLUE VB CL MD
RED VB SP VO
YELLOW VB PP
RED VB SP HP LO
RED VB SP


GROUND RADAR
ORANGE DOT VEHICLE T POINT
(BLUE CIRCLE (A/C SELECTED) HOLD POINT)
GREEN CIRCLE MID POINT
PINK CIRCLE VEHICLE SPOT
RED CIRCLE A/C SPOT
Vehicle is selected

Function of Consoles

Displays

1. WINVIEW
2. WINSNA
3. System Console
4. WINCTRL
5. WINSHIP
6. WINRADAR
7. WINGROUND
8. WINPILOT
9. WINCONSOLE
10. WINPAD

Node Editor

1.System Console

Close **4.5.13 Code: ROAH Longitude127:38:45 Latitude 26:11:45 Elv13 MagVar-5**

DEMO **Load Layout** **Save Layout** **UTC** 12:00:01

＊Ver. 4.5.13

[Close]

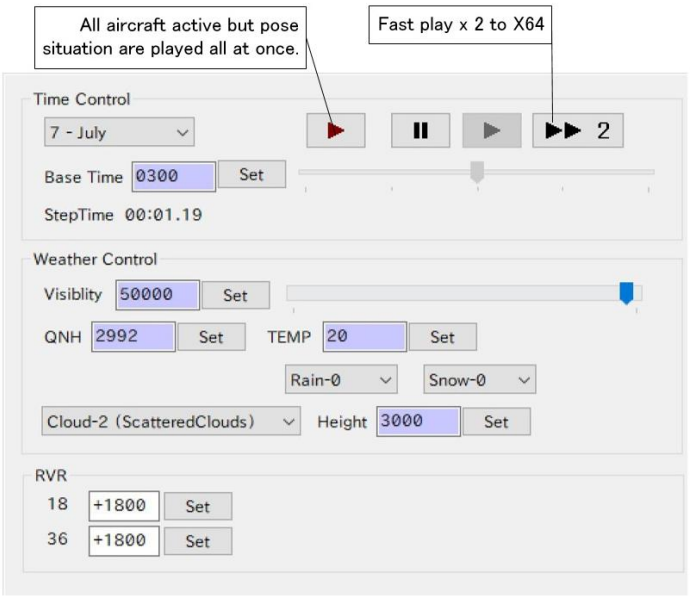
[Shutdown] 表示なし

[Load Layout]

[Save Layout]

2.Control Console

<Scenario Editor>--→aircraft tag click



Time control

Base Time/Set Displayed at System console.

Step time

Weather Control When weather conditioned by scenario background color is violet. Once reset manually it's background color become white.

Visibility

QNH

Temp/Set

Rain-0

Snow-0

Cloud-2 (Scattered Clouds) Height/Set

RVR

This value does not correlate with visibility at view console. When its value is cleared, RVR becomes not available at trainee's console.

3.View Console (WINVIEW)

CAMERA1/2/3 LEFT

FRONT

RIGHT

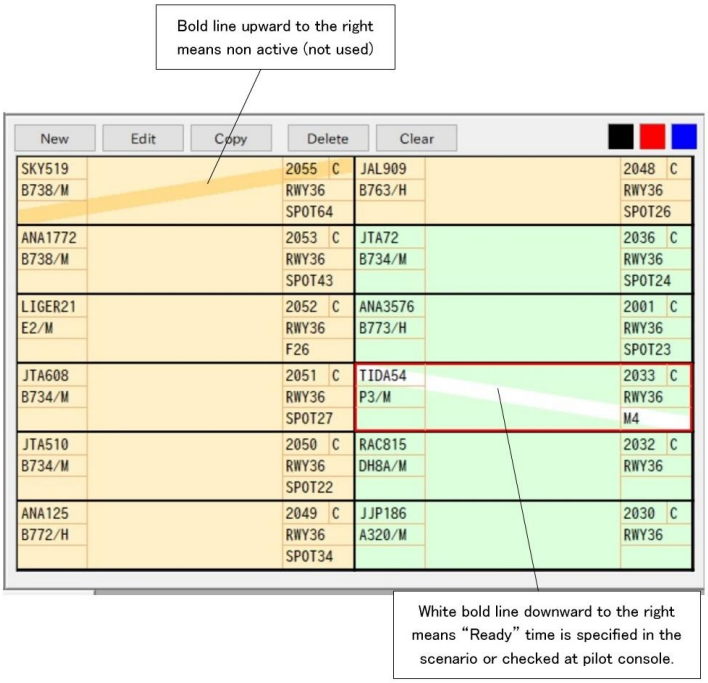
Top View

Ship View

Ship Route

4.Strip Console (WINSHIP)

<Scenario Editor>--→Strip Console



New

Edit

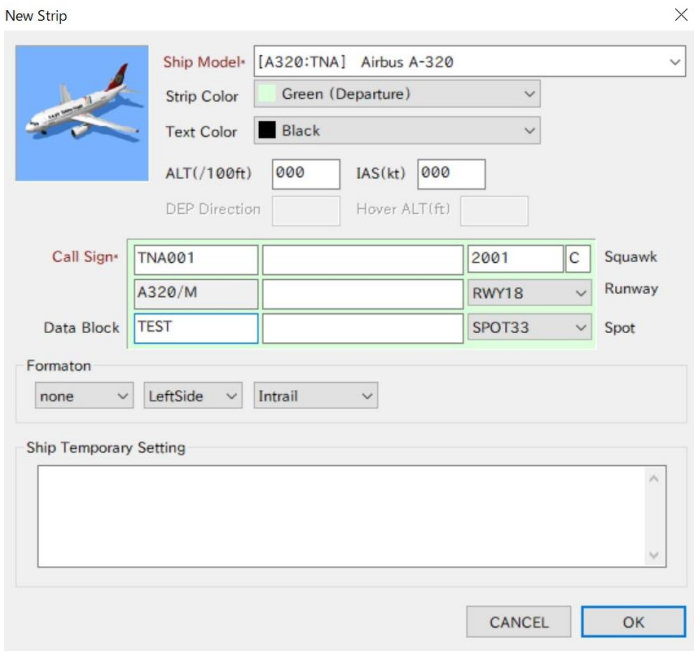
Copy

Delete

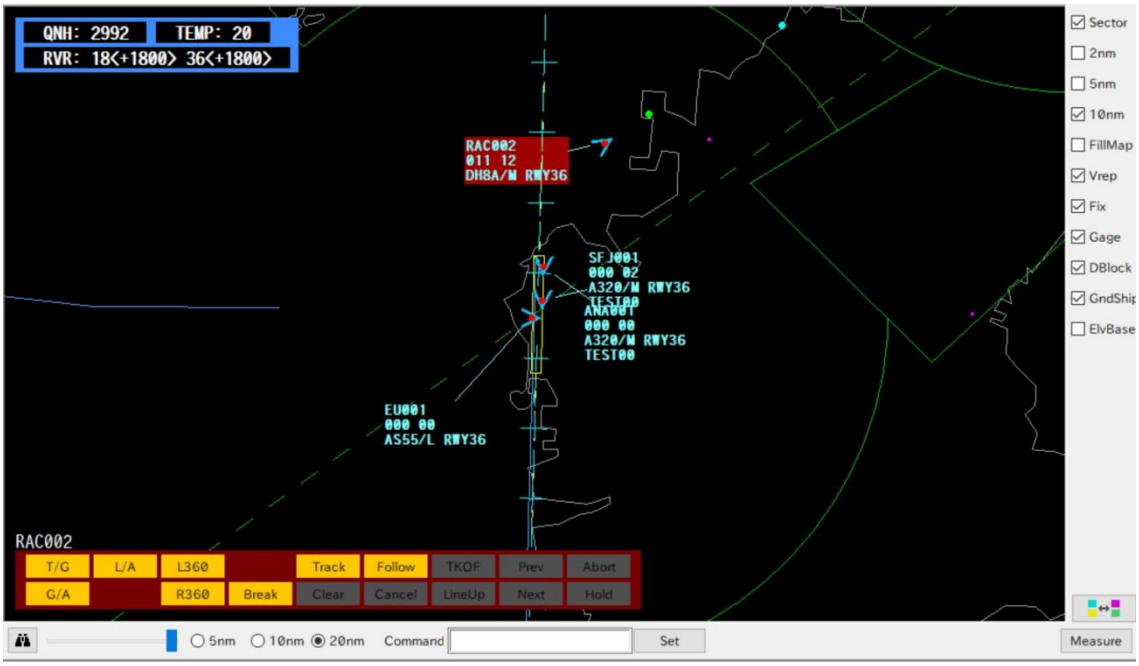
Clear **All strips are cleared.**

<Scenario Editor>--→(Strip) New

4-1.Registration Dialog of Aircraft



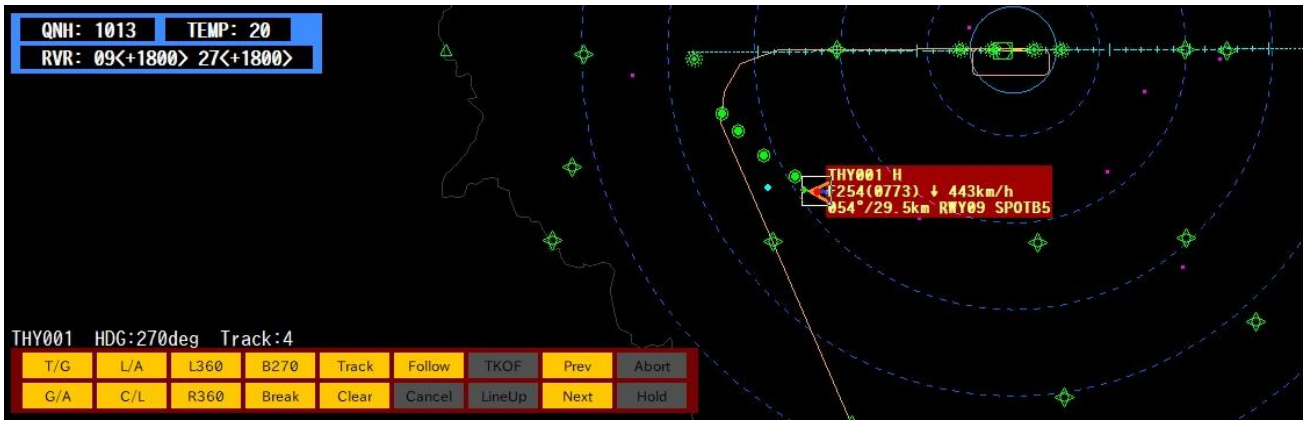
5. Radar Console (WINSHIP)



Command Buttons

Radar Console is used to control and check the position of flying aircraft (Except LineUp and Hold).

[T/G] Touch and Go **[G/A]** Go Around **[L/A]** Low Approach **[L360]** Left 360 (turn) **[R360]** Right 360 degree (turn) **[Break]** Break the formation(For military flight the leader aircraft will break from the formation) **[Track]** You can vector the aircraft by Track command. First click the aircraft then click the route you want make them fly then enter. When command is accepted the route aircraft going to intercept will turn from blue to black. By Track command you can make aircraft to intercept desired route.



The "Heading" command after track command will over ride the effect of Track command. You can cancel the effect of heading command by entering "H+Return."

[Clear] Cancel Track Points **[Follow]** Follow preceding aircraft in 2mile (3.2Km) in trail. **[Cancel]** Cancel follow **[TKOF]**

[Prev/Next] You can change the route selection. When the route "APP_ILS-VORDME_RWY09_2" is selected by pressing "Prev" air craft will proceed to "ARR_RWY09_LIVID". Pressing "Next" make aircraft proceed to "RWY09"

[LineUp][Abort][Hold]

Character Command Box

Character Command

Abbreviated Command

6.Ground Radar Console (WINGROUND)

You can make ready to use pushback routes. (MAX 4)

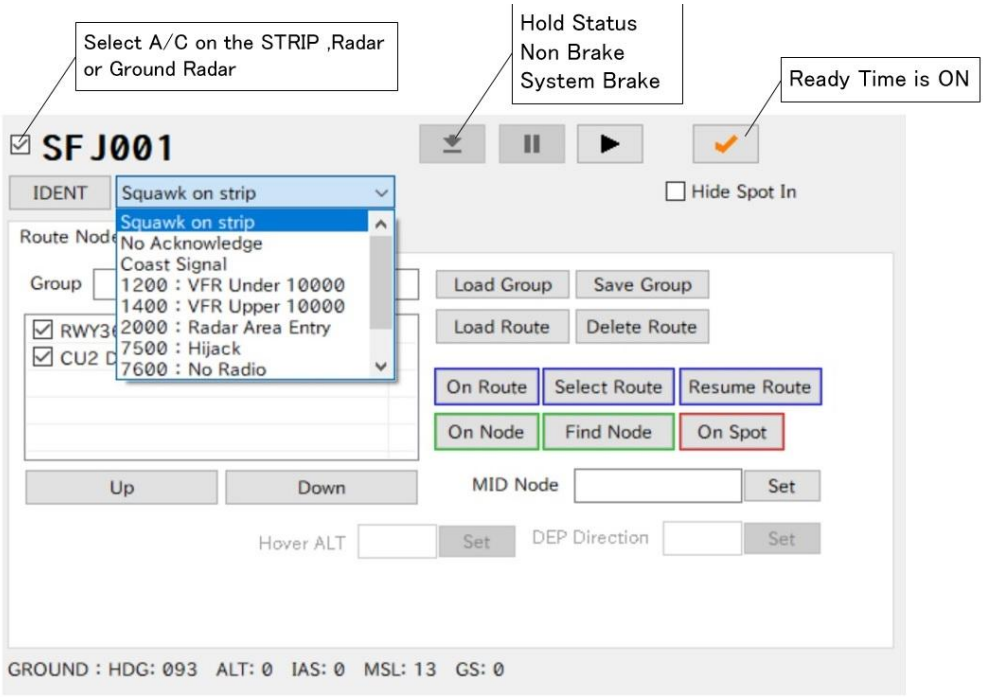
[PushBack]+[Default],[**],[****],[*****] Max 4**

[Cross] Cross Runway, cancel HOLD specified at the NODE

[High]

[Slow]

7.Pilot Console (WINPILOT)



SFJ001

IDENT

Squawk on strip

Save Group

Load Route

Delete Route

UP/Down

[On Route]

[Select Route]

[Resume Route]

[On Node]

[Find Node]

[On Spot]

[ ] Hide Spot In When checked (default) the aircraft is kept on the screen even after engine cut off. **[Select Route]**

[Resume Route]

<DEP Direction>

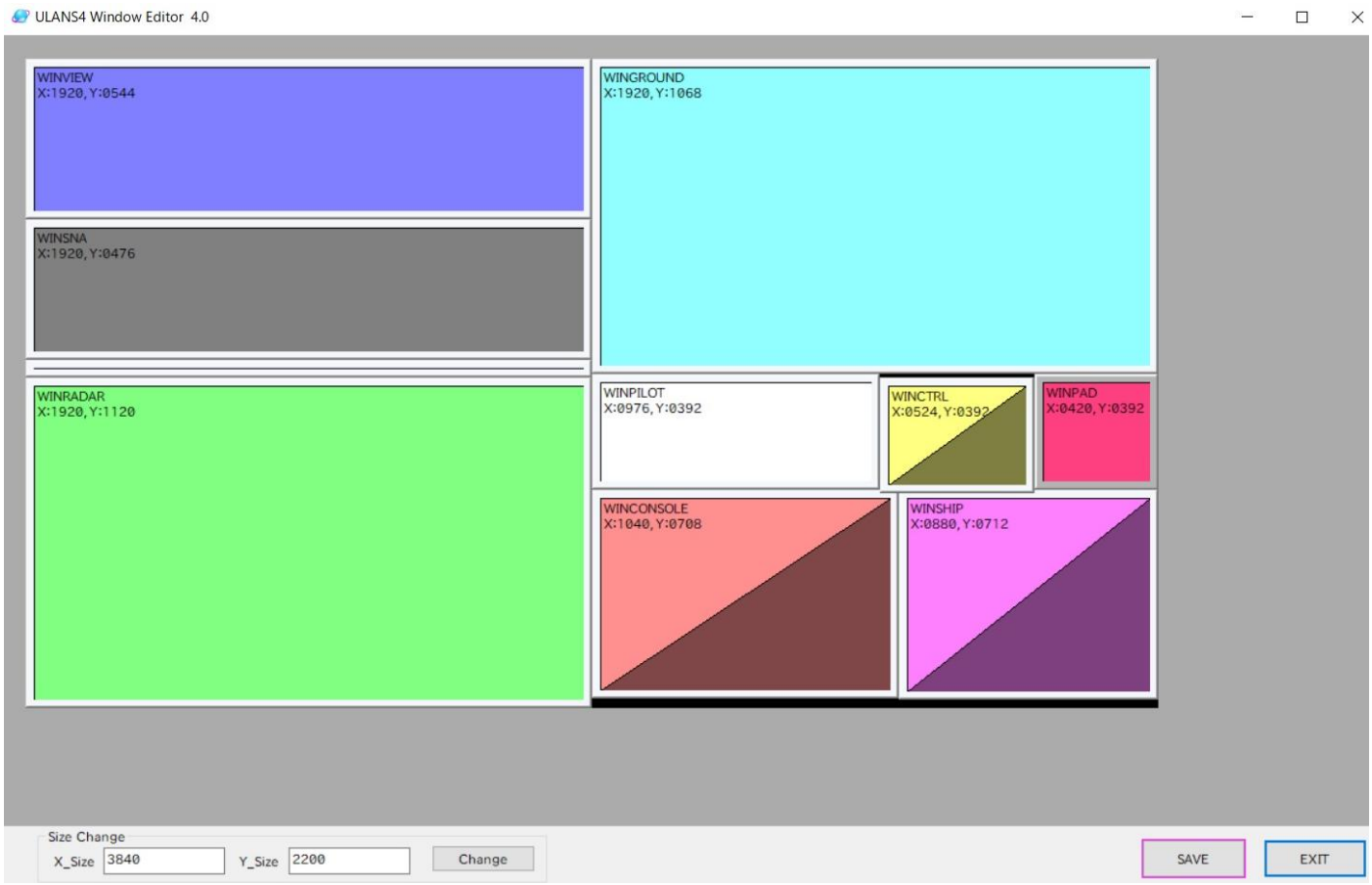
<Taxi Point>

***System brake can momentarily (10 seconds) be suspended.**

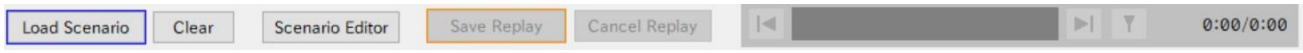
8.Config Console (WINCONSOLE)

You can change radar Font up to maximum 28.

9.Window Editor

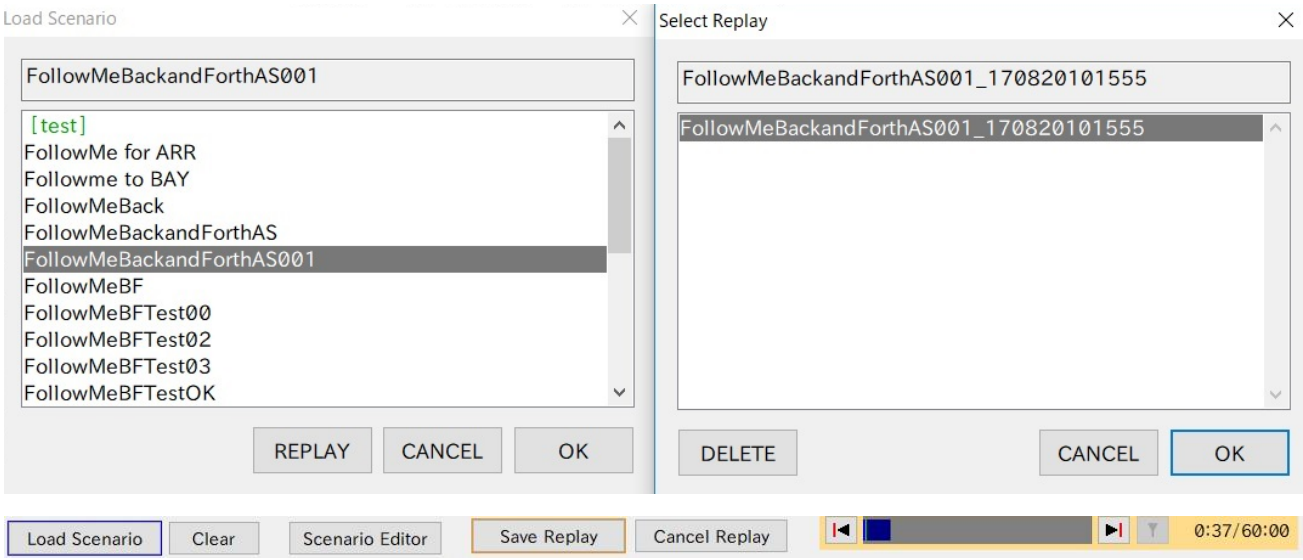


10.Scenario Console/Editor



1. Scenario Editor can be launched from Application Launcher or from Scenario console in the instructor's screen.
2. Play "Replay"

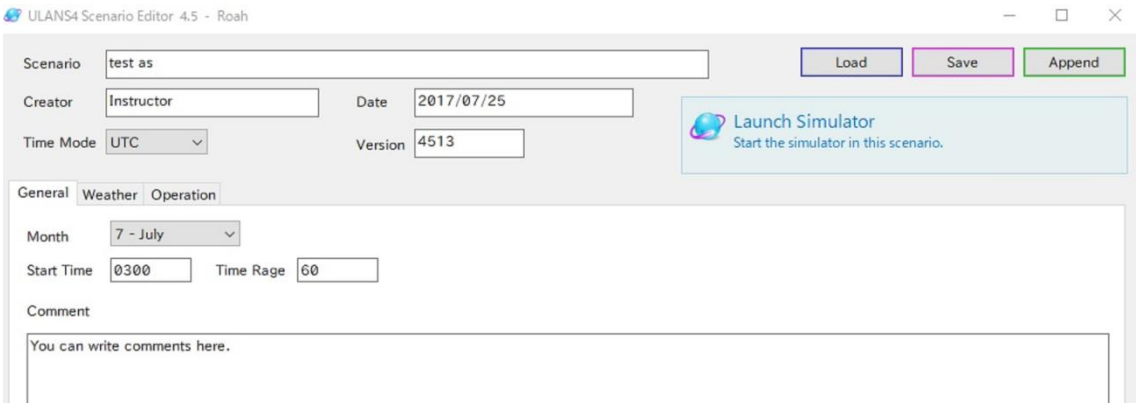
<Load Scenario> select scenario (FollowMeBackandForthAS001) **<OK>** select replay file(FollowMeBackandForthAS001_170820101555) <OK>



Replay will be replayed on condition of the scenario. Yellow back ground shows the conditions the scenario is beeing carried out.

<NOTE> You can intervene replay but intervention means end of the replay. You can interrupt replay process by simply applyaing set operations to the aircraft/vehicle. But it is better to make your intention clear by using Cancel Reply.

10-1 Scenario Name and General



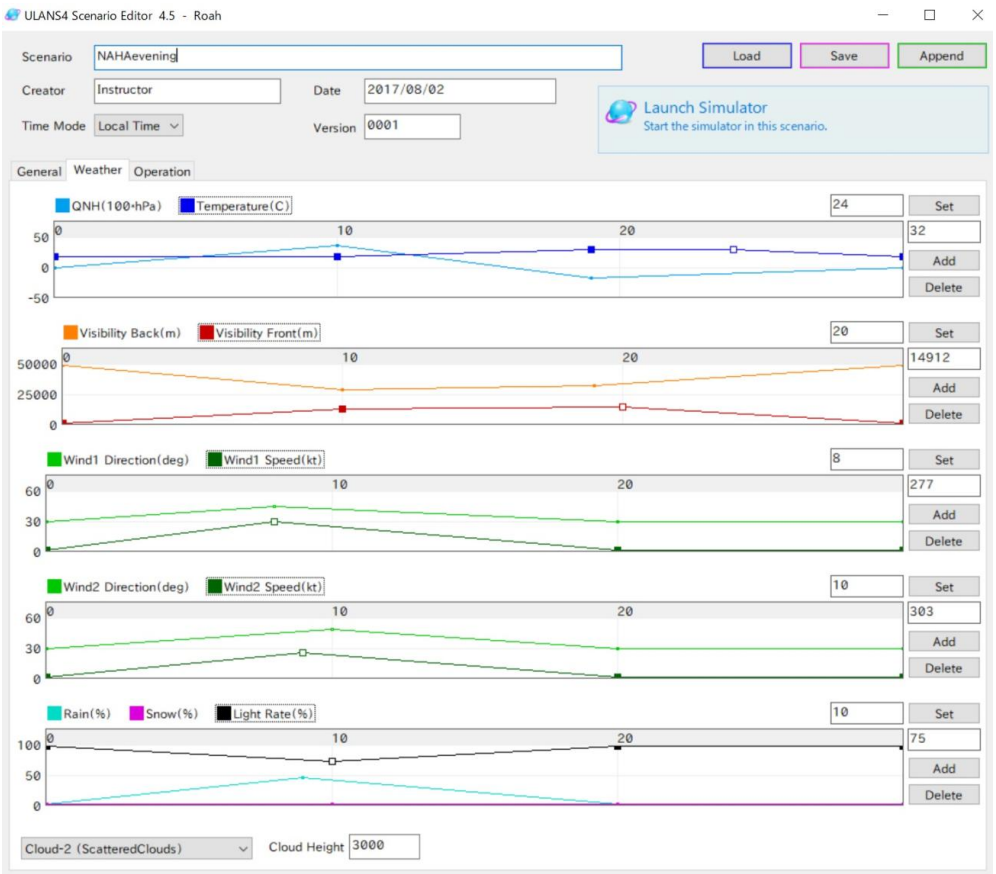
Scenario

Creator

Date

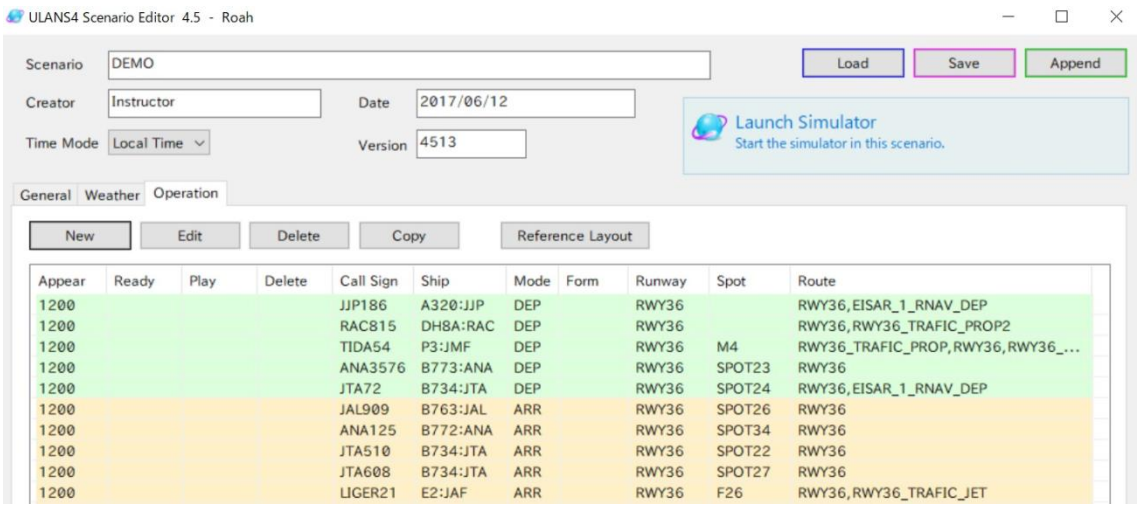
Time Mode <UTC> <LOCAL>
Version
[LOAD] [SAVE][Append]
Launch Simulator
<Scenario Editor> <General>
Month
Start Time
Time Range
Comment

10-2 Weather



QNH/Temperature
Visibility Back(m)/Visibility Front(m)
Wind1 Direction(deg)/ Wind1 Speed(kt)
Wind2 Direction(deg)/ Wind2 Speed(kt)
Rain(%) Snow(%) Light Rate(%)
Cloud-2 (Scattered Clouds)

10-3Operation



From scenario editor select <Operation>.

(Name Scenario, Date, Time mode etc,).

[New] [Edit] [Delete] [Copy] [Reference Layout]

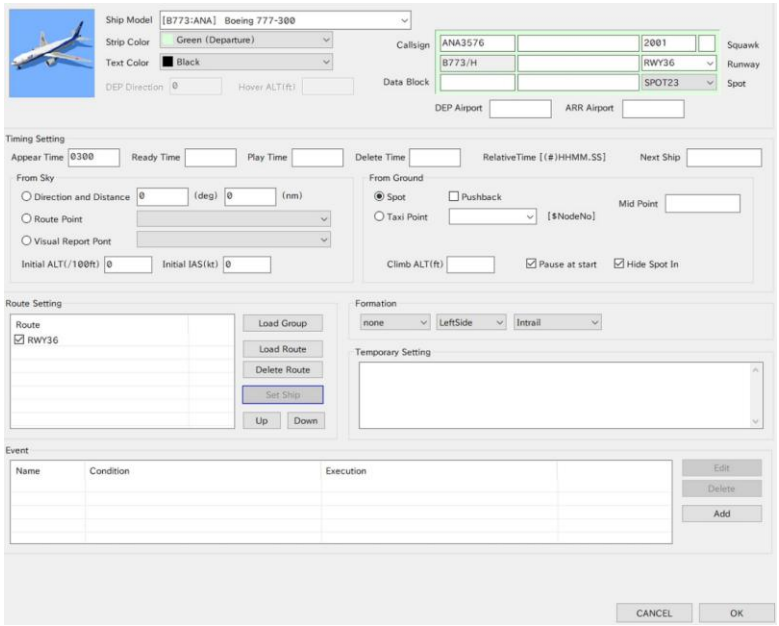
Load Scenario

1. From <Operation> select <New>

Set Aircraft information, Timing and route.

2. For New Scenario click Scenario Editor.

10-4 Operation Diagram of Aircraft



<Scenario Editor> <Operation> <New>

Ship Model

Ship Color Green (Departure), Orange(Arrival), Aqua(Departure), Pink(Arrival)

Text Color

Comment

[Appear Time] At this time flight progress strip is created and aircraft information is displayed. When [Ready Time] and/or [Play Time] is not specified the aircraft starts to move. If you want to hold the aircraft at spot specify [Pause at Start].

[Ready Time] At this time lights are on.

[Play Time] This item is specified for demonstration use. Aircraft starts to move at this time If [Pause at Start] is specified, it is ignored.

[Delete Time] At this time aircraft data will be deleted from the system.

When relative time system is used;

Departure: When aircraft reached at the end of assigned route

Arrival: Spot-in and engine cut off.

Relative Time [(#)HHMM.SS]

Next Ship At Delete Time aircraft specified here appears.

From Sky

Direction and Distance

Route Point

Visual Report Point

Initial ALT(/100ft) Initial IAS[kt]

From Ground

Spot

Pushback

Mid Point

Arrival:

Taxi Point [$NodeNo]

Climb ALT(ft)

Pause at start

Hide Spot In

Formation

none 1 2 3 4

LeftSide RightSide

Intrail (Follow preceding a/c) / Alert (all a/c take off at once)/ Combination(2 a/c paired side by side)

Temporary Setting

Load Group

Load Route

Delete Route

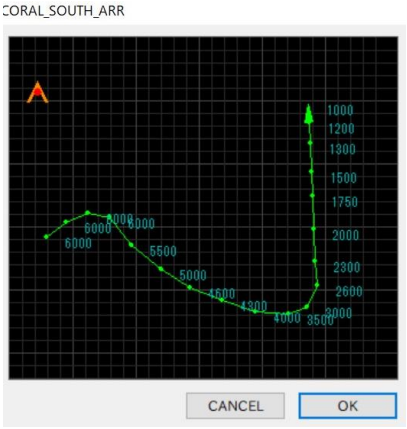
Set Ship

Up/Down

Event　Edit/Delete/Add

10-5Route Diagram

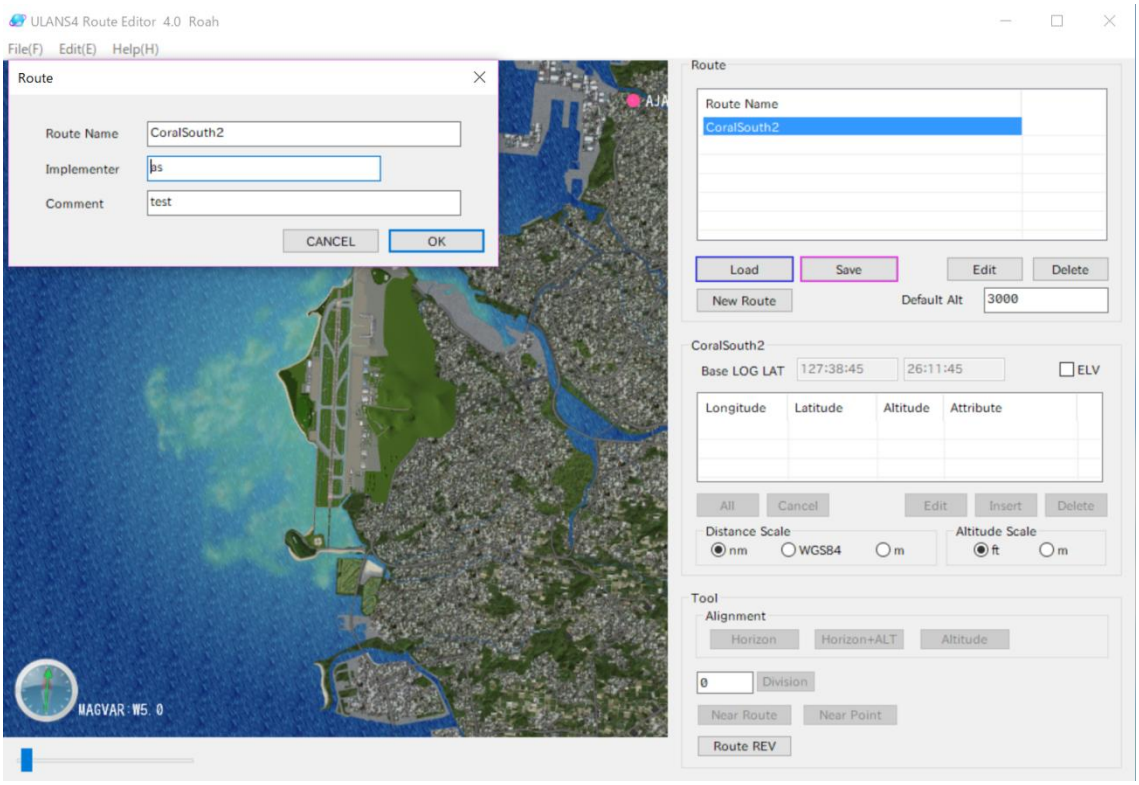
Route Map is shown　Double Click at Route　Setting



11.Route　Editor

From New Route [Route]

11-1Route



Load/Save/Edit/Delete

New Route

Default Alt

Base LOG LAT

ALL/Cancel/Edit/Insert/Delete

Distance Scale (nm,WGS84,m)

Altitude Scale (ft,m)

Tool

Alignment (Horizon, Hrizon+ALT, Altitude)

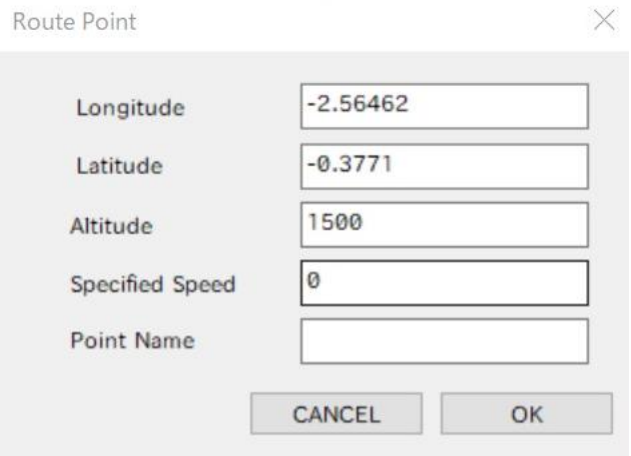
Dvision

NearRoute/Near Point

Route REV

Double click on point

11-2Route Point



12.Node Editor

New List/Save List/Load List

Node Point

Name No Name

No

☑Visible ☑Click ☑MidPoint

☑Runway ☑Spot ☑Helipad

☑HiSpeed ☑LowSpeed ☑FastSpeed

☑Hold ☑HoldCancel ☑TurnHandle for compatibility

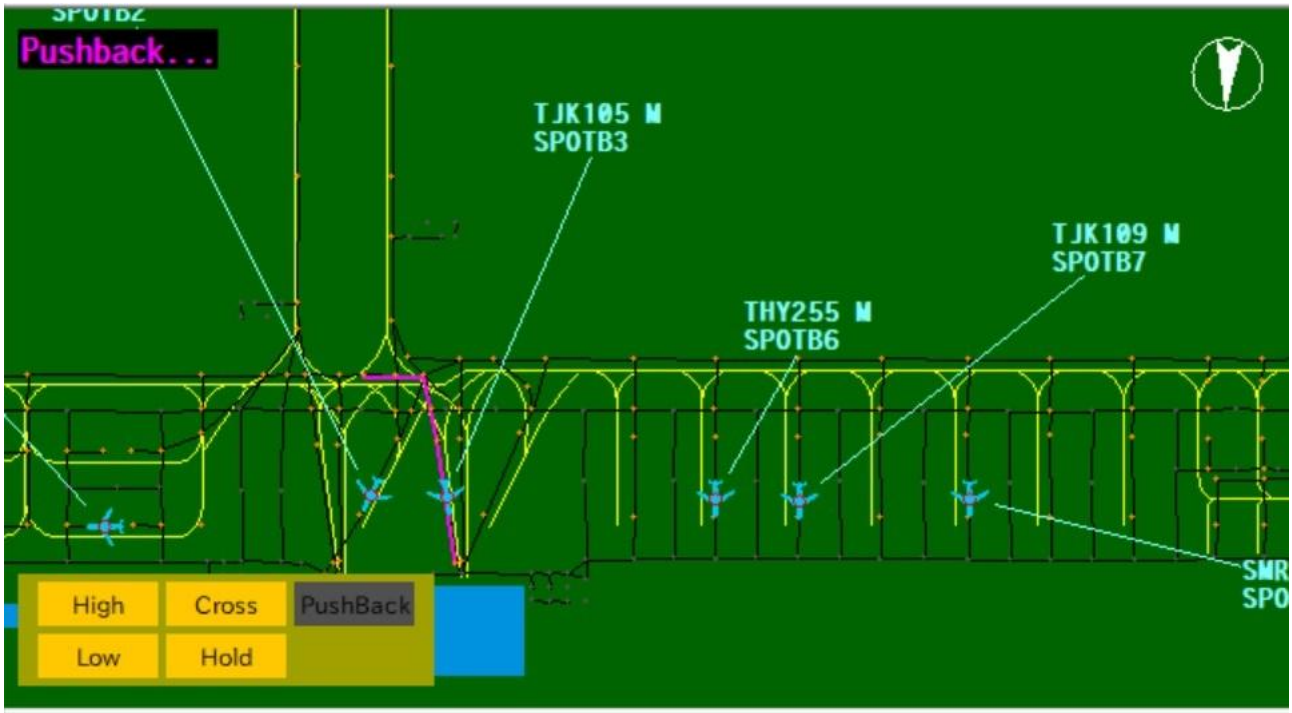
☑PushbackPoint ☑TurnPoint ☑VehicleOnly

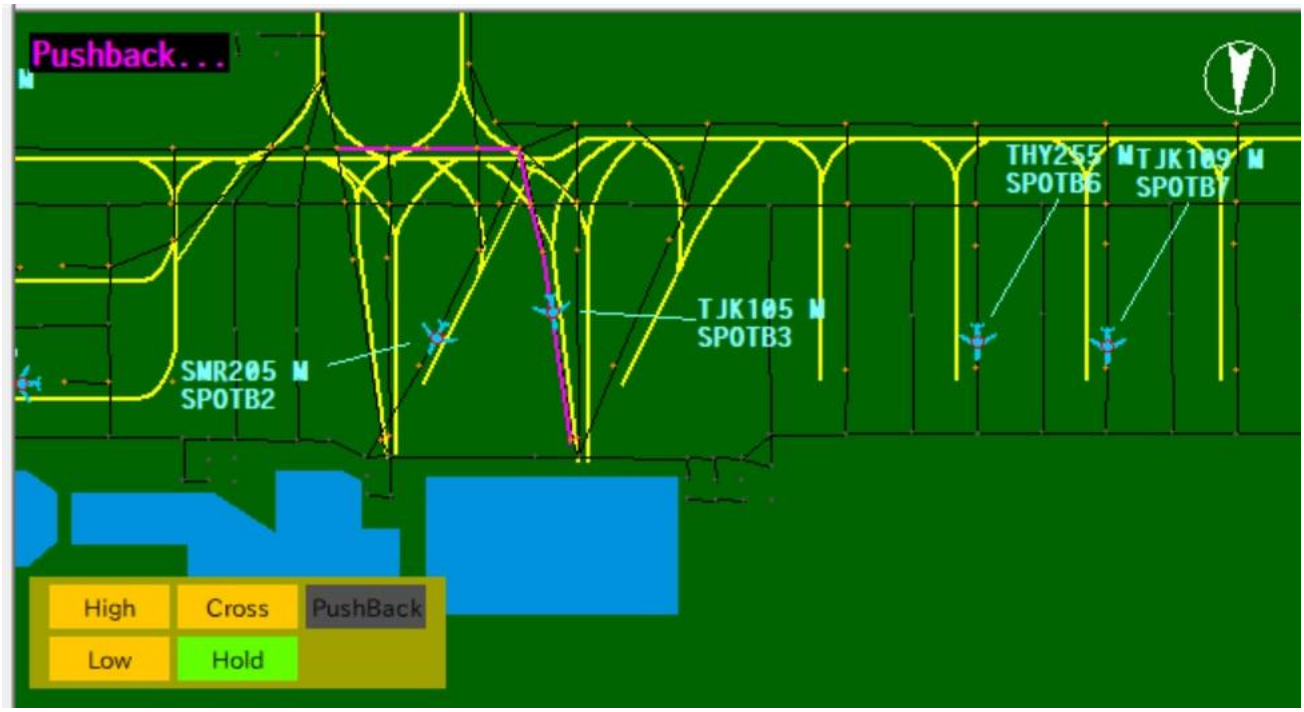
Appellation Rule

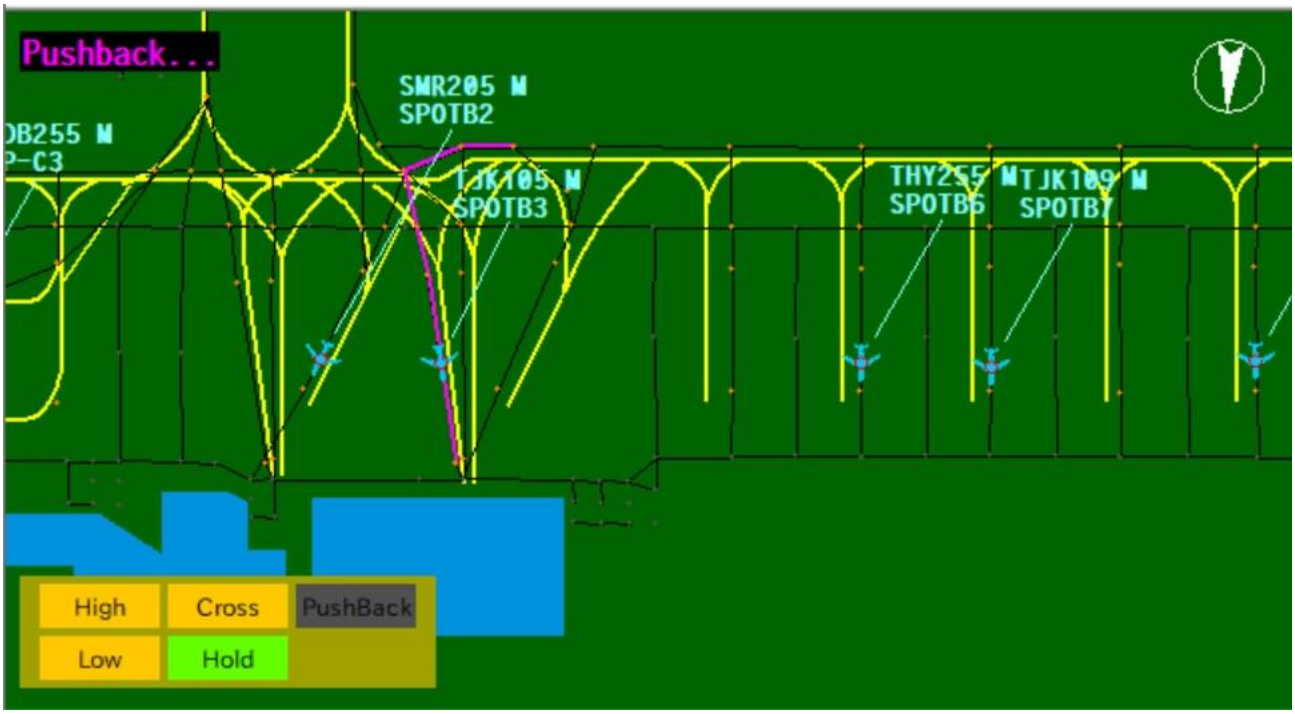
Node without specific name can be named by No Name button as "_NoName".

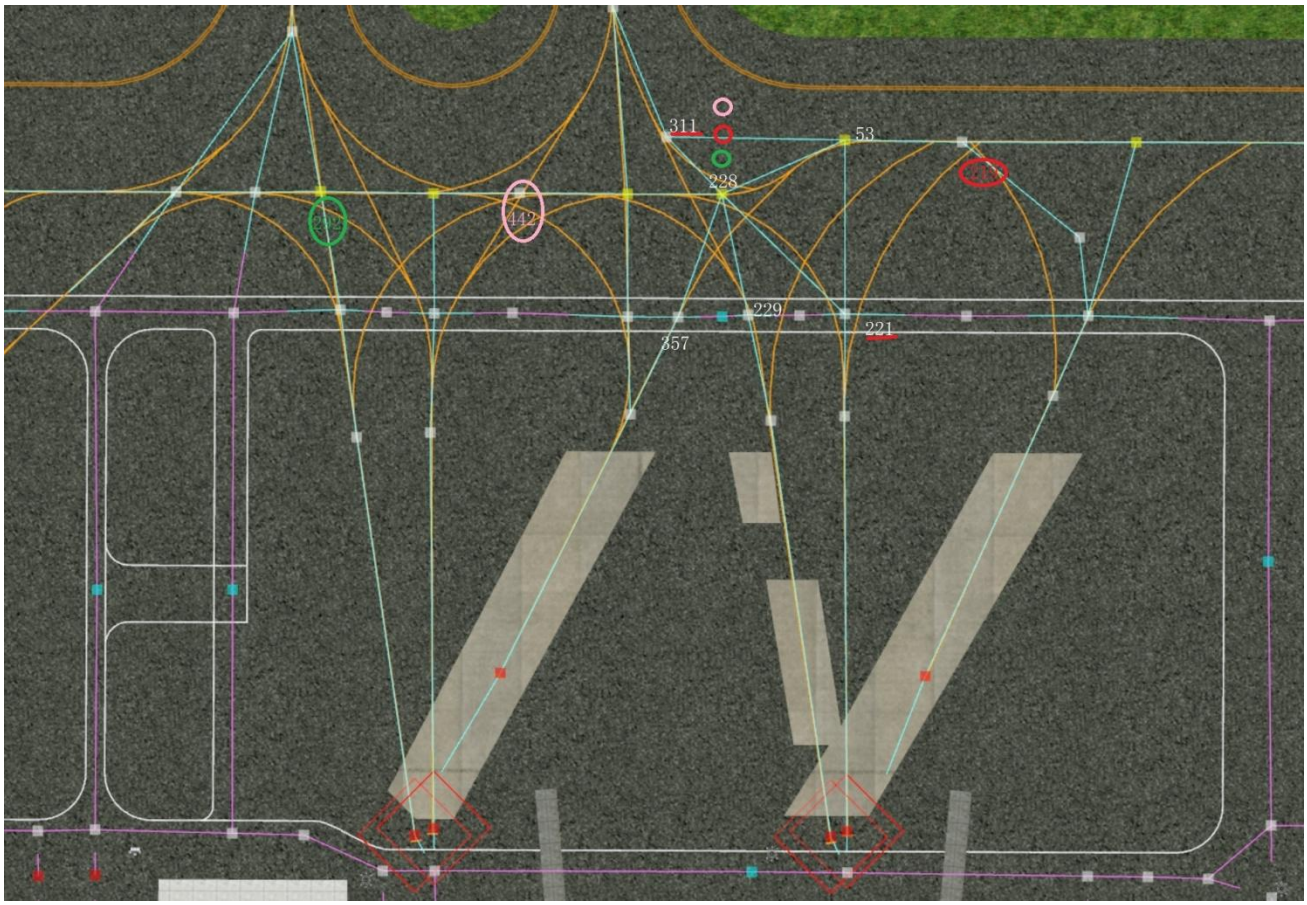
Parts of the name after underscore will be neglected.

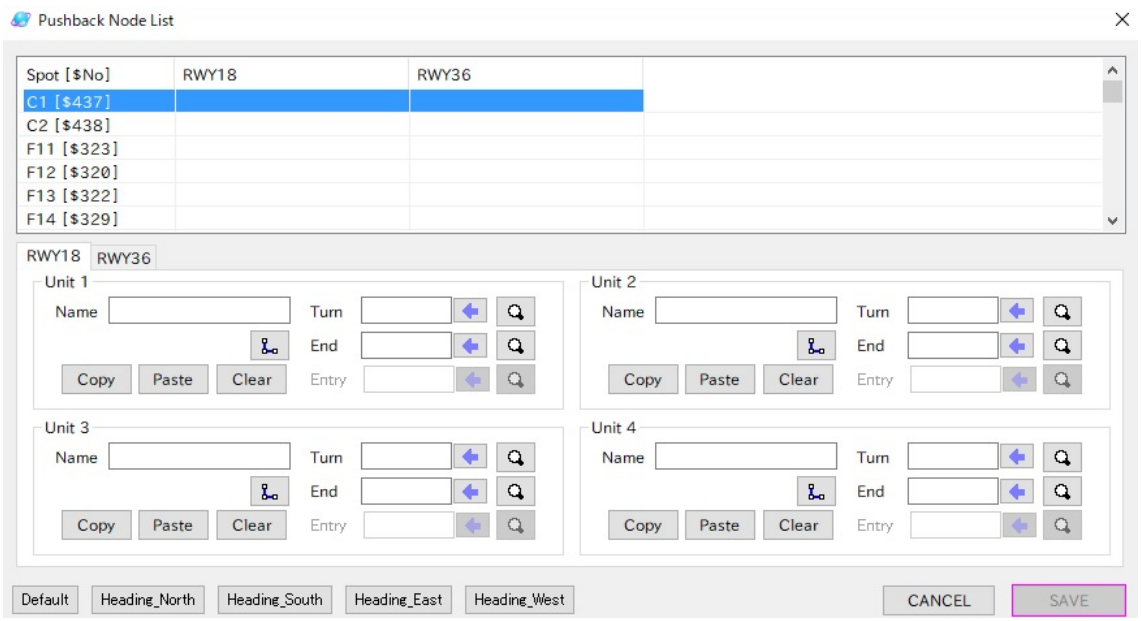
PUSH BACK




Pushback...
THY255 M
SPOTB6
TJK109 M
SPOTB7
TJK105 M
SPOTB3
SMR205 M
SPOTB2
High
Cross
PushBack
Low
Hold


Pushback...
SMR205 M
SPOTB2
TJK105 M
SPOTB3
THY255 M
SPOTB6
TJK109 M
SPOTB7
High
Cross
PushBack
Low
Hold

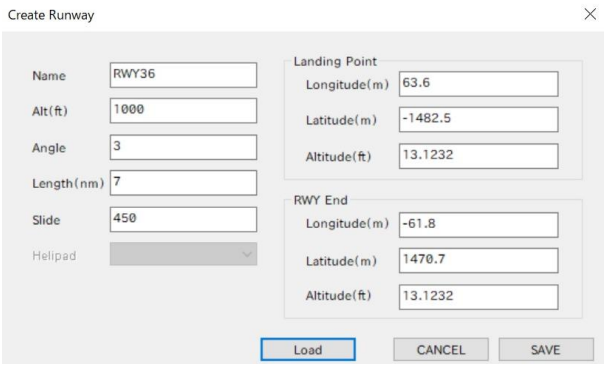




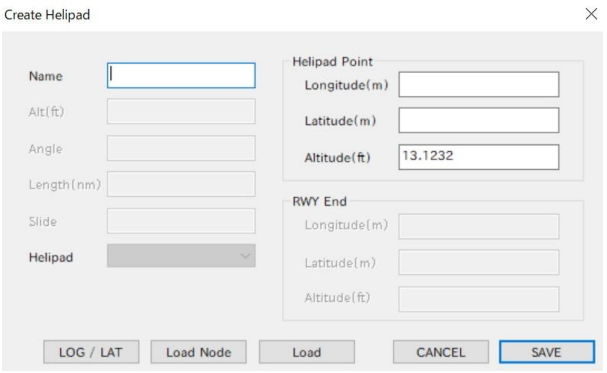
Vehicle SPOT

Move linking nodes.

Create Runway

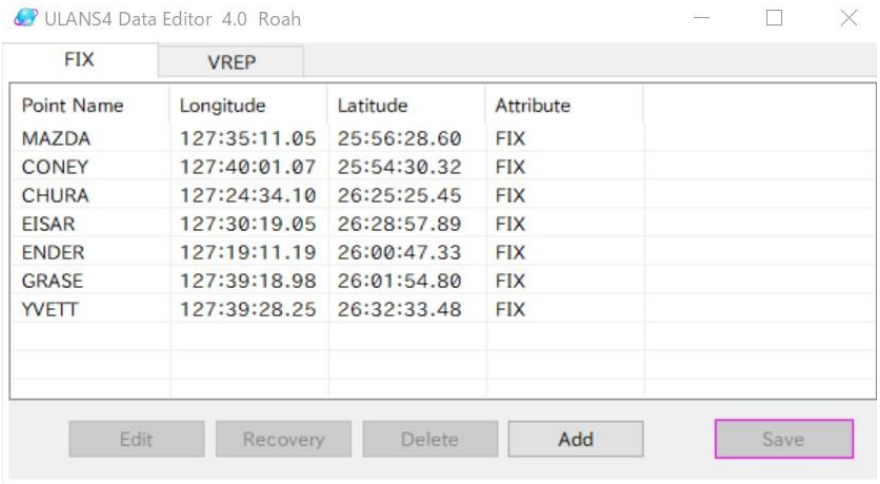


Create Helipad

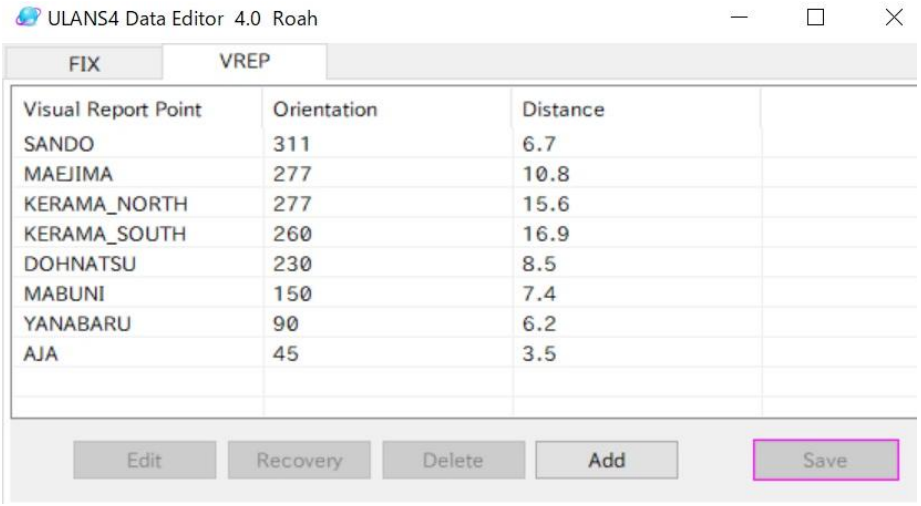


13.Data Editor

13-1Fix



13-2 VREP



14. Ship Editor

ULANS4 Ship Editor 4.0

[A310:THY] AIRBUS A-310 〈Code:A310_THY〉 Save

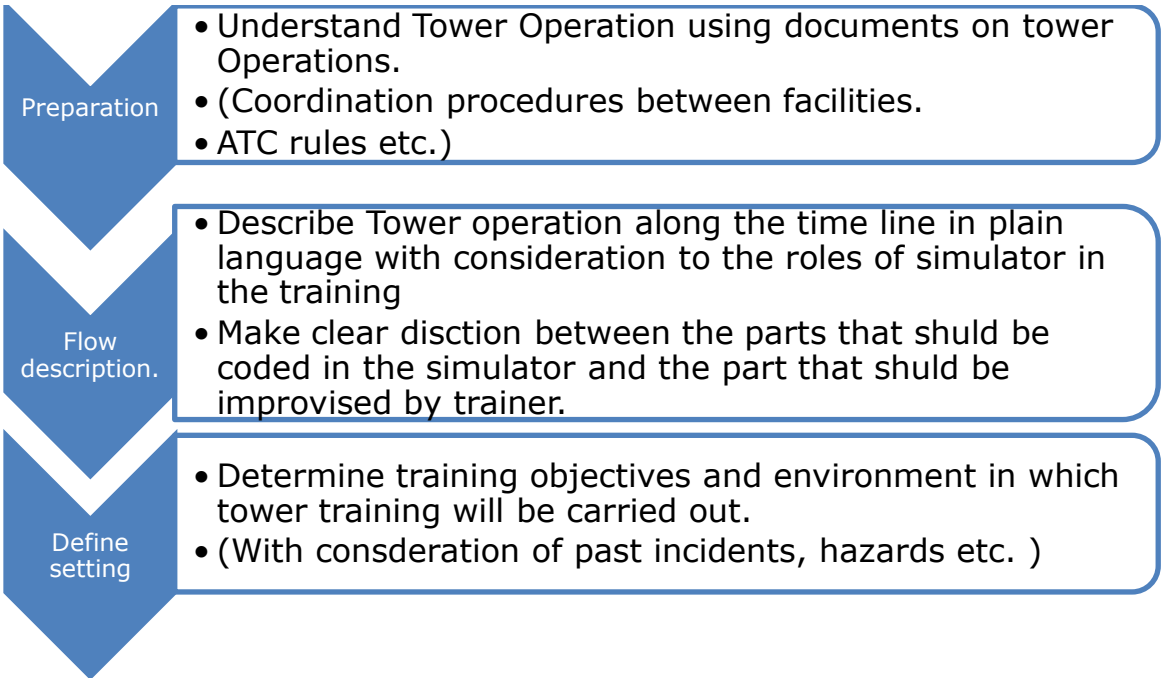
Ship Data
Code A310_THY Maker AIRBUS
Name A-310

User
Name Turkish Airlines
3Letter THY 2Letter TK Register TC-JCR

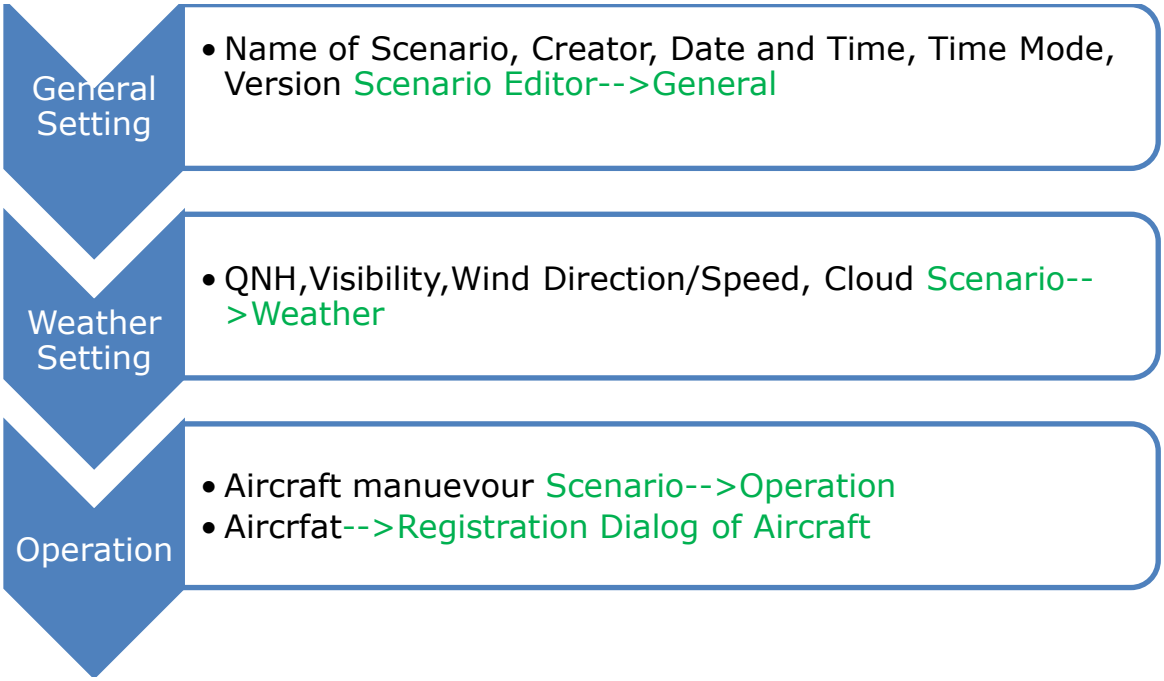
Section	Key	Value	Help
SHIP	Icao	A310	ICAO airframe name
	Wtc	H	Wake Turbulence Category
	Type	L2J	Airframe type
	Apc	C	Approach category
FILE	Model	TC-JCR.pvm	Model file name
	Sound	engine.wav	Engine sound source file name
SIZE	Weight	130000	<kg> Weight of airframe
	CenterHeight	5.5	<m> Vertical height of supposed center of gravity above gro...
	FrontLength	23.6	<m> Nose length measured from the coordinate origin
	RearLength	23.6	<m> Tail length measured from the coordinate origin
	Height	19.8	<m> Vertical height from ground contact point to the highe...
	Width	46	<m> Width from the coordinate origin to each side
	nose	16.6	<m> Length up to the nose gear
PITCH	MaxUpPitch	20	<Deg> Maximum climbing angle (+value)
	MaxDownPitch	5	<Deg> Maximum descending angle (+value)
	PitchPerSec	2	<Deg> Pitch angle changeable per second
	CruisePitch	-2	<Deg> Cruise pitch angle (pitch up: negative value (-))
	StaticPitch	0	<Deg> Static pitch angle (pitch up: negative value (-))
ROLL	MaxRoll	40	<Deg> Maximum roll angle
	RollPerSec	20	<Deg> Roll angle changeable per second
	MaxRollAngle	40	<Deg> Maximum roll variation angle (maximum roll when t...
SPEED	BaseAlt	914.4	<m> Base altitude (maximum speed with this altitude)
	BaseAltIas	444.48	<km/h> Indicated air speed at base altitude (maximum spe...
	MinIas	259.28	<km/h> Minimum indicated air speed (stalling starts from t...
	IasPerSec	2.0372	<km/h> Indicated air speed changeable per second
	TaxiIas	37.04	<km/h> Indicated air speed when taxiing
	RunwayIas	92.6	<km/h> Indicated air speed on runway (Including speed o...
	HiTaxiIas		<km/h> Indicated air speed of taxiing for alert (set as neces...
	BaseUpwardIas		<km/h> Indicated air speed of Based upward (extended)
	TopAlt		<m> Clititude of Maximum upward (extended)
	TopIas		<km/h> Indicated air speed of Maximum upward (extended)
TRACE	TraceRange	120	<Deg> Route effective trace range (route in this range is ret...
	TraceLimitSec	10	<Sec> Route trace release time (sec) (threshold time to ski...
APPROACH	Ias	268.54	<km/h> Approach speed at threshold
	Pitch	-4	<Deg> Approach pitch angle (plus or minus added to the ai...
	FlarePitch	-4	<Deg> Nose up pitch angle at takeoff (plus or minus added...
	FlareAlt	6.096	<m> Flare start altitude
	HeadDownIas	240.76	<km/h> Indicated air speed at nose down after landing
	TouchAndGoIas	148.16	<km/h> Indicated air speed at touch-and-go start
	BrakeSpeedDownRate	1.8	<Rate> Indicated air deceleration rate after landing (multip...
	ReverseCloseIas	129.64	<km/h> Reverser release speed (0 for aircraft without thrus...
DEPARTURE	Ias	333.36	<km/h> Maximum indicated air speed at takeoff
	FlarePitch	-6	<Deg> Nose up pitch angle at takeoff (plus or minus added...
	HeadUpIas	240.76	<km/h> Indicated air speed at nose up (rotation) during ta...
	LiftUpIas	259.28	<km/h> Liftoff indicated air speed during take off
	SpeedUpRate	1.8	<Rate> Acceleration at takeoff (multiplied by IasPerSec)
THRUST	MasterVolume	0.9	<Rate> Master volume rate of engine sound
	ThrustPerSec	0.1	<Rate> Thrust changeable per second
	ThrustTakeoffPerSec	0.4	<Rate> Thrust speed up rate at takeoff (multiplied toThrust...
	ThrustReverserPerSec	0.6	<Rate> Thrust reverser rate at takeoff (multiplied toThrustP...
	ThrustOffsetPerPitch	0.02	<Rate> Thrust variation rate to pitch at flight (added to Th...
	StartStopSec	6	<Sec> Engine start/stop time
	IdleThrust	0.1	<Rate> Thrust at engine idle
	MaxThrust	1	<Rate> Maximum thrust
	TaxiThrust	0.2	<Rate> Taxi thrust
	ApproachThrust	0.5	<Rate> Approach thrust
	IdlePitch	0.4	<Rate> Sound pitch at idle
	IdleVolume	0.6	<Rate> Sound volume at idle
	MaxPitch	1.2	<Rate> Sound pitch at maximum thrust
	MaxVolume	1.0	<Rate> Sound volume at maximum thrust

Steps for Scenario making

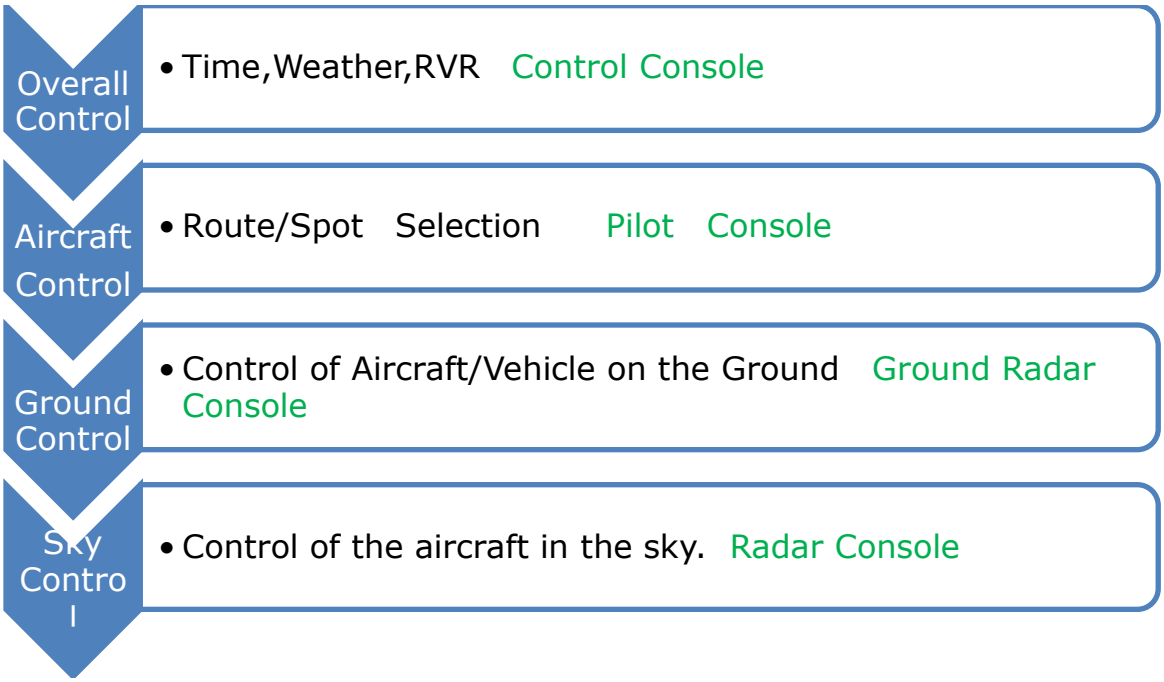
I. Preparation



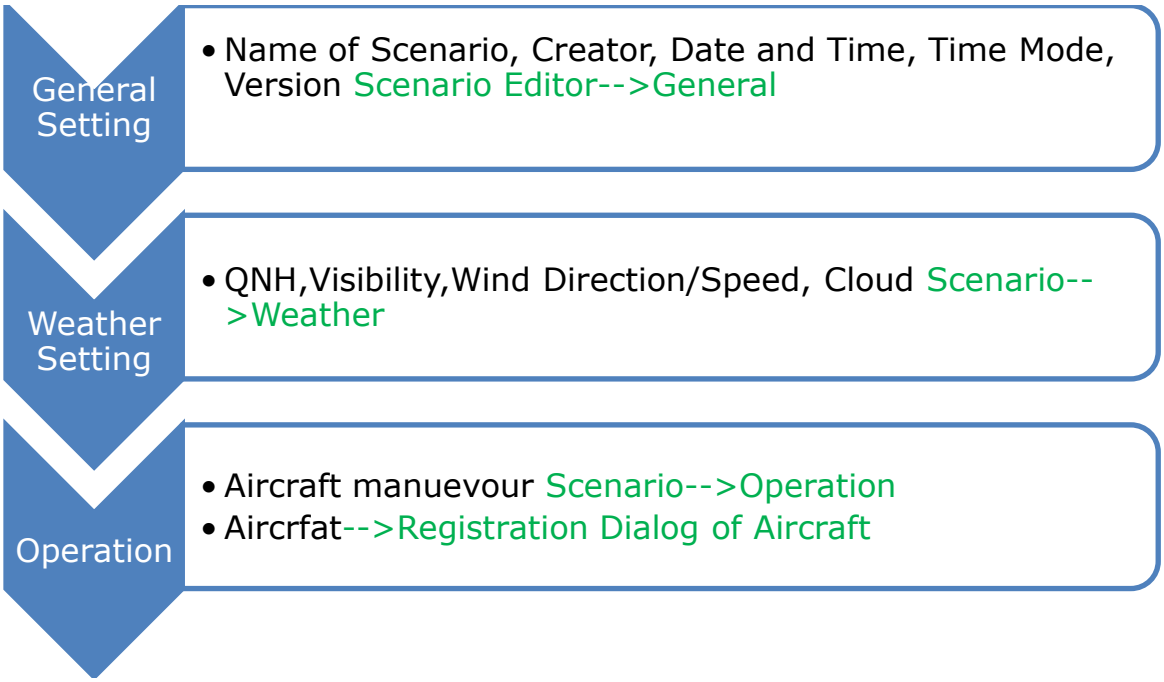
II. Scenario Coding



III. Scenario Operation



IV. Scenario Evaluation

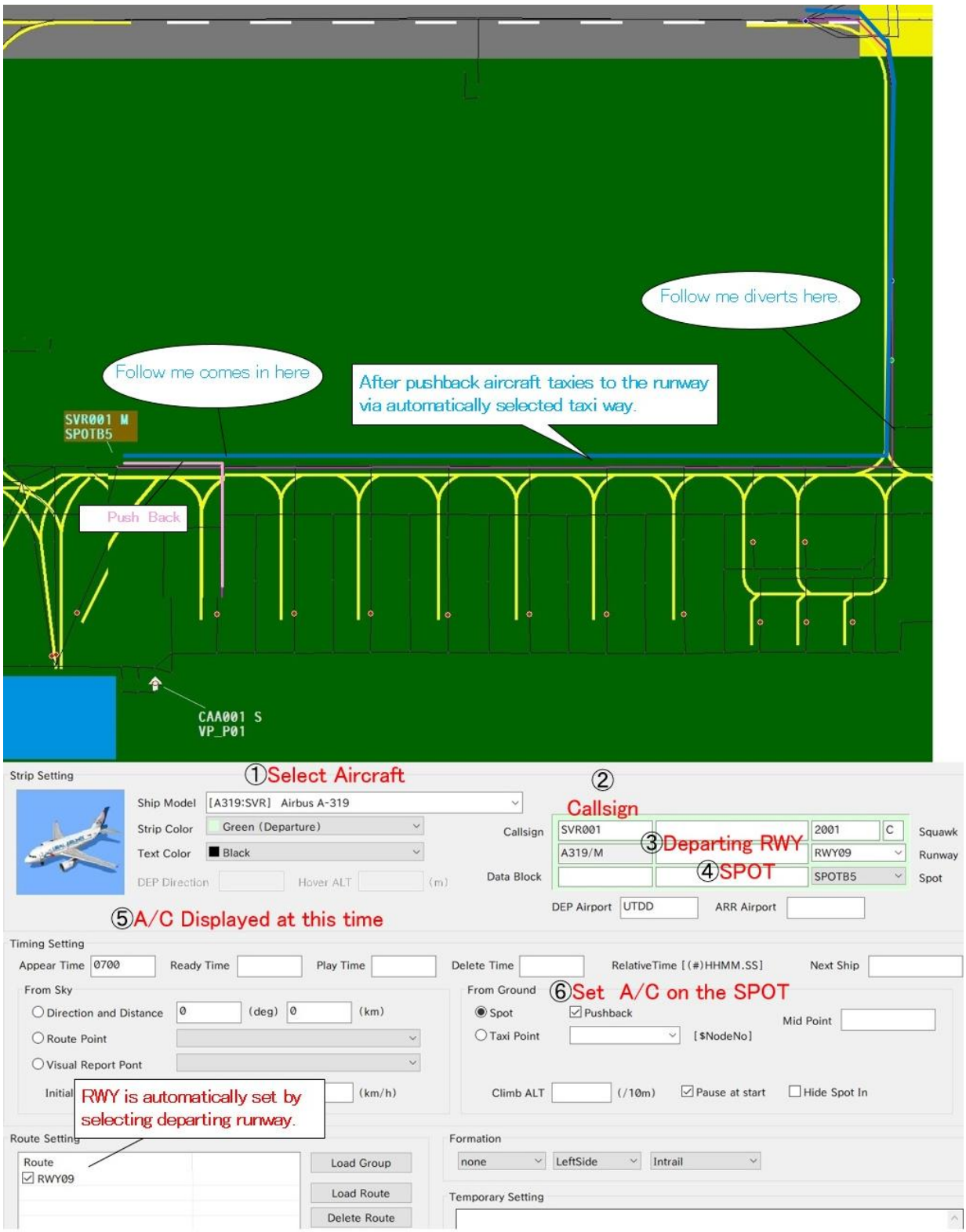


Scenario Coding Sheet

Scenario Coding Sheet														
Name			Date(yymmdd)											
Scenario Name														
Month														
Weather														
Ship Model	Dep/Arr		Callsign		Runway		Spot							
Timing Setting	Appear Time		Ready Time		Play Time		(#)HHMM.SS		Next Ship					
From Sky	DegKm/Point/VRP													
From Ground	Spot		Pushback		Mid Point		Taxi Point		Climb ALT		Pause at start		Hide Spot in	
Route														
Ship Model	Dep/Arr		Callsign		Runway		Spot							
Timing Setting	Appear Time		Ready Time		Play Time		(#)HHMM.SS		Next Ship					
From Sky	DegKm/Point/VRP													
From Ground	Spot		Pushback		Mid Point		Taxi Point		Climb ALT		Pause at start		Hide Spot in	
Route														
Ship Model	Dep/Arr		Callsign		Runway		Spot							
Timing Setting	Appear Time		Ready Time		Play Time		(#)HHMM.SS		Next Ship					
From Sky	DegKm/Point/VRP													
From Ground	Spot		Pushback		Mid Point		Taxi Point		Climb ALT		Pause at start		Hide Spot in	
Route														

DEPARTURE

Aircraft taxing to the runway for takeoff.



DEPARTURE

Vehicle to the waiting bay followed by the aircraft

SVR001 seems to follow “follow me”.
But it is taxing of her own and actually not following follow me.

①Select Ship Model (CAA001_Followme_TJK)

②Vehicle CAA01 starts from ④VP_01(Vehicle Parking) to the ③VP_F （Waiting BAY） followed by SVR001.

⑤The vehicle appears at 07:00.

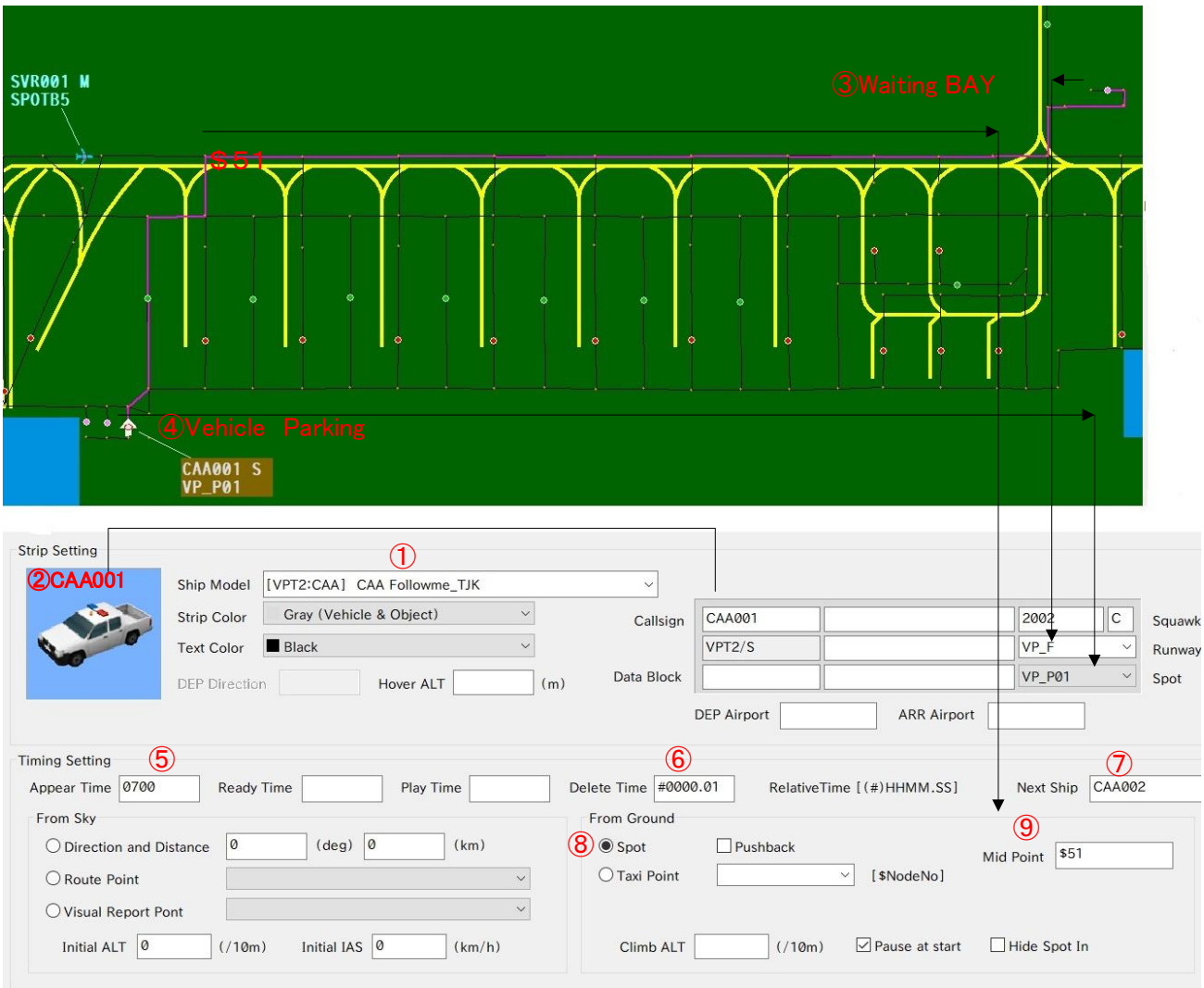
⑥The vehicle(CAA001) will be deleted in a second (relative time) after arriving VP_F.

⑦The returning vehicle(CAA002) appears.

Usage for the Next Ship entry is to assign arrived aircraft as a departure aircraft by changing the call sign. For example “SMRarrival” at SPOT123 departs from same SPOT123 as “SMRdeparture”

⑧The vehicle is initially placed at SPOT(VP_01).

⑨The vehicle proceeds from Vehicle Parking to the Waiting BAY via NODE $51.



DEPARTURE

Vehicle back to the Parking

①Select Ship Model (CAA002_Followme_TJK)

②Returning call sign.

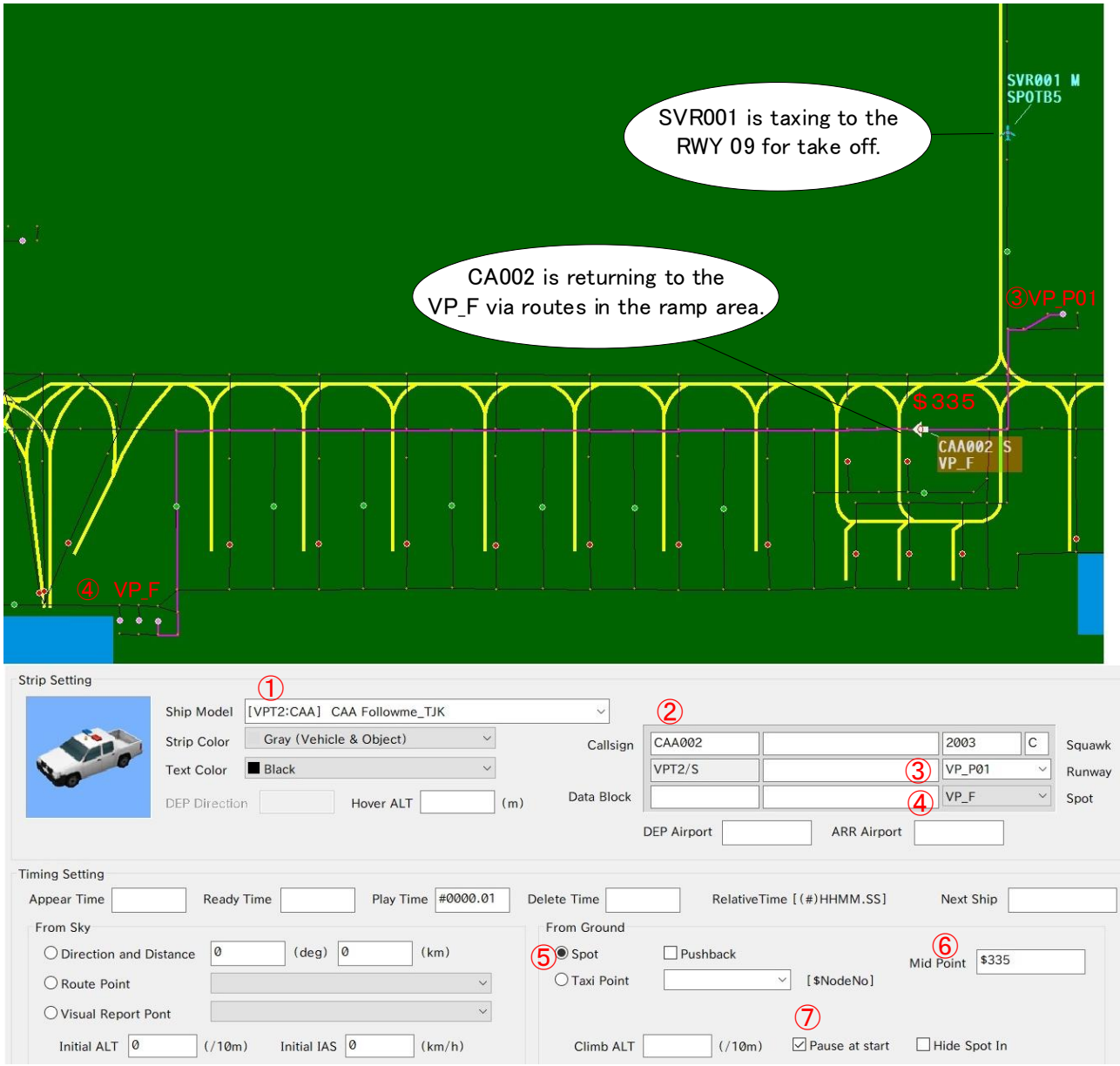
③Vehicle Parking(VP_P01). (Homeward entry is reversed from the outward.)

④Waiting Bay(VP_F). (Entry name does not match but moving direction is Spot to Runway.)

⑤Start from SPOT(VP_F)

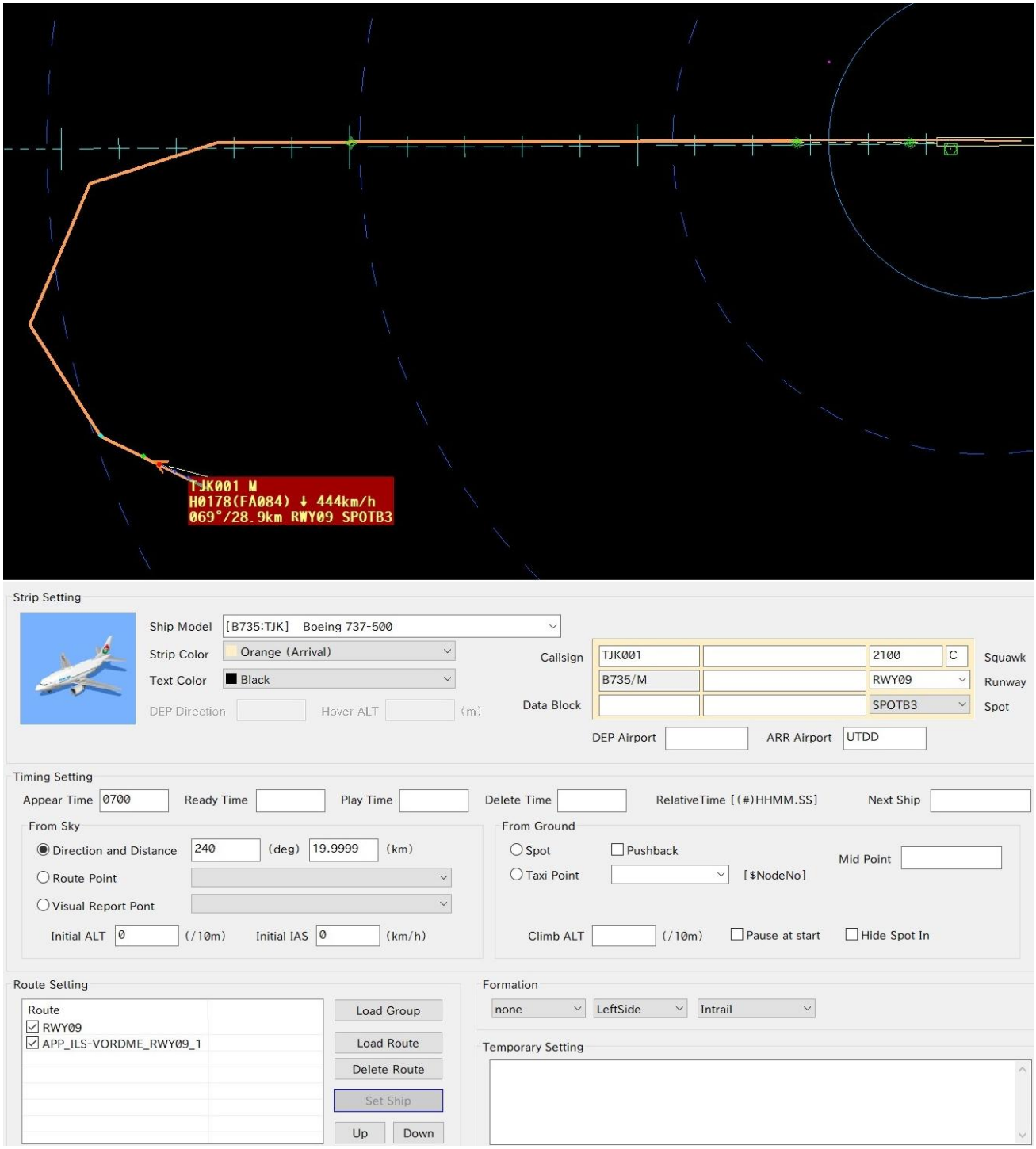
⑥Moves via $335.

⑦The vehicle is pause. So manual start is necessary.

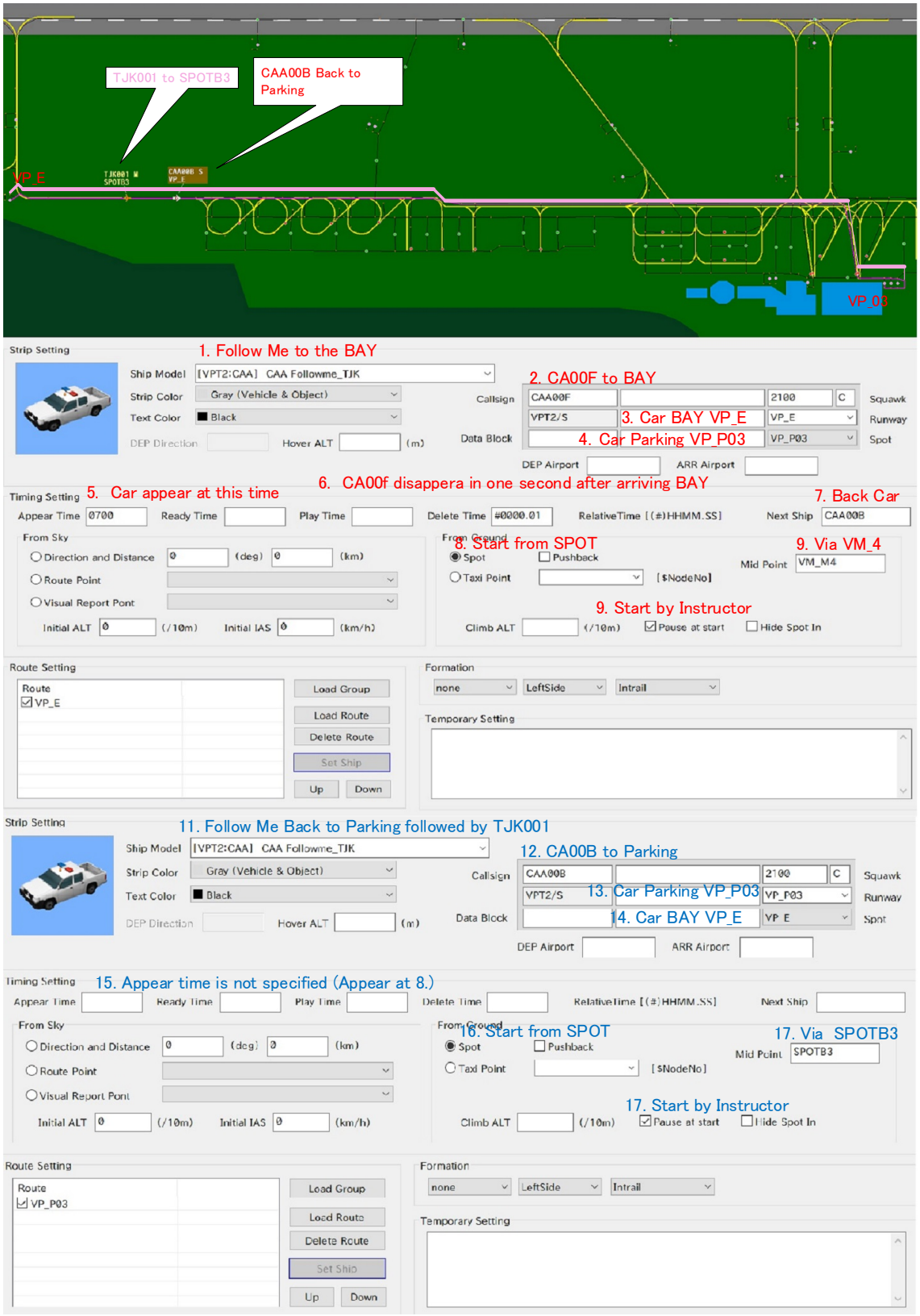


ARRIVAL

Aircraft landing to RWY09



ARRIVAL
Aircraft and Follow Me back to SPOT/Parking.


TJK001 to SPOTB3
CAA00B Back to Parking
VP_E
VP_03
Strip Setting
1. Follow Me to the BAY
Ship Model
[VPT2:CAA] CAA Followme_TJK
2. CA00F to BAY
Strip Color
Gray (Vehicle & Object)
Text Color
Black
Callsign
CAA00F
2100
C
Squawk
VPT2/S
3. Car BAY VP_E
VP_E
Runway
4. Car Parking VP_P03
VP_P03
Spot
DEP Direction
Hover ALT
(m)
Data Block
DEP Airport
ARR Airport
Timing Setting
5. Car appear at this time
6. CA00f disappera in one second after arriving BAY
7. Back Car
Appear Time
0700
Ready Time
Play Time
Delete Time
#0000.01
RelativeTime [(#)HHMM.SS]
Next Ship
CAA00B
From Sky
Direction and Distance
0
(deg)
(km)
Route Point
Visual Report Pont
Initial ALT
(/10m)
Initial IAS
(km/h)
From Ground
8. Start from SPOT
Spot
Pushback
Taxi Point
[$NodeNo]
9. Via VM_4
Mid Point
VM_M4
9. Start by Instructor
Climb ALT
Pause at start
Hide Spot In
Route Setting
Route
VP_E
Load Group
Load Route
Delete Route
Set Ship
Up
Down
Formation
none
LeftSide
Intrail
Temporary Setting
Strip Setting
11. Follow Me Back to Parking followed by TJK001
Ship Model
[VPT2:CAA] CAA Followme_TJK
12. CA00B to Parking
Strip Color
Gray (Vehicle & Object)
Text Color
Black
Callsign
CAA00B
2100
C
Squawk
VPT2/S
13. Car Parking VP_P03
VP_P03
Runway
14. Car BAY VP_E
VP_E
Spot
DEP Direction
Hover ALT
(m)
Data Block
DEP Airport
ARR Airport
Timing Setting
15. Appear time is not specified (Appear at 8.)
Appear Time
Ready Time
Play Time
Delete Time
RelativeTime [(#)HHMM.SS]
Next Ship
From Sky
Direction and Distance
0
(deg)
(km)
Route Point
Visual Report Pont
Initial ALT
(/10m)
Initial IAS
(km/h)
From Ground
16. Start from SPOT
Spot
Pushback
Taxi Point
[$NodeNo]
17. Via SPOTB3
Mid Point
SPOTB3
17. Start by Instructor
Climb ALT
Pause at start
Hide Spot In
Route Setting
Route
VP_P03
Load Group
Load Route
Delete Route
Set Ship
Up
Down
Formation
none
LeftSide
Intrail
Temporary Setting

TASKFORCE 1

Minutes of Meeting

Minutes of the First Taskforce-1 Meeting (TF1M/1) for "The Project for Capacity Development in Air Traffic Services" in Tajikistan Dushanbe, 27 October 2016

1. The First Taskforce-1 Meeting (TF1M/1) for "The Project for Capacity Development in Air Traffic Services" (hereinafter "the Project") was held at Project Manager's office in Dushanbe on 27 Oct 2016 in accordance with agreement of AWP-2016.

2. Mr. Toshio Yoshida, Chief Advisor and TF-1/3 expert organized the meeting, and 1st DDG TAN, Project Manager, TF-1/2/3 Leaders, several subleaders and Project Coordinator and Assistant as an interpreter (En/Ru) attended this meeting.

3. Prior to the starting of the meeting, Mr. Yoshida handed out "The summary of TFs activity" and draft of "Monitoring Sheet Summary, -1 and -2" to all participants.

4. Mr. Yoshida explained agenda 6 for all participants based on draft of monitoring sheets (Appendix-B, C and D) first and finalize its by TF members, then he explained agenda 1, 2 and 3 for TF-1, agenda 4 for TF-3, agenda 5 for TF-1/3 based on Summary of TF activities (Appendix-A).

a) Agenda-1
Explain about TF-1 expert activity in Jan-Feb 2017, especially "Operation Manuals Review" by 18 ATCs

The first July group of 10 ATC officers had successfully completed ICAO training courses in Malaysia by 21 Oct, and the second October group of 8 ATC officers are expected to complete it by 23 Dec 2016 as original scheduled. In accordance with TF-1 activities 1-4 in PDM (Project Design Matrix), the trained 18 ATC officers participated from four airports (UTDD, DL, DK, DT) have an obligation to review their existing Operation Manuals in terms of ICAO standard which knowledge they had acquired though #052 to #055 trainings in Malaysia, then they have to revise its if it will be required during Project term. TF-1 expert Mr. Yoshida will provide a workshop, hand-on and necessary technical assistance (TA) for enabling 18 ATC officers to review all Operation Manuals in all airports starting from his 4th assignment term from Jan to Feb 2017. Detail contents and process of this TA, and pre-assignment tasks will be informed to 18 officers via Taskforce by Mr. Yoshida before his next mission.

b) Agenda-2
Make consensus of the participants lists of OJT instructor (#219) and Simulator trainers (#211) trainings, & explain the ATC and simulator expert activity for trained 6 OJT instructors and 8 trainers in May 2017.

The six ATC instructors those who are going to attend OJT instructor training (#219) in Jan 2017 will become core counterparts of TF-1 expert Mr. Yoshida, and also simulator trainers those who are going to attend General instructor training (#211) in Feb 2017 will become targets of TA by Mr. Nakatsugawa as TF-1 simulator training expert who will be assigned in June or July 2017.
In accordance with TF-1 activities 1-5 and 1-7 in PDM, 6 trained instructors have an obligation to make OJT implementation plan for all ATC officers in four airports and conduct OJT at least two times by each through Mr. Yoshida's cooperation. The 8 trained simulator instructors are expected to develop a periodic simulator training plan and conduct trainings at least three times per month by each after completing necessary TA by Mr. Nakatsugawa with using an aerodrome simulator which will be granted by JICA in June 2017. TF-1 decided to revise the draft candidate list for #211 and #219 by 28 October.

c) Agenda-3
Discuss assignment of the simulator and expert rooms in ATC Center in 2017.

Due to procurement difficulties in Japan side, an expected delivery date of the aerodrome simulator is delayed from March to June 2017. However, making provision for simulator training room and expert room in ATC Center are expected to do by TAN side as early as possible.
TF-1 will provide dimensions of potential rooms by 28 October, then TF-1 expert will coordinate necessary information with JICA HQ for choosing the room by 25 November 2016.

d) Agenda-4
Explain about TF-3 AIS expert activity in Jan-Mar 2017, and requesting preparation for receiving TA.

Four AIS offices those who have completed AIS basic training in Frankfurt are expected to develop the operation manuals for NOTAM, AIC and AIP in accordance with ICAO standard and regulations. TF-3 AIS expert will be assigned Project for two months from end of January 2017, and he will provide workshop, hand-on and necessary TA to those four AIS office for enabling project activities as 3-3 in PDM. He also planning to provide aeronautical chart training for complementing training in Frankfurt. The detail contents, process and tools for drawing chart of these TAs will be informed before his arrival. As for the drawing software for cartography, TAN requested TF-3 expert to choose appropriate software which was familiarized by AIS expert. The AIS expert will inform it before assignment. The meeting has agreed that hand drawing tools will be provided by TAN for PANS-OPS training no later than end of March 2017 based on FPD expert recommendation.

e) Agenda-5
Discuss selection of ATC and AIS officers those who are expected to participate the training and OJT by TF-3 FPD expert in April 2017, and explain conditionality for nominating "PBN Basic Training" from July 2017 in Japan.

The article 3-4 and 3-5 in PDM prescribed that at least two Fright Procedure Designers (FPD) will be trained by PANS-OPS training and OJT for conventional FPD by TF-3 FPD expert Mr. Yamane in April to May 2017. Project is planning to invite one English well speaking AIS officer from TF-3 and three ATC officers from TF-1 or 2. Due to one and half month long training term for the series of PANS-OPS and OJT, selecting four participants will be done by end of Jan 2017. JICA is planning to invite two of four successfully completed PANS-OPS training and OJT officers to PBN basic training in Japan in July 2017. TF-3 decided a model airport for making draft AIP is UTDD.

f) Agenda-6
Explain a Monitoring Report (Summary, 1 and 2) which was drafted by expert team, then jointly evaluate all taskforce activities from April to September in 2016 by TAN and experts.

In accordance with R/D, dated 4 Dec 2015, the joint monitoring for reviewing progress of Project should be conducted by TAN and experts in every half year (Apr-Sep / Oct-Mar), then submit it to JICA Tajikistan office as a progress report by Mr. Yoshida. For smoothly monitoring implementation, Mr. Yoshida has drafted the Monitoring Reports for Apr-Sep 2016, then finalized it by PM and each Taskforce Leaders as attached Appendix-B to D in this meeting.
As for the Monitoring Sheet-1, the description of TF3's achievement in TF1 space was deleted, and the AIS Expert will catch up "aeronautical chart" was added in comment.
Monitoring Sheet -2 and Summary was approved with minor modifications by meeting.

Dushanbe, 27 October 2016

Sheraliev Bakhtiyor
Project Manager / TF-2 Leader
TAN

Toshio Yoshida
Project Chief Advisor / TF-1/3 Expert
ATCA-Japan

Mr. Davlyatov Davlat
Taskforce-1 Leader

Mr. Khmorov Bakhtiyor
Taskforce-3 Leader

List of Appendix

Appendix-A: Summary of Taskforce activities in 2016-17
Appendix-B: Monitoring Sheet Summary (Ver.2.0)
Appendix-C: Monitoring Sheet-1 (Ver.2.0)
Appendix-D: Monitoring Sheet-2 (Ver.2.0)
Appendix-E: Participants list of #219 and #211 trainings in MAvA

TJ-ATS Project Task Force Activities 2016-17

Project Activities by Taskforces	*Trainings in abroad*	*TA/Training/OJT by Experts*	*Outcome from Taskforces*
Taskforce-1 **All ATC officers working at ATC units have passed training in line with ICAO standards conducted by OJT instructors and simulator trainers.**			
1-1: To conduct training of ATC officers on aerodrome, approach and area control services 1-4: To review and if necessary improve Operation Manuals	18 ATC 10 MAvA by 2016/10 (from 4 airports) 8 MAvA by 2016/12	18 ATC Expert ATC1 TA 2017/1-2	15/18(80%) ATC got ICAO certificate by 2016/12 Reviewed Operation Manuals in 4 airports by 18 ATC
1-2: To conduct OJT instructor training for selected ATC officers 1-3: To conduct instructor training for simulator trainers 1-5: To conduct OJT on aerodrome, approach and area control services 1-6: To procure aerodrome simulator 1-7: To conduct simulator trainings	6 ATC Instructors 6 MAvA by 17/1 8 Simulator Trainers 8 MAvA by 17/2	6 Instructors Expert ATC1 TA 17/3-4 [redacted] 8 Trainers Expert Simul TA 17/6-7	5/6 (80%) instructors got ICAO certificate by 2017/1 7/8 (80%) trainers got ICAO certificate by 2017/2 OJT implementation plan/ conducted OJT 2 times each Aerodrome Simulator became operational Periodic simulator training plan/ training 3 times /M each
Taskforce-2 **The contingency plan and SMS for ATC have been implemented.**			
2-1-1: To conduct basic training on contingency plan 2-1-2: To improve the draft contingency plans 2-1-3: To conduct exercise of contingency procedures 2-1-4: To request approval of CAA on the contingency plans for implementation		2 ATC Expert ATC2 Training 16/7 2 ATC Expert ATC2 TA 16/11 2 ATC Expert ATC2 TA 16/11 2 ATC Expert ATC2 TA 18/?	2 ATC got a PJ certificate on Basic Contingency Plan. Existing Contingency Plan was improved Exercise of contingency procedures was conducted Contingency plan was approved by CAA
2-2-1: To obtain necessary knowledge of SMS 2-2-2: To develop and update SMS Manual 2-2-3: To establish risk management process 2-2-4: To implement safety risk management and safety assurance 2-2-5: To conduct SMS training and education for ATC officers	2 ATC 5 EURCNT 16/10-12, 17/3	2 ATC Expert ATC2 TA 17/4? 2 ATC Expert ATC2 TA 17/4? 2 ATC Expert ATC2 TA 17/10? 2 ATC Expert ATC2 TA/OJT? 18/?	2 ATC got a certificate on SAF-SA1,2 and ATM SMS Manual (phase 2) was developed Risk Management Process (phase 4) was established SRM and Assurance (phase 4) were implemented All ATC was trained SMS training / shear safety info
Taskforce-3 **The draft AIP of the model airport has been accepted as confirming to ICAO standards by JICA Expert**			
3-1: To conduct basic training on AIS 3-2: To conduct basic training on aeronautical charts 3-3: To develop operation manuals for Notice to Airman (NOTAM), Aeronautical Information Circulars (AIC) and Aeronautical Information Publication (AIP)	4 AIS 4 GroupEAD by 2016/9 (several part was Included above)	(4 AIS Expert AIS OJT? 17/2-3) 4 AIS Expert AIS TA 17/2-3 (+English teacher by TAN)	4 AIS got a certificate on AIS basic (included above) + VISIO knowledge? Operation Manual for NOTAM, AIC and AIP by 4 AIS
3-4: To conduct basic training on flight procedure design 3-5: To conduct OJT of flight procedure designers for a model airport 3-6: To produce draft of AIP of the model airport	(2 ATC/AIS PBN in Japan 2017/7)	3ATC+1AIS Expert FPD Training 17/5 3ATC+1AIS Expert FPO OJT 17/6 4AIS(+Eng-T) Expert ATC1 TA 17/?	2 ATC/AIS got certificate on PANS-OPS (go PBN Jp) 2 ATC/AIS received conventional FPD-OJT in UTDD AIP(draft) for UTDD by 3ATC (FPD) & 4AIS (chart)

Trainings in abroad:
Participants were selected TFs.
English skill was confirmed by Experts.
Trained officers are target CPs by TA.

Japanese Experts TA:
TA: workshop, seminar and others
Training: Project Certified training
OJT: Exercise or hands-on

*1) 3 trainees on FPD part of TF3 activates will be selected from TF1 or 2 ATCs.
*2) 2 participants to go PBN basic trainings in Japan will be selected PANS-OPS / OJT completed CPs

Appendix-4

Appendix-13

PM Form 3-1 Monitoring Sheet Summary

TO RR of JICA Tajikistan OFFICE

PROJECT MONITORING SHEET

Project Title: The Project for Capacity Development in Air Traffic Services in Tajikistan

Version of the Sheet: Ver.2 (Term: March, 2016 - September, 2016)

Name: Toshio YOSHIDA

Title: Chief Advisor

Submission Date: 31, October, 2016

I. Summary

1 Progress

This project started at 28 March and few works in March were included in this Term.

1-1 Progress of Inputs

(1) Japan side

Chief Advisor and Project Coordinator/Training Planner were assigned.

PC/TP is permanently stationed.

ATC Expert (1) and ATC Expert (2) were dispatched in March-April and June-July session.

(2) Tajikistan side

Counterparts (Project Director, Deputy PD, and Project Manager) were assigned.

Three Task Force (ATC Training, Contingency Plan/SMS, and AIS/Flight Procedure Design) were organized.

Project Office in TAN Headquarter was opened.

Documents requested by JICA Expert were shared.

1-2 Progress of Activities

(1) To conduct training of ATC officers.

Five courses (Aerodrome Control, Approach Control/Procedural, Approach Control/Surveillance, Area Control/Procedural, and Area Control/Surveillance) for TF-1 in the third country (Malaysia) were planned, executed and completed by ten ATCs.

One course (SMS) in Luxemburg for TF-2 was planned and ready for October.

One course (AIS) in Germany for TF-3 was planned, executed and completed by four ATCs.

(2) To procure aerodrome simulator.

Data survey mission was taken by JICA HQ person at TAN in July.

(3) To develop ATC Contingency Plan.

ATC Expert (2) conducted basic training on contingency plan in Aug.
Expert started to improve Draft Contingency Plan and Safety Management System Manual.

1-3 Achievement of Output

(1) All outputs depend on the result of the third country training.
Every participant has returned to TAN with the Course Certification. (100%)
JICA experts expect participants to take adequate roles to expand their knowledge and experience through the third country training into TAN.
(2) TF-2 started their works as planned.

1-4 Achievement of the Project Purpose

Project is moving on schedule.

1-5 Changes of Risks and Actions for Mitigation

None

1-6 Progress of Actions undertaken by JICA

No relevant items

1-7 Progress of Actions undertaken by TAN

No relevant items

1-8 Progress of Environmental and Social Considerations (if applicable)

1-9 Progress of Considerations on Gender/Peace Building/Poverty Reduction (if applicable)

1-10 Other remarkable/considerable issues related/affect to the project (such as other JICA's projects, activities of counterparts, other donors, private sectors, NGOs etc.)

Several of mainly used transit airport have been restricted due to safety issues.

2 Delay of Work Schedule and/or Problems (if any)

None

2-1 Detail

2-2 Cause

2-3 Action to be taken

2-4 Roles of Responsible Persons/Organization (JICA, TAN)

3 Modification of the Project Implementation Plan

None

3-1 PO

3-2 Other modifications on detailed implementation plan

(Remarks: The amendment of R/D and PDM (title of the project, duration, project site(s), target group(s), implementation structure, overall goal, project purpose, outputs, activities, and input) should be authorized by JICA HDQs. If the project team deems it necessary to modify any part of R/D and PDM, the team may propose the draft.)

4 Preparation of TAN toward after completion of the Project

II. Project Monitoring Sheet I & II *as Attached*

Monitoring Sheet I

Version 2.0
27 October 2016

Project Title: The Project for Capacity Development in Air Traffic Services
Implementing agency: SUE "TAJIKAIRNAV IGATIONT" (TAN), Project term: 33 months from 28 March 2016, Project site: TAN in Dushanbe

Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumption	Achievement	Remarks
Overall Goal To improve Air Traffic Services (ATS) in Tajikistan	Indicator 1: All ATC officers working at ATC units maintain ATC ratings in line with ICAO standards through TAN's continuing training program Indicator 2: The contingency plan and SMS for ATC have been kept in operation. Indicator 3: Aeronautical Information Publication (AIP) has been updated in line with ICAO standards.	- Rating record - Survey		-	
Project Purpose To enhance capacity of Tajikairnavigation (TAN) in Air Traffic Services (ATS)	Indicator 1: All ATC officers working at ATC units have passed training in line with ICAO standards conducted by OJT instructors and simulator trainers. Indicator 2: The contingency plan and SMS for ATC have been implemented. Indicator 3: The draft AIP of the model airport has been accepted as confirming to ICAO standards by JICA Expert.	- Project Monitoring Sheet	- CNS/ATM systems are properly maintained - Trained ATC officers continue to work in TAN - Trained instructors/ trainers, AIS officers and flight procedure designers continue to work in TAN	-	-
Outputs Output 1: To enhance capacity of training for Air Traffic Control (ATC) officers in line with ICAO standards	Indicator 1-1: At least 80% of ATC officers/OJT instructors/Simulator trainers who attended training courses have completed trainings successfully. Indicator 1-2: Operation Manual has been reviewed and improved if necessary Indicator 1-3: Each of the OJT instructors has conducted OJT on aerodrome, approach and/or area control services at least 2 times. Indicator 1-4: Aerodrome simulator has been operational. Indicator 1-5: Each of the simulator trainers has been conducting simulator training at least 3 times per month.	- Project Monitoring Sheet	- Trained ATC officers continue to work in TAN - Trained instructors/ trainers, AIS officers and flight procedure designers continue to work in TAN	10 ATCs attended 5 ATC course and 100% completed.	-
Output 2: To enhance capacity of ATC officers with regard to ICAO recommendations	Indicator 2-1-1: 2 ATC officers have completed basic course on contingency plan successfully. Indicator 2-1-2: Exercise of contingency procedures has been conducted successfully. Indicator 2-1-3: The contingency plans have been approved by CAA for implementation. Indicator 2-2-1: 2 ATC officers have completed courses on SMS successful. Indicator 2-2-2: SMS Manual has been developed and updated Indicator 2-2-3: Risk management process has been established Indicator 2-2-4: Safety risk management and safety assurance have been implemented Indicator 2-2-5: SMS training and education for all ATC officers have been conducted			2 ATCs attended basic Contingency course and completed.	
Output 3: To enhance capacity of Aeronautical Information Services (AIS) officers with regard to ICAO recommendations	Indicator 3-1: 2 AIS officers have successfully completed basic course on AIS. Indicator 3-2: 2 AIS officers have successfully completed basic course on aeronautical charts. Indicator 3-3: Operation manuals for Notice to Airman (NOTAM), Aeronautical Information Circulars (AIC) and Aeronautical Information Publication (AIP) have been developed Indicator 3-4: 2 flight procedure designers have successfully completed basic course on PANS-OPS. Indicator 3-5: 2 flight procedure designers have successfully completed OJT on conventional flight procedure design. Indicator 3-6: Draft of Aeronautical Information Publication (AIP) of the model airport has been produced.			4 AIS officers attended Basic course of AIS/aeronautical charts and completed.	AIS Expert will catch up Aeronautical Chart.

Attachment-6

Activities	Inputs		Important Assumption	Issues	Countermeasures
	Japanese side	Tajikistan side			
1-1: To conduct training of ATC officers on aerodrome, approach and area control services 1-2: To conduct OJT instructor training for selected ATC officers 1-3: To conduct instructor training for simulator trainers 1-4: To review and if necessary improve Operation Manuals 1-5: To conduct OJT on aerodrome, approach and area control services 1-6: To procure aerodrome simulator 1-7: To conduct simulator trainings	Experts: - Chief Advisor/ATC Expert (1) - ATC Expert (2) - Simulator Training Expert - AIS Expert - Flight Procedure Design Expert - Project Coordinator/Training Planner - Others as necessary Training in the third countries: - Training of ATC officers on ATC services - OJT Instructor Training for selected ATC officers - Instructor Training for simulator trainers - SMS Training - AIS Training - Others as necessary Equipment: - Aerodrome Simulator	Counterparts: - Project Director (Director General, TAN) - Deputy Project Director (First Deputy DG, TAN) - Project Manager (Head of Safety and Quality Department, TAN) - ATC Training Task Force - Contingency Plan/SMS Task Force - AIS/Flight Procedure Design Task Force - Interpreter as necessary Project Offices (with desks/chairs and internet connection): - In TAN Headquarters - In TAN Training Center Facilities of TAN Training Center: - Class rooms - Aerodrome simulator room Running Cost: - Operation and maintenance of Aerodrome Simulator - Supply or replacement of machinery, equipment and materials necessary for the Project other than provided by JICA - In-country travel expenses of TAN counterpart personnel Data and Information related to the Project		None	
2-1. To develop ATC contingency plan 2-1-1: To conduct basic training on contingency plan 2-1-2: To improve the draft contingency plans 2-1-3: To conduct exercise of contingency procedures 2-1-4: To request approval of CAA on てき contingency plans for implementation 2-2. To improve Safety Management System (SMS) 2-2-1: To obtain necessary knowledge of SMS 2-2-2: To develop and update SMS Manual 2-2-3: To establish risk management process 2-2-4: To implement safety risk management and safety assurance 2-2-5: To conduct SMS training and education for ATC officers			**Pre-conditions** - TAN ensures the budget for input by Tajikistan side - TAN assigns AIS personnel	-	-
3-1. To conduct basic training on AIS 3-2. To conduct basic training on aeronautical charts 3-3. To develop operation manuals for Notice to Airman (NOTAM), Aeronautical Information Circulars (AIC) and Aeronautical Information Publication (AIP) 3-4. To conduct basic training on flight procedure design 3-5. To conduct OJT of flight procedure designers for a model airport 3-6. To produce draft of AIP of the model airport					

Monitoring Sheet II

Version 2.0
Dated 27 October 2016

Project Title: The Project for Capacity Development in Air Traffic Services

Inputs	Plan	2016	2017	2018	2019	Remarks	Monitoring: Issue	Monitoring: Solution
Expert							Consideration of CP's summer vacation was requested.	Expert session was shifted adequately.
Chief Advisor/ATC Expert (1)	Plan / Actual							
ATC Expert (2)	Plan / Actual							
Simulator Training Expert	Plan / Actual							
AIS Expert	Plan / Actual							
Flight Procedure Design Expert	Plan / Actual							
Project Coordinator/ Training Planner	Plan / Actual							
Equipment							Delay of instalation is expected.	Time is corrected.
Aerodrome Simulator	Plan / Actual							
Training in the third country							Schedules were affected by receiving facility.	Schedules were coordinated and set up in acceptable term. Some course was moved forward in first fiscal year.
Training of ATC officers on ATC services	Plan / Actual							
OJT instructor training for selected ATC officers	Plan / Actual							
Instructor Training for simulator trainers	Plan / Actual							
SMS Training	Plan / Actual							
AIS Training	Plan / Actual							

Activities / Sub-Activities	Plan	2016	2017	2018	2019	Responsible Organization: Japan	Responsible Organization: Tajikistan	Achievements	Issue & Countermeasures
	Actual	IV I II III	IV I II III	IV I II III	IV I				
Output 1: To enhance capacity of Air Traffic Control (ATC) officers in line with ICAO standards									
1-1: To conduct training of ATC officers on aerodrome, approach and area control services	Plan / Actual					JICA	TAN	All 10 participants were certified.	
1-2: To conduct OJT instructor training for selected ATC officers	Plan / Actual					JICA	TAN		
1-3: To conduct instructor training for simulator trainers	Plan / Actual					JICA	TAN		
1-4: To review and if necessary improve Operation Manuals	Plan / Actual					JICA	TAN		
1-5: To conduct OJT on aerodrome, approach and area control services	Plan / Actual					JICA	TAN		
1-6: To procure aerodrome simulator	Plan / Actual					JICA	TAN		
1-7: To conduct simulator trainings	Plan / Actual					JICA	TAN		

Appendix 4-2

Output 2: To improve ATC services with regard to ICAO recommendations								
2-1-1: To conduct basic training on contingency plan	Plan				JICA	TAN	Basic Contingency training was conducted, 2 ATCs were certified.	
	Actual							
2-1-2: To improve the draft contingency plans	Plan				JICA	TAN		
	Actual							
2-1-3: To conduct exercise of contingency procedures	Plan				JICA	TAN		
	Actual							
2-1-4: To request approval of CAA on the contingency plans for implementation	Plan				JICA	TAN		
	Actual							
2-2-1: To obtain necessary knowledge of SMS	Plan				JICA	TAN		
	Actual							
2-2-2: To develop and update SMS Manual	Plan				JICA	TAN		
	Actual							
2-2-3:To establish risk management process	Plan				JICA	TAN		
	Actual							
2-2-4: To implement safety risk management and safety assurance	Plan				JICA	TAN		
	Actual							
2-2-5:To conduct SMS training and education for ATC officers	Plan				JICA	TAN		
	Actual							
Output 3: To improve Aeronautical Information Services (AIS) with regard to ICAO recommendations								
3-1. To conduct basic training on AIS	Plan				JICA	TAN	All 4 participants were certified.	
	Actual							
3-2. To conduct basic training on aeronautical charts	Plan				JICA	TAN		
	Actual							
3-3. To develop operation manuals for NOTAM, AIC and AIP	Plan				JICA	TAN		
	Actual							
3-4. To conduct basic training on flight procedure design	Plan				JICA	TAN		
	Actual							
3-5. To conduct OJT of flight procedure designers for a model airport	Plan				JICA	TAN		
	Actual							
3-6. To produce draft of AIP of the model airport	Plan				JICA	TAN		
	Actual							
Duration / Phasing	Plan							
	Actual							

Monitoring Plan	Plan	2016	2017	2018	2019	Remarks	Issue	Solution
		1 2 3 4 5 6 7 8 9 10 11 12	1 2 3 4 5 6 7 8 9 10 11 12	1 2 3 4 5 6 7 8 9 10 11 12	1 2 3 4 5 6			
Monitoring								
Joint Coordination Committee	Plan							
	Actual							
Joint Monitoring (Project Monitoring Sheet)	Plan							
	Actual							
Post Monitoring (End of Year 2021)	Plan							
	Actual							
Reports/Documents								
Minutes of Meeting (JCC)	Plan							
	Actual							
Completion Report	Plan							
	Actual							

OJT Instructor / General Instructor Training for the Malaysia Aviation Academy 20161028

	ICAO Trainee Plus # MAvA Course title	Date Duration	Candidates Name	Mobile/e-mail		
2017 Jan starting groups -	OJT Instructor Training		Okilov Mahsudzhon		Radar controller in Khudzan	
			Nabidzhnov Nizomdzhon		Supervisor in Kurgan	
			Hamidov Nurali		Supervisor in Kulob	
			Shukurov Shuhrat		ACC senior in Dushanbe	
			Kayumov Gulomdzhon		Radar controller in Dushanbe	
			Rakhimov Khotamzhon		Area controller in Dushanbe	
2017 Feb starting groups	General Instructor Training		Sharipov Sino		Supervisor in Kulob	
			Gafarov Bakhriddin		Supervisor in Kurgan	
			Rashidov Firdavs		Area controller in Dushanbe	
			Okilov Mansur		Tower controller in Khudzan	
			Khusenov Payrav		ACC senior in Dushanbe	
			Gulov Firdaws		Radar controller in Dushanbe	
			Tadzhibaev Akbardzhon		Area controller in Dushanbe	
			Kurbanov Sarvardzhan		Supervisor in Dushanbe	

Appendix - E
(Not approved TF-1/expert)

Minutes of the 2nd Taskforce-1 Meeting (TF1M/2) for "The Project for Capacity Development in Air Traffic Services" in Tajikistan Dushanbe, 15 December 2016

1. The Second Taskforce-1 Meeting (TF1M/2) for "The Project for Capacity Development in Air Traffic Services" (hereinafter "the Project") was held at 1st DDG office in Dushanbe from 14:00 to 15:40 on 15 December 2016 for mainly an urgent need for issue of Khojend airport.

2. On behalf of TF-1 Experts Mr. Yoshida (ATC-1) and Mr. Nakatsugawa (Simulator Training), Project Coordinator unavoidably organized this technical meeting. The 1st DDG Mr. Shambiev, TF-1 leader Mr. Davlyatov, sub-leader Mr. Mansuri, Project Coordinator Mr. Orita and Mr. Safovudin attended this meeting.

3. Project explained the purpose of this urgent meeting as three agendas listed below.

   Agenda-1) Clarification of the terminal building renovation and new tower plan in Khojend airport.

   Agenda-2) Discuss the issue of traveling cost from regional airports to Dushanbe for attending OJT/ simulator TA by Japanese TF1 Experts and cost trainees those who need to come Dushanbe from regional airports for using the newly installing aerodrome simulator

   Agenda-3) Finalizing the Operation Manual list in four airports for reviewing and revising by 18 ATCs after completed ATC trainings in MAvA with necessary support by TF-1 Expert.

a) Agenda-1

On 12 December 2016 in Khojend airport, Project was informed that the terminal building renovation, including new boarding bridges and temporarily relocating the ATC tower from the top of existing building to 2nd floor of METAR structure (Red circle in fig.-A) is going by own budget. Besides this, TAN is seeking for the financial support from any donors for constructing new ATC tower (fig.-B) in the place of "1" in fig.-A. In this regard, even though using this temporary tower lasted for long period till new tower will be available, both JICA and TAN side can't entirely agree with using a view form 2nd floor of METAR to the initial simulator design, because a height and visible angle are not suitable for aerodrome simulator. TAN managements expect that the new tower constriction will be completed by the end of 2018 on the assumption that they are going to secure the financial support from donor community at once. Due to the negative influence of these renovations and plan of new tower on usability of newly installing aerodrome simulator in Dushanbe may become very serious, TF-1 set a course for preparing the most suitable data for the simulator listed below.

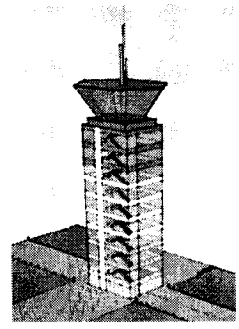
1) TF1 ordered Mr. Dodov Daler, the director of TAN branch in Khojend airport to provide Project with final drawing of new terminal building including the detail of boarding bridges and the site proposed for new tower as soon as possible.

2) Mr. Dodov will take panorama photos from the both of existing tower and roof edge of VIP hall near the new tower site ("1" in fig.-A), no later than 28th December 2016. TF-1 will make a comparison the two, then inform JICA HQ of the final conclusion which view is preferable for the simulator by TF-1 by the end of December 2016.

3) TF-1 will entrust the software vender and JICA HQ with making final decision.

fig.-A

fig.-B



b) Agenda-2

It has become known that radar simulator system in Khojend was transferred from Dushanbe six years ago after existing simulator system in Dushanbe had been installed. However, after installing new aerodrome simulator in Dushanbe by the Project, TF-1 has an intention of keeping existing radar simulator as it is for the time being. In any case, it is necessary for trained OJT/simulator instructor in three regional airports to come Dushanbe for taking TF-1 experts TA, and their simulator trainees also need to come Dushanbe for using aerodrome simulator.

TF-1 JICA side expressed anxiety about TAN's budget for their travel allowance, because it was mentioned in the Record of Discussion (R/D) that domestic traveling cost for CP should be covered by TAN side. Responding to this issue, TF-1 TAN side promised that TAN will provide OJT/simulator instructors with travel allowance for attending Japanese expert's TA in Dushanbe if it is truly difficult to bear such cost by JICA side. However, trained simulator instructors in Dushanbe will be able to teach the trainees from regional airports, therefor TAN doesn't consider the travel allowance for OJT/simulator instructors in recurrent training phases. TAN will provide the travel allowance for the trainees from regional airport those who needs to use the aerodrome function in new simulator in Dushanbe.

This TAN's treatment secures sustainability for the periodical aerodrome simulator training in Dushanbe after the Project. In addition to this, for securing TF-1's outcomes more stable, Project Coordinator starts coordination with JICA headquarters and regional office for getting permission to use the local budget for domestic traveling cost for expecting the unexpected cases during Project term.

c) Agenda-3

Project has made the comprehensive list of the Operation Manuals in four airports which should be reviewed and revised by 18 TF-1 members those who were trained by MAvA under the training and TA by TF-1 expert in accordance with TF-1's activity 1-4 in PDM. TF-1 confirmed that the list is precise and adequate for using TF-1 activity 1-4. Since reviewing manuals which have the "Manual" in the title may contribute greatly for improving ATC's operation, TF1 TAN's management side recommend TF-1 expert to set priorities as 1st on it, 2nd on "Job descriptions" then 3rd on "Flight Operation Manual" and the rest. TF-1 expert will start TA and necessary coordination for enabling appropriate reviews by 18 CPs from middle of January 2017.

For accelerating this TF-1 activity, TF-1 will have a presentation opportunity by Mr. Gafarov Bakhriddin, he was one of July group participants from Kurgan-tube, for shearing his experience of reviewing operation manuals, though before starting TA by Japanese expert. TF-1 will request him to do it on 22nd December in Dushanbe, after finishing departure briefing for #219/211 participants.

d) Other Business

Project reminded TF-1 of the notification letter for preparing simulator room dated 30th November 2016.

Dushanbe, 15 December 2016

Davlyatov Davlat
TF-1 Leader
TAN

for Toshio Yoshida
Project Chief Advisor / TF-1 Expert
ATCA-Japan

List of Appendix

Appendix-A: Operation Manual List for four airports as of 20161215

Appendix - A

List of Operation Manuals for TF-1 activity 1-4, 20161215

ID	Title in Russian / Title in English Airport > Number of trained CPs by MAvA >	DYU 14	LBD 2	KQT 1	TJU 1	TF-1 Expert Tr Ru-En	 Analyzed	Date of final approve / Review and Revise status
	COMMON							
1C	Воздушный Кодекс Республики Таджикистан Air Code of the Republic of Tajikistan	yes						
			yes					
				yes				
					yes			
2C	Авиационные правила Использования Воздушного Пространства Республики Таджикистан Aviation rules of the use of airspace of the Republic of Tajikistan	yes						
			yes					
				yes				
					yes			
3C	Авиационные правила полетов Республики Таджикистан Aviation flight rules in the Republic of Tajikistan	yes						
			yes					
				yes				
					yes			
4C	Общие Авиационные Правила Республики Таджикистан – 21: Организация воздушного движения в Республики Таджикистан General Aviation Regulations of the Republic of Tajikistan – 21: Air Traffic Management in the Republic of Tajikistan	yes						
			yes					
				yes				
					yes			
	DUSHANBE	14						
1D	Инструкция по взаимодействию Аэродромной Службы и других наземных служб ОАО Международный Аэропорт города Душанбе обеспечивающих полеты со службой УВД Филиала ГУП «ТАН» города Душанбе при проведении работ на летном поле Interaction Instructions with Aerodrome Services and other terrestrial services of Dushanbe International Airport with the ATC services at the State Unitary Enterprise "TAN" at Dushanbe city during works on the airfield	yes						
2D	Инструкция по производству полетов аэродрома Душанбе Flight Operations Manual of Dushanbe Aerodrome	yes						
3D	Должностная инструкция диспетчера старта и руления (ПДСР) аэродрома Душанбе Job Description of the Controller Tower for Start and Taxiing (Tower) at Dushanbe Aerodrome	yes						
4D	Технология работы диспетчера старта и руления (ПДСР) аэродрома Душанбе Manual of the Controller Tower for Start and Taxiing (Tower) at the Dushanbe Aerodrome	yes						
5D	Должностная инструкция диспетчера системы посадки (ДПСП) аэродрома Душанбе Job Description of the Landing System Controller at Dushanbe aerodrome	yes						
6D	Технология работы диспетчера системы посадки (ДПСП) аэродрома Душанбе Manual of the Landing System Controller' at Dushanbe aerodrome	yes						
7D	Должностная инструкция диспетчера Подхода (ДПП) аэродрома Душанбе Job Description Approach Controller at Dushanbe Aerodrome	yes						
8D	Технология работы диспетчера Подхода (ДПП) аэродрома Душанбе Manual of Approach Controller at Dushanbe Aerodrome	yes						
9D	Должностная инструкция диспетчера вспомогательного старта (ВСДП) аэродрома Душанбе Job Description of the Controller of Subsidiary Start at Dushanbe Aerodrome	yes						
10D	Технология работы диспетчера вспомогательного старта (ВСДП) аэродрома Душанбе Manual of Controller of Subsidiary Start at Dushanbe Aerodrome	yes						
11D	Должностная инструкция диспетчера Брифинг-офиса аэродрома Душанбе Job Description of the Briefing – Office Controller at Dushanbe Aerodrome	yes						
12D	Технология работы диспетчера Брифинг-офиса аэродрома Душанбе Manual of the controller at the Briefing – Office	yes						

13D	Должностная инструкция диспетчеров радиолокационного и процедурного контроля ГС РЦ ЕС ОрВД Job Description of the radar and procedural control Controllers of the civil sector of the auxiliary district center of the unified air traffic management system	yes						
14D	Технология работы диспетчеров радиолокационного и процедурного контроля ГС РЦ ЕС ОрВД. Manual of the radar and procedural control Controllers of the civil sector of the auxiliary district center of the unified air traffic management system	yes						
	KHUJAND		2					
1H	Инструкция по производству полетов аэродрома Худжанд Flight Operations Manual of Khujand Aerodrome		yes					
2H	Должностная инструкция диспетчера Брифинг-офиса аэродрома Худжанд Job Description of the Briefing – Office Controller at Khujand Aerodrome at Dushanbe Aerodrome		yes					Changed, approved: 08-07-2016
3H	Технология работы диспетчера Брифинг-офиса ФГУП «ТАН» города Худжанд Manual of the controller at the Briefing – Office at the Branch of the State Unitary Enterprise "TAN" at Khujand city		yes					Changed, approved: 01-10-2014
4H	Должностная инструкция Пункта Диспетчера Старта и Руления (вышка) аэродрома Худжанд Job Description of the Controller Tower for Start and Taxiing (Tower) at Khujand Aerodrome		yes					Changed, approved: 08-07-2016
5H	Технология работы диспетчера Пункта Диспетчера Старта и Руления (вышка) ФГУП «ТАН» города Худжанд Manual of the Controller Tower for Start and Taxiing (Tower) at the Branch of the State Unitary Enterprise "TAN" at Khujand city		yes					Changed, approved: 08-07-2016
6H	Технология работы диспетчера Пункта Диспетчера Старта и Руления (вышки) аэродрома Худжанд Manual of the Tower Controller (Control Tower at Aerodrome) at Khujand Aerodrome		yes					Changed, approved: 08-07-2016
7H	Инструкция по взаимодействию Аэродромной Службы и других наземных служб ОАО Международный Аэропорт города Худжанд, обеспечивающих полеты, со службой УВД Филиала ГУП «ТАН» города Худжанд при проведении работ на летном поле Interaction Instructions with Aerodrome Services and other terrestrial services of Khujand International Airport with the ATC services at the Branch of the State Unitary Enterprise "TAN" at Khujand city during works on the airfield		yes					Changed, approved: 26-05-2014
8H	Должностная инструкция Диспетчера Системы Посадки (ДПСП) аэродрома Худжанд (Khujand - Radar) Job Description of the Landing System Controller at Khujand aerodrome (Khujand Radar)		yes					Changed, approved: 08-07-2016
9H	Технология работы Диспетчерского пункта Системы Посадки (ДПСП) аэродрома Худжанд (Khujand - Radar) Manual of the Landing System Controller's Point at Khujand aerodrome (Khujand Radar)		yes					Changed, approved: 08-07-2016
10H	Должностная инструкция Диспетчеров радиолокационного и процедурного контроля гражданского сектора вспомогательного районного центра единой системы организации воздушного движения Job Description of the radar and procedural control Controllers of the civil sector of the auxiliary district center of the unified air traffic management system		yes					Changed, approved: 08-07-2016
11H	Технология работы Диспетчеров радиолокационного и процедурного контроля гражданского сектора вспомогательного районного центра единой системы организации воздушного движения Manual of the radar and procedural control Controllers of the civil sector of the auxiliary district center of the unified air traffic management system		yes					Changed, approved: 08-07-2016
	KURGAN-TUBE			1				
1Q	Инструкция по производству полетов аэродрома Курган-тюбе Flight Operations Manual of Kurgan-tube Aerodrome			yes				Gafarov B.: Numerous changes and amendments in the text and most of the sections of the document. For instance: Section 1: General Description – Basis for preparation of the Manual Section: Flight operation resources: Scheme Visual approach to landing: Should be based on the test/training flights Section: General Description – Information about Kurgan-tube Airport should include 4 digit code of the Airport (based on the ICAO

								7910 document)
2Q	Должностная инструкция диспетчера брифинг-офиса аэродрома Курган-Тюбе Job Description of the Briefing – Office Controller at Kurgan-Tube Aerodrome			yes				Changed, approved: 08-07-2016
3Q	Технология работы диспетчера Аэродромного Диспетчерского Пункта (брифинг-офис) ФГУП «ТАН» города Курган-тюбе Manual of the controller at the Aerodrome Control Tower (briefing office) at the Branch of the State Unitary Enterprise "TAN" at Kurgan-Tube city			yes				Changed, approved: 10-10-2014
4Q	Должностная инструкция диспетчера вышки (Диспетчерский Пункт Аэродрома) аэродрома Курган-тюбе Job Description of the Tower Controller (Control Tower at Aerodrome) at Kurgan-Tube Aerodrome			yes				Changed, approved: 08-07-2016
5Q	Технология работы диспетчера Командно-Диспетчерского Пункта ФГУП «ТАН» города Курган-тюбе Manual of the Controller of Command-Control Tower at the Branch of the State Unitary Enterprise "TAN" at Kurgan-Tube city			yes				Old active, approved: 11-10-2011
6Q	Технология работы диспетчера вышки (Диспетчерский Пункт Аэродрома) аэродрома Курган-тюбе Manual of the Tower Controller (Control Tower at Aerodrome) at Kurgan-Tube Aerodrome			yes				Draft under the consideration Gafarov B. : Section: In the case of communication failure with flight manager in the airfield Section: Controller's action in emergency situations Section: During take-off in case of absence of ATIS (АТИС)
7Q	Инструкция по взаимодействию Аэродромной Службы и других наземных служб ОАО Международный Аэропорт города Курган-Тюбе, обеспечивающих полеты, со службой УВД Филиала ГУП «ТАН» города Курган-Тюбе при проведении работ на летном поле Interaction Instructions with Aerodrome Services and other terrestrial services of Kurgan-Tube International Airport with the ATC services at the Branch of the State Unitary Enterprise "TAN" at Kurgan-Tube city during works on the airfield			yes				Changed, approved: 15-04-2016 -
	KULOB				1			
1K	Инструкция по производству полетов аэродрома Куляб Flight Operations Manual of Kulob Aerodrome				yes			
1K	Должностная инструкция диспетчера вышки (Диспетчерский Пункт Аэродрома) аэродрома Куляб Job Description of the Tower Controller (Control Tower at Aerodrome) at Kulob Aerodrome				yes			
3K	Технология работы диспетчера вышки (Диспетчерский Пункт Аэродрома) аэродрома Куляб Manual of the Tower Controller (Control Tower at Aerodrome) at Kulob Aerodrome				yes			
4K	Инструкция по взаимодействию Аэродромной Службы и других наземных служб ОАО Международный Аэропорт города Куляб обеспечивающих полеты со службой УВД Филиала ГУП «ТАН» города Куляб при проведении работ на летном поле Interaction Instructions with Aerodrome Services and other terrestrial services of Kulob International Airport with the ATC services at the Branch of the State Unitary Enterprise "TAN" at Kulob city during works on the airfield				yes			