ヴィエトナム国
工業規格標準化計画
事前調査団報告書

1997年2月

国際協力事業団

No

ヴィエトナム国

工業規格標準化計画

事前調査団報告書

１９９７年２月

国際協力事業団

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I　事前調査の概要

1　目的

（1）プロジェクトの骨格についての協議及び合意の形成（S/Wの締結）

（2）その他プロジェクト実施上の細目についての協議及び合意の形成(ミニッツの締結)

2　団員構成

（1）総括	加藤　宏	JICA工業開発調査課課長
（2）標準化	鬼束　忠人	通産省標準部
（3）認証/検査	富川　浩明	通産省製品評価技術センター
（4）工業計画	三木　常靖	JICA国際協力専門員
（5）企画調整	飯田　鉄二	JICA工業開発調査課
（6）通訳	永井　蘭	日本国際協力センター

3　現地調査日程

7月29日（月）成田1000発(CX509)ー香港1340着
香港1445発(CX791)ーハノイ1550着

30日（火）0830　計画省表敬
0930　日本大使館表敬・打ち合わせ
1100　JICAヴィエトナム事務所打ち合わせ
1400　科学技術環境省(MOSTE)、S/W協議
1530　標準品質総局(STAMEQ)、S/W協議

31日（水）0900　工業標準化関連施設視察
情報センター(IC)、標準化研究所(VSI)、訓練センター(TC)、
計量研究所(VMI)、品質検査所(QUATEST)

8月　1日（木）0900　STMEQ、S/W協議

2日（金）0900　S/W及びM/M署名・交換
1100　JICAヴィエトナム事務所報告
1400　日本大使館報告

3日（土）車輌にて移動（ハノイーハイフォン）
1100　STAMEQハイフォン支局視察、調査内容説明

4日（日）加藤団長は、別の調査団（ハイテクパーク）に合流
他の団員4名は、国内航空便にて移動
ハノイ0720発(VN741）ーホーチミン0920着

5日（月）0830　品質検査所ホーチミン支局(QUATEST3)視察、
プロジェクト概要説明
1100　QUATEST3の研究施設(Laboratory)視察
1400　STAMEQホーチミン支局、プロジェクト概要説明

6日（火）0830　繊維工場視察
THANH CONG TEXTILE COMPANY

1330　機械工場訓練施設視察
SAIGON INDUSTRIAL COMPANY

7日（水）0845　電子機器工場視察
SONY VIET NAM Ltd.

1320　製鉄工場視察
THE SOUTHERN STEEL CORPORATION THU DUC STEEL WORKS <VIKIMCO>

8日（木）ホーチミン1300発(CX766)ー香港1630着
（当初予定は、ホーチミン1125発(CX766)ー香港1500着、香港1620発ー成田2115着であったが、CX766便が1時間30分遅れたため、香港に1泊することとなった。）

9日（金）香港1000発(CX504)ー成田1455着

4　主要面会者

○ヴィエトナム側公的関係者

計画省(Ministry of Planning and Investment)

Deputy Director	Dr. Do Van Giap
Senior Expert	Mr.Tran Tuan Anh

(Department of Science, Education, and Environment)

科学技術環境省(MOSTE, Ministry of Science Technology and Environment)

Vice Minister	Prof.Chu Tuan Nha
Deputy Director general	Dr. Le Dung

(Department of International Relations National ASEAN COST Serectary)

標準化総局(STAMEQ, Directorate for Standards and Quality)

Director General	Dr. Nguyen Huu Thien
Deputy Director	Mr. Nguyen Thu Ha
Director	Ms. Duong Xuan Chung

(Planning & Cooperation Department)

Expert	Mr. Hoang Thanh Van

(Planning & Cooperation Department)

品質検査所(QUATEST, Quality Assurance and Testing Centre)

Director	Mr.Hoang Van Lai

計量研究所(VMI, Viet Nam Metrology Institute)

Deputy Director	Mr. Ngo Huy Van

STAMEQハイフォン支局

Director	Mr. Do Huy So
Vice Director	Mr. Bui Xuan Tuan

品質検査所ホーチミン支局(QUATEST3)

Manager	Ms.Dinh Thi Huong
(Planning Division)	
Director	Ms. Le Thi Cam Nhung
Lab. Manager	Mr. Dinh Van Tru

STAMEQホーチミン支局

Director	Dr. Ho Van Cuu
Deputy Director	Mr. Ly Van Dan

○訪問会社及び工場並びに面談者

8/6 繊維工場THANH CONG TEXTILE COMPANY

Import Executive	Mr. Nguyen Tuan Thanh
(Import-Export Division)	

8/6 機械工場訓練施設SAIGON INDUSTRIAL COMPANY

Director of Production	Mr. Bui Quoc An

8/7 電子機器工場SONY VIET NAM Ltd.

Deputy General Director	Mr. Yoshikazu Shimizu
(Production Division)	

8/7 製鉄工場THE SOUTHERN STEEL CORPORATION THU DUC STEEL WORKS <VIKIMCO>

Imp.Exp. Director	Mr. Nguyen Huu Phuc

○日本側関係機関

日本大使館	和田書記官
JICAヴィエトナム事務所	等々力事務所長、辻野所員、大久保所員

II 調査・協議結果

1　S/W案について

当方からの提案について特段の修正提案はなく、原案通り合意。なお、S/Wの内容をより明確化するために先方と行った補足協議の結果は、下記２以下に記すとおり。

2　調査の具体的内容及び重点分野について

（1）ヴィエトナム側は、M/Pが、規格の開発とその適用、計量標準、検査・検定、品質管理等の様々な領域について広く問題点を洗い出したうえで改善策を提言することを期待するものであり、したがって、特に重点を置いて取り扱うべき領域をM/P作成に先立ってアプリオリに定めることは適当でないと考えること、また、それぞれの領域において対応すべき改善策の緊急度・重要度は調査の結果として提言されることを期待する旨表明。調査団はこの点を了解した。

（2）ただし、ヴィエトナム側としては、領域ごとの特性に鑑み想定される改善要素として、次の点に対する日本側の重点的な対応を要望。日本側はそのようなヴィエトナム側希望に配慮することを約した。
－改善の具体的項目として、一般的には、「規則体系整備」、「人材育成」、及び「施設・機材」の側面を特に重視したい（組織、システム等については比較的進んでいるとの認識）。
－「規則体系整備」については全領域に関して重要であるが、「人材育成」については認証制度と品質管理に関して、また施設・機材整備については計量・検査部門に関して特に具体的な提言がなされることを希望する。

（3）個別具体的な提言内容をどこまで掘り下げて行うかについては、現時点に置いてアプリオリに決めることが困難であるので、調査の進捗に過程で、ヴィエトナム・日双方が協議して決定していくこととする。

（4）本事前調査を踏まえ、調査団において本格調査の現地調査内容（案）および調査団員の構成（案）についてはそれぞれ別紙１・別紙２のとおり。

3　調査の対象セクターについて

（1）サービスセクターは調査の対象から除外することについて双方が合意。

（2）サービスセクター以外の製造業関係のサブ・セクターについては、ヴィエトナム側は、次のとおりの優先順位であることを表明。日本側は、ヴィエトナム側の希望に配慮しつつ、動員可能なインプットリソースとの関係で検討して決定することとしたい旨応答し、ヴィエトナム側はこれを了解。

－機械（産業機械）分野
－電気機器及びその部品分野
－電子機器及びその部品分野
－金属加工分野
－繊維分野
－建設資材分野
－石油関連製品分野

4　その他

（1）双方は、本調査がヴィエトナム・日双方の緊密な共同作業によるものであるとの基本的理解を確認。

（2）日本の調査チームが、製造現場の実態把握のために工場見学等を必要とする場合は、ヴィエトナム側は、必要な情報提供のほか、工場見学の際の同行等、必要な便宜供与を行うことを確認。

（3）ヴィエトナム側は、VI-4　記載するステアリング・コミッティに関し、必要な関係省庁を招聘する意向であることを表明。

（4）ヴィエトナム側は、今回のM/Pに関する調査案件が、その後の更なる協力関係への礎となることを期待する旨の意向を表明。

5　所感

ヴィエトナム側の標準化に関する日本の協力への期待は非常に高く、かつ、本件開調案件をヴィエトナムとの工業標準化に関する協力の第一歩として位置づけ、無償・プロ技を含めた継続した日本の協力を要望している旨の表明があった。開発調査の対応について慎重を期すこととし、無償・プロ技への連携も考慮に入れた調査を実施していくこととすべきであろう。

1章　工業部門の現状と計画

1 - 1.　近隣諸国との比較

表 1 - 1. は ASEAN およびインドシナ諸国の社会経済指標を比較したものである。まず人口に関してヴィエトナムは、これら諸国の中でインドネシアに次ぐ第 2 の地位を占める。しかし GNP の規模において同国は、インドネシアやタイの約 1/10、マレーシアやフィリピンの 1/5 程度にすぎない。これらの結果、所得水準は $190 と最も低い位置に甘んじている。ただし製造業の対 GNP 比は他の ASEAN 諸国と肩を並べるレベルにあり、所得水準の割りには工業化がかなり進んでいることを示唆している。表が示すようにセメントや粗鋼の生産規模をみると GNP の規模における差よりはずっと近い水準にある。また社会指標、特に教育面では ASEAN 諸国との格差はあまり大きくない。なおインドシナ諸国との比較では規模および所得以外の水準において群を抜いている。

ヴィエトナムの工業開発を考えるとき上でみた経済活動が低水準である（統計上の問題もあろうが）一方でかなりの工業経験をもっていることを無視できないだろう。ただしコストを無視して設立された非効率な産業の存在や社会主義的な運営に由来する生産性向上のインセンティブ不足など負の遺産もあるだろうことも忘れてはなるまい。

1 - 2.　工業部門の現状

付属資料 1 - 1. によれば GDP の成長率は 1991 年には 6.0% であったものが 1992 年以降は毎年 8% を超えている。これを部門別にみると最も目覚ましかったのは工業部門（建設を含む）で、1992 年以降は毎年 13 - 14 と 2 桁成長を遂げている。このような発展は 1980 年代末からドイモイ政策のもとに実施されている市場経済化努力が効を奏したものとされている。

さて以下ではヴィエトナムの工業部門の現状を主として政府統計からみることにするが、当国の統計では社会主義時代の名残りであろう、企業あるいは事業所を state industry とそうでないものに分ける。当国の工業統計を使用するときにはこれらの項目およびその細分類項目の定義を確認することに特別の関心を払う必要がある。なお政府統計はかなり不備で、たとえば以下の各表に対応する従業者数は公表されていない。また特に民間部門

に関して捕捉が十分でないという指摘もある。

表 1-2. は工業部門（ここでは建設を含まない）の事業所数を経営形態別および地域別に示している。経営形態はまず、state industry と non-state industry とに大別する。本報告書ではそれぞれ「国公営」、「非国公営」とした。前者はさらに central state industry（中央政府省庁により経営されるもの。「国営」とした）と local state industry（地方行政体による経営。「公営」）とに細分類される。後者の non-state 部門は cooperatives、private、private household に細分類される。それぞれ「組合」、「民営」、「個人」とした。

同表は工業部門全体で 46 万を超える事業所が存在するとしている。地域別には各経営形態ともハノイ周辺とホーチミン市周辺に多いことは予想されるとおりである。なかでも「国公営」および「組合」の事業所がハノイ周辺に多く、「民営」および「個人」の事業所はホーチミン市周辺に多いことは歴史の必然ということであろう。

経営形態別では工業部門全体の事業所数 46 万の圧倒的大部分を「個人」企業が占める。もしこれらが文字通り家内工業の規模であるならば本件がかかわる標準化や品質管理の振興対象にはなりがたいのではないだろうか。次いで事業所数が多い「組合」企業は社会主義時代の集団経営の名残りで市場経済化政策の結果、補助金を打ち切られて「民営」企業に転換したり、「個人」企業に分解したりの過程にあるとみられている。

そこで以下ではこれら以外、すなわち「国公営」および「民営」を中心にみていくことにするが、同表によればその数は工業部門全体で約 5300 である。ただし「国公営」の中にも小零細規模のものが少なからず含まれているといわれている。

表 1-3. の合計欄は工業部門事業所の粗生産額を経営形態別に（ただし国公営と非国公営の別のみ）示している。前表が数の上では非国公営部門が優勢であることを示しているに対して、この表からは生産額では国公営事業所が非国公営部門の約 3 倍とはるかに大きいことがわかる。なお同じ出典にはここ数年の成長率においても国公営が優勢というデータもある。社会主義時代からの趨勢で民間部門が未発達ということであろうが、最近成長の著しい外資系企業が統計上、国営部門に含まれることにもよるのであろう。

表 1-3. および表 1-4. はそれぞれ金属機械分野の生産額と事業所数を示している。ここ

での金属機械業は表に示されている細分類業種にみる通り、日本産業分類等での鉄、非鉄、機械、金属製品を含んでいる。表 1-4. によればこの分野の事業所数の合計は 3 万 5 千近いが、そのうち「国公営」および「民営」だけでは 670 程度しかない。これら 2 枚の表より国公営部門の 1 事業所当たり生産額を計算してみると、当分野の生産規模は全工業業種の平均の 1/2 以下となる。なお当分野の生産額について「民営」部門だけをとらえたデータは公表されていない。

調査対象各業種の状況をより具体的に示す資料を STAMEC に求めたところ、ヴィエトナム商工会議所会員録の最新判を提供してくれた。この資料は、各会員企業の概要をアルファベット順に記載した Company Information の部と業種別に会員企業名を示す Company index by economic sector の部からなっており、農業からサービス業までの広い分野にわたる 4000 以上の企業を網羅している。Company Information の部では各企業の名称や住所等の他に法人の種類（state owned/limited liability/private/joint stock/others の別。これらの定義についての記載はない）、従業員数および事業内容が記載されている。

表 1-5. は Company index の部より作成したもので金属機械分野における細分類業種別の会議所所属企業数を示す。製造品目がかなり具体的にわかるまでに業種分類が詳細である点、この資料は調査対象企業の母集団を掴む上で有用であろうと考えられる。ただし以下の点に留意する必要があるようだ。

(1) Company index の部では事業が複数の業種にまたがる企業の名前はそれぞれの業種に記載されている。したがって表 1-6. の企業数には重複カウントがある。
(2) 無作為に数ページをくって法人の種類別（経営形態別）の企業分布をみたところ、limited company 10%、others 1% の程度、他はほとんど state owned であった。標本数が小さいからこれらの数字は正確ではないにしても、この資料が民間企業の実勢を十分に反映していないのではないかと感じさせられる。本件調査では民間部門にこの資料における企業数構成比率を上回る関心を払う必要があるのではないだろうか。
(3) 外資系企業が除外されていること。これはまえがきに外資系企業は準会員とするとあることによるのであろうか。企業名がわかる日系企業をいくつか検索してみたがいずれも記載がなかった。他の ASEAN 諸国の場合と同様に、本件調査の領域では外資系企業の果たすべき役割が小さくないであろうから、外資系企業を別途調査対象に含めるべきであろう。

付属資料 1 - 1. には外国投資についてのデータが所載されている。これによれば件数、金額とも年々順調に伸びている（しかし他の ASEAN 諸国にはまだ及ばない）。また産業別（業種別）の投資額の合計において「重工業」が第一位を占めている。東洋経済社「海外進出企業総覧」1996 年版には 69 社の日系現地法人が記載されており、そのうち 19 社は金属機械分野である。具体的には自動車、同部品、カラー TV やオーディオ機器、電気・電子部品、工業用ミシン、光学機器、金型などである。

1 - 3.　工業部門の計画

本年（1996 年）6 月に開催されたヴィエトナム共産党第 8 回党大会において中長期国家開発計画というべきものが発表された。新聞報道（6 月 28 日日経夕刊等）によれば 2020 年までの目標を次のように設定している。

－工業化を達成する。

－国営経済分野が主導的役割を担う。民間経済分野もかなりの部分を占める。ただし国営企業については大会参加者より批判もあり、株式会社化推進などの意見もでた。

－工業化と近代化の過程において 2000 年までの期間が重要である。

2000 年までの 5 年間についてはより詳しい計画となっており、以下に本件に関係ある内容を述べる［注］。まず主要目標については概略以下の通り。

－GDP の成長率は年 9 - 10%。工業部門は年 13 - 14% で成長し、計画期間中にその GDP 構成比を 34 - 35% に高める。

－輸出の伸び率は年 24 - 28%。このため競争力を強化し、地域自由貿易協定に参加する条件を整備する。また投資環境を改善し、外国の投資や技術に対する受容能力を高める。

－引き続き経済改革、行政改革、市場経済化を進め、治安秩序と社会安定の維持に努める。

. . . . . .

注： Socialist Republic of Vietnam, "Socio-economic Development and Investment Requirements for the Five Years 1996-2000 - Government Report to the Consultative Group Meeting", Hanoi, October 1996 および "The SaigonTimes", 6-12 July 1996 による。

また工業開発について次のような諸点を強調している。
－焦点は輸出と輸入代替。
－競争力の強化。
－投資の促進、とりわけ外国投資の誘致。
－技術革新（重点分野は食品加工、消費財、化石燃料およびエネルギー、セメント、肥料、電子）。
－工業団地の建設（輸出加工区やハイテク地区を含む）。
－地方への工業分散。伝統的手工芸村の発展。

さてこのような叙述からはヴィエトナム工業の将来像がそれほど具体的にでてはこないけれども、市場経済化、工業立国、輸出の振興、外国投資の促進などのキーワードから当国が他の東、東南アジア諸国がたどったと同じような発展パターンを指向しているように考えられる。もしそうだとしたら当国が今後標準化・品質管理の推進に取り組むにあたってもこれら諸国の経験が大いに参考になるのではないだろうか［注］。

日本がどのように標準化・品質管理の推進に取り組んできたかの歴史を振り返ると、その時々の経済や社会の構造、特に産業構造、労働需給、技術水準、貿易市場、消費動向などの状況の変化に応じて、標準化や品質管理の取り組みに質的な変化を迫られてきた。台湾と韓国は何年かのタイムラグの後に同じような経験をしたようである。最近は東南アジア諸国がこれに追随しているように見える。ヴィエトナムにとってもこのような経験が大いに参考になるはずである。

・・・・・・・・・・・・・・・・・・・・

注：Noriyuki Kano, "Evolution of Quality Control with Change of Economic Structure in Japan", Reports of Statisticsal Application Research JUSE, Vol.31, Sept. 1984. および（社）海外コンサルティング企業協会、「工業標準化・品質管理推進のための総合開発調査」、平成２年３月　を参照。

表１-１．ASEAN・インドシナ諸国の社会経済指標

	国土面積 1000 km2 {1}	人口 1000人 {2}	文盲率 (%) {2}	GNP 百万 US$ {2}	一人当り GNP US$ {2}	製造業 % of GDP {1}	セメント生産 1000 ton {3}	粗鋼生産 1000 ton {4}
ブルネイ		279	…	3,975	14,240			
インドネシア	1,904.6	189,907	23	167,632	880	20.8	14,048	3,220
マレーシア	329.8	19,498	22	68,674	3,520	30.1	8,366	2,046
フィリピン	300.0	66,188	10	63,311	960	24.7	6,540	473
シンガポール	0.6	2,819	…	65,842	23,360	27.6	2,199	530
タ　　イ	513.1	58,718	7	129,864	2,210	28.4	21,711	1,461
ヴィエトナム	331.7	72,500	12	13,775	190	26.4	3,926	301
カンボジア	181.0	9,968	65	…	…	7.0		
ラ　オ　ス	236.8	4,742	56	1,496	320	12.8		
ミャンマー	676.6	45,555	19	…	…	9.1	472	25

注：{1} = ADB, "Key Indicators of Developing Asian and Pacific Countries 1994", OUP, 1994, Table 10, 13
ただし '製造業 % of GDP' のデータは各国とも1993年のもの。なお、タイの'製造業 % of GDP' は World Bank, "Trends in Developing Countries 1995", p.501 による。

{2} = World Bank, "The World Bank Atlas 1996", p. 8, 9, 18, 19.
ただし、人口とGNPは1994年のデータ、文盲率は1990年のデータである。

{3} = UN, "1993 Industrial Commodity Yearbook", NY, 1995
シンガポールは1991年のデータ。その他の国は1992年。

{4} = International Iron and Steel Institute, "Steel Statistical Yearbook 1995", Brussels, 1996
各国とも1994年のデータ。

… = not available

空白のセルは原資料にデータがない。

表 1－2. 経営形態別地域別工業事業所数 1993年

	国公営		非国公営			合計
	国営	公営	組合	民営	個人	
総数	522	1,508	5,287	3,322	452,866	463,505
うち北部山岳内陸（13省）	88	212	656	91	45,828	46,875
紅河デルタ（ハノイ等7市省）	207	376	1,857	313	171,874	174,627
中部海岸北部（6省）	19	216	1,276	75	85,589	87,175
中部海岸南部（7省）	25	169	797	89	43,825	44,905
中央高原（4省）	6	47	59	57	8,502	8,671
南部北東部（ホーチミン等5市省）	165	328	607	1,133	33,457	35,690
メコン河デルタ（11省）	9	160	35	1,564	63,791	65,559

注 ：電力、石油部門を含む。
出所：General Statistical Office, "Statistical Yearbook 1994", Hanoi,1995, Table 6.27 - 6.30.

表 1 - 3.　経営形態別金属機械事業所数　1993 年

	国公営		非国公営			合計
	国営	公営	組合	民営	個人	
全工業業種総数	522	1,508	5,287	3,322	452,866	463,505
うち金属機械	173	264	941	231	33,046	34,655
うち鉄鋼	5	6	42	10	634	697
非鉄	15	13	15	3	1,579	1,625
機械・機器	107	150	265	117	8,615	9,254
電気・電子	27	35	43	36	1,244	1,385
その他金属製品	19	60	576	65	20,974	21,694

注　：「全工業業種」には電力、石油部門を含む。
出所：General Statistical Office, "Statistical Yearbook 1994", Hanoi,1995, Table 6.22 - 6.26.

表 1 - 4. 経営形態別金属機械粗生産額　1993年

単位：10 億ドン

	国公営	非国公営	合　計
全工業業種	46,225	16,553	62,778
うち金属機械	4,737	2,064	6,800
うち鉄鋼	1,054	154	1,208
非鉄	431	116	546
機械・機器	1,469	1,110	2,579
電気・電子	1,564	168	1,732
その他金属製品	219	516	735

注　：「全工業業種」は電力、石油部門を含む。
出所：General Statistical Office, "Statistical yearbook 1994", Hanoi,1995, Table 6.16.

表 1.-5. 金属・機械業種別商工会議所会員企業数

	企業数		企業数
金属・金属製品製造	98	事務機器・コンピューター製造	8
金属製造 (Production of Metals)	10	電気・電子・通信機器製造	113
鋳造	5		
金属構造・部品	12	電気機器	58
金属製タンク	5	ラジオ・テレビ・通信機器製造	55
ボイラー	2		
金属処理・亜鉛メッキ	5	その他の機器製造	17
手工具・一般金物	10		
その他金属製品	49	医療・外科機器製造	6
		測定・試験・光学機器	8
機械製造	99	時計 (腕・掛・置時計)	3
モーター・タービン	6	輸送機器・部品の製造・修理	122
昇降機器・荷役機器	3		
農業・林業機械	31	自動車・トラクター	42
工作機械 (Mechanical Machines)	5	船舶	49
建設・鉱業機械	14	機関車・鉄道車両	3
食品・食品加工機械	9	航空機	2
繊維・衣料・皮革産業機械	9	モーターバイク	4
その他機械・機器	22	自転車	22

注　：事業が複数の業種にまたがる企業はそれぞれの業種でカウントされている。
出所：Chamber of Commerce and Indutry of Vietnam, 'Vietnam Business Directory 1995-1996'

ベトナムの主要経済指標

ジェトロ・ハノイ事務所

	1991	1992	1993	1994	1995*
GDP成長率（%）	6.0	8.6	8.1	8.8	9.5
工業生産（%）	9.0	14.0	13.1	14.0	13.9
農業生産（%）	2.2	7.1	3.8	3.9	4.6
サービス（%）	7.9	7.0	9.2	10.0	10.3
インフレ率（%）	67.5	17.5	5.2	14.4	12.7
貿易収支（100万ドル）	▲251	▲65	▲939	▲1,771	▲2,200
輸出額（0万ドル）	2,087	2,475	2,985	4,054	5,300
（前年比、%）	▲13.2	18.6	20.6	35.8	30.7
輸入額（100万ドル）	2,338	2,540	3,924	5,825	7,500
（前年比、%）	▲15.0	8.6	54.5	48.4	12.9
国別輸出額：					
日本（100万ドル）	719	834	937	1,181	1,480(27.9%)
シンガポール（100万ドル）	425	402	380	610	740(14.0%)
香港（100万ドル）	223	202	169	266	349(6.6%)
中国（100万ドル）	19	960	136	206	320(6.0%)
旧ソ連（100万ドル）	215	105	135	165	218(4.1%)
主要国別輸入額：					
日本（100万ドル）	158	239	452	676	785(10.5%)
シンガポール（100万ドル）	722	822	1,058	1,590	1,950(26.0%)
韓国（100万ドル）	152	221	282	404	510(6.8%)
フランス（100万ドル）	148	162	267	331	375(5.0%)
旧ソ連（100万ドル）	358	100	144	218	282(3.8%)

日本の対越貿易（９５年、輸出額 922百万ドル、輸入額 1,716百万ドル）：

主要輸出品　①輸送機械(22.6%)　②一般機械(20.7%)　③繊維(11.5%)

主要輸入品　①鉱物性燃料(38.6%)　②繊維製品(24.8%)　③魚介類(19.6%)

（注）　９５年の数字は推定値

（出所）各種政府資料、新聞情報からジェトロ・ハノイ事務所作成。日本の対越貿易額は日本の通関統計

ベトナムにおける外国投資状況

主要国・地域別：　　（単位：件、１００万ドル）

	１９９２年		１９９３年		１９９４年		１９９５年		累計額		
	件数	金額	件数	金額	件数	金額	件数	金額	件数	金額	(構成比)
台湾	26	530	44	404	64	365	51	1,149	239	3,600	(18.9%)
日本	11	221	15	76	27	333	47	1,130	135	2,200	(11.6%)
香港	40	219	35	402	48	547	22	104	186	2,200	(11.6%)
韓国	9	107	37	371	42	265	47	565	141	1,500	(7.9%)
シンガポール	15	78	26	250	29	598	37	488	116	1,500	(7.9%)
米国			1	0.2	20	220	22	531	53	1,140	(6.0%)
マレーシア	8	21	12	347	11	126	12	94	43	857	(4.5%)
オーストラリア	9	116	14	158	11	50	10	222	47	703	(3.7%)
合計	193	1,926	261	2,615	340	3,722	367	6,524	1,375	19,000	(100%)

（注）ＭＰＩ認可ベース。累計額は９６年２月１３日現在。合計にはその他を含む。
（出所）ＭＰＩ資料をもとにジェトロ・ハノイ事務所作成。

主要産業別投資状況：　　（単位：件、１００万ドル）

	１９９１年		１９９２年		１９９３年		１９９４年		１９９５年	
	件数	金額	件数	金額	件数	金額	件数	金額	件数	金額
重工業	7	62.6	22	395	35	584	48	615	68	903
輸送機械	3	72	4	11	4	44	20	93	15	669
軽工業	17	30.8	29	92	54	360	63	322	92	853
石油・ガス	6	129	12	630	7	94	9	121	9	63
繊物	14	41	19	85.9	38	500	55	185	51	403
農林業	22	411	32	173	36	89	56	501	63	589
水産業	2	1.9	4	8	6	4	10	52.9	11	33
運輸・物流	4	4.3	4	10.6	2	15	11	55.6	6	12.3
不動産開発	12	254	12	142	42	1.1	63	1.5	60	2.7
観光サービス	11	48	22	183	11	18	1	2	6	32
金融・銀行	1	15	7	110	5	50	3	45	6	71

（注）件数は稼働認可プロジェクト件数。金額は総投資額。
（出所）ベトナム・エコノミック・タイムズ誌 ９６年３月号。

ベトナムの10大投資対象地域

	面積(Km²)	人口(1,000人)	外資件数	認可金額(100万ドル)
(1)北部ベトナム				
①ハノイ (HANOI)	920	2,100	258	4,440
②クアンニン (QUANG NINH)	5,938	389	16	86.2
③ハイフォン (HAIPHONG)	1,502	2,100	48	830
(2)中部ベトナム				
④クアンナム・ダナン (QUANG NAM-DANANG)	11,985	1,900	39	528
⑤カインホア (KHANH HOA)	5,258	923	19	170
(3)南部ベトナム				
⑥ホーチミン (HOCHIMINH CITY)	2,090	4,300	560	6,700
⑦ソンベ (SONG BE)	9,519	1,080	64	429
⑧ドンナイ (DONG NAI)	5,864	1,700	145	1,900
⑨バリア・ブンタウ (BA RIA-VUNG TAU)	1,956	657	49	240
⑩カントー (CAN THO)	2,950	1,700	11	50

ベトナム国工業標準化計画　事前調査報告

計量（計量標準）、検査、認証

1．計量

国家計量標準を管理する組織はSTAMEQ傘下のＶＭＣ（Vietnam National Metrology Center）である。現在スタッフは約９５名である。

国家標準として長さ、質量、体積をはじめ基本的な標準は保有しいたが、標準物質については何も供給されていないようである。標準の精度は各国で実施されるラウンドロビンテストを通して国際標準とのチェックを受けているとのことである。

国家標準を維持、管理する体制は、組織としては確立されていると考えられるが、一部の標準（Optics、Sound 等）に関してはＯＣＭ（Optical Center for Metrology）やＶＴＶ（Vitnam Television）で管理する体制になっているようである。また、ホーチミンにあるＱＵＡＴＥＳＴ３ではＶＭＣ管理の国家標準がありながら、信頼性の観点からシンガポールで校正された標準を用いており、STAMEQではある標準（長さ等）に関してはＶＭＣの標準と同位であると考えている。国際的には、国家標準が複数あることは群管理される標準を除き認められない。

標準を供給するスキームは十分調査できなかったが、ＶＭＣでは企業からの依頼により校正を行っているケースと、ＱＵＡＴＥＳＴ１～３で使用される標準の校正を実施しているようである。また、ホーチミンのＱＵＡＴＥＳＴ３ではMetrology labで企業からの依頼により計量標準の校正を行っている。

このようにユーザー対し直接標準を供給する機関がＶＭＣ又はＱＵＡＴＥＳＴ３であるが、役割分担等の何らかの取決めがあるかは不明。単に地理的な問題（ハノイとホーチミン）であると推測する。

国家標準を維持、管理する組織及び標準の供給に関しては、STAMEQでは今後の本格調査に合わせ、新たな標準の開発等を含めた体制整備を行っている最中であると共に、本格調査で出される問題点を双方で検討しより適正な体制を整えたい意向である。

その他として、標準を維持、管理するための試験室は調査時においては温度の制御が十分でなかった。環境条件の管理の定めはあるとのことであるが、実際には停電等が頻繁にあり守られていないのが現状のようである。

今後詳しく調べるべきポイントとして次が挙げられる。

① 現有の国家標準が適正な精度を持っているか。種類は十分か。

② 国家標準を維持、管理する施設、設備が十分か。

③ 国家標準をユーザー（企業等）に供給する体制が出来ているか。

④ 校正の技術は十分か。

⑤ 国家標準を一元的に管理できる可能性の確認（STAMEQですべて管理できるか、ＶＭＣで全ての国家標準を維持、管理することが可能か）

⑥ 新たな計量標準の開発する機関はどこか（ＶＭＣか？）。開発する能力は十分か。

２．検査、認証

政府認証として、計量法に基づき、法に定められた計量器（水道メーター等）は地方組織である各省の試験所で検定を受けることが義務づけられている。検定を受けるべき計量器は法に定められているが具体的品目、検定基準については調査が必要である。

検定に必要な器具等は全ての省の試験所を調査したわけではないので全体を把握していないが、とくに器具の精度の確認が必要であると思われた。また試験室等の施設も老朽化が激しく試験環境は十分とは言い難い。

ＱＵＡＴＥＳＴ１～３でも同様の検定が行われているようであったが省の試験所との役割分担等が定められているかは不明であった。

試験所認定制度については、ＶＩＬＡＳ(VIETNAM LABORATORY ACCREDITATION SCHEME)と呼ばれるスキームを作成している。これはAccreditation bodyとしてSTAMEQ内にAccreditation Concilを設け試験所を認定するスキームであり、認定機関としてＩＳＯガイド５８に、認定を受ける側の試験所（Accredited Lab)はＩＳＯガイド２５に整合するよう意図されているようである。

STAMEQではすでに５３企業の試験所を認定したとのことであるが、このスキームが作成される以前のことであり、実態は企業が製造する製品の検査結果を用いてＱＵＡＴＥＳＴが証明している様である。従って現在のところ本来の認定試験所は存在しないと考えられる。

ＱＵＡＴＥＳＴでは、製品の輸出、輸入のための検査や、企業等から製品の品質確認のための検査の依頼を受け実施しているが、公共の試験所以外の試験所については調査は実施されなかった。しかし、今回の調査工場で一部の工場では検査設備がなく、検査が必要な場合はＱＵＡＴＥＳＴに依頼を行っており、現時点では試験検査機関としてＱＵＡＴＥＳＴの役割は重要である。

いずれにせよ試験所の検査結果が国際的に認知されるためには、ＶＩＬＡＳのような試験所認定制度に基づき試験所が認定されることが必要である。

III 資料

1 実施細則(Scope of Work)

2 協議議事録(Minutes of Meetings)

3 質問書(Questionairre)

4 質問書への回答

SCOPE OF WORK
FOR
THE STUDY
ON THE DEVELOPMENT OF
INDUSTRIAL STANDARDIZATION, METROLOGY, TESTING
AND QUALITY MANAGEMENT IN
THE SOCIALIST REPUBLIC OF VIET NAM

AGREED UPON BETWEEN

THE MINISTRY OF SCIENCE, TECHNOLOGY AND ENVIRONMENT
AND
THE DIRECTORATE FOR STANDARDS AND QUALITY (STAMEQ)

AND

THE JAPAN INTERNATIONAL COOPERATION AGENCY

Hanoi, August 2, 1996

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MINISTRY OF SCIENCE,TECHNOLOGY
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SOCIALIST REPUBLIC OF VIET NAM

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I. INTRODUCTION

In response to the request of the Government of the Socialist Republic of Viet Nam (hereinafter referred to as "the Government of Viet Nam), the Government of Japan decided to conduct the Study on the Development of Industrial Standardization, Metrology, Testing and Quality Management in Viet Nam (hereinafter referred to as "the Study") in accordance with the relevant laws and regulations in force in Japan.

Accordingly, the Japan International Cooperation Agency (hereinafter referred to as "JICA), the official agency responsible for the implementation of the technical cooperation programmes of the Government of Japan, will undertake the Study in close cooperation with the relevant authorities concerned of the Government of Viet Nam.

The present document sets forth the scope of work for the Study.

II. OBJECTIVES OF THE STUDY

The objective of the Study is to prepare a master plan for the development of industrial standardization, metrology, testing, and quality management in the Socialist Republic of Viet Nam. The master plan is to cover the areas of regulations, systems/procedures, organizations, human resources, facilities/equipment, and others.

III.SCOPE OF THE STUDY

In order to achieve the above objective, the Study shall cover the following items:

1. To evaluate the present condition and needs of the activities on standardization, metrology, testing and quality management in Viet Nam.

2. To review the policies, strategies and social-economic development plans essential for the promotion of standardization, metrology, testing and quality management in Viet Nam.

3. To evaluate and identify the problems in the standardization, metrology, testing and quality management in Viet Nam.

4. To prepare a master plan in detail for the development of industrial standardization, metrology, testing and quality

management in Viet Nam, which will include, among others, the following subjects:

4.1. Recommendation on organization structure of STAMEQ to meet its required functions and tasks

4.2. Recommendation for the development of a technical infrastructure for metrology and testing services.

4.3. Recommendation on specific priority projects (standard development, testing, metrology, training and quality management)

4.4. Priority and procedure for the implementation of the projects.

4.5. Project justification and viability

5. Recommended Implementation Plan

5.1 Implementation plan and time schedule
5.2 Appropriate organizational and administrative arrangements

6. Conclusion and recommendations

IV. WORK SCHEDULE

The Study will be carried out in accordance with the attached tentative work schedule.

V. REPORTS

JICA shall prepare and submit the following reports in English to the Government of Viet Nam in accordance with the attached tentative work schedule.

Twenty (20) copies of the Inception Report
Ten (10) copies of the Progress Report
Ten (10) copies of the Interim Report
Thirty (30) copies of the Draft Final Report
Thirty (30) copies of the Final Report

VI. UNDERTAKING BY THE VIET NAM SIDE

1. To facilitate the smooth conduct of the Study, the Viet Nam side shall, in accordance with the relevant laws and regulations in

force in Viet Nam, take the following necessary measures:

1) to secure the safety of the Japanese study team (hereinafter referred to as "the Team");

2) to permit the members of the Team to enter, leave and sojourn in Viet Nam in connection with the assignment therein, and exempt them from alien registration requirements and consular fees:

3) to exempt the Team from taxes, duties and any other charges on equipment, machinery and other materials brought into and out of Viet Nam for the conduct of the Study;

4) to exempt the Team from income tax and charges of any kind imposed on or in connection with any emoluments or allowances paid to the members of the Team;

5) to provide necessary facilities to the Team for remittance as well as utilization of the funds introduced in Viet Nam from Japan in connection with the implementation of the Study;

6) to secure permission for entry into private properties or restricted areas for the conduct of the Study;

7) to secure permission for the Team to take all data, documents and necessary materials related to the Study out of Viet Nam to Japan; and

8) to provide medical services as needed. Its expenses will be chargeable to the members of the Team.

2. The Government of Viet Nam shall bear claims, if any arises, against the members of the Team resulting from, occurring in the course of, or otherwise connected with the discharge of their duties in the implementation of the Study, except when such claim arises from gross negligence or willful misconduct on the part of the members of the Team.

3. STAMEQ shall act as the counterpart agency to the Team and also as a coordinating body in relation with other governmental and non-governmental organizations concerned for the smooth implementation of the Study.

4. The Government of Viet Nam shall organize the Steering Committee for the purpose of smooth and effective implementation of the Study, and its secretariat shall be set up within STAMEQ.

VII. UNDERTAKING OF THE JAPANESE SIDE

For the implementation of the Study, JICA shall take the following measures:

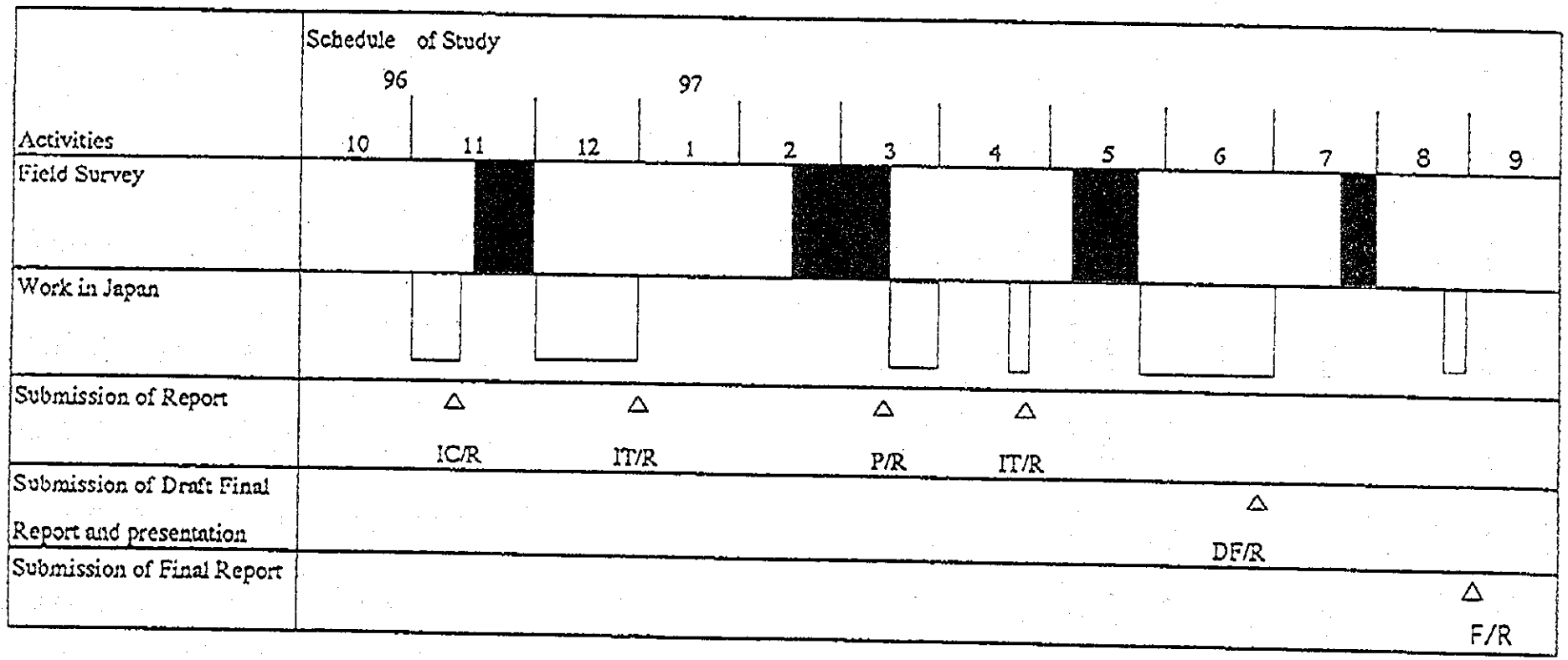
1. to dispatch, at its own expense, the Study team to Viet Nam;

2. to pursue technology transfer to Viet Nam counterpart personnel in the course of the Study.

VIII. CONSULTATIONS

JICA and STAMEQ the shall consult with each other in respect of any matters that arise from, or in connection with, the Study.

Tentative Schedule



MINUTES OF MEETING
ON
THE STUDY
ON THE DEVELOPMENT OF
INDUSTRIAL STANDARDIZATION, METROLOGY, TESTING AND QUALITY MANAGEMENT
IN
THE SOCIALIST REPUBLIC OF VIET NAM

AGREED UPON BETWEEN

THE DIRECTORATE FOR STANDARDS AND QUALITY

AND

THE JAPAN INTERNATIONAL COOPERATION AGENCY

Hanoi, August 2,1996

DR. NGUYEN HUU THIEN
DIRECTOR GENERAL
DIRECTORATE FOR STANDARDS AND QUALITY
MINISTRY OF SCIENCE, TECHNOLOGY AND ENVIRONMENT
SOCIALIST REPUBLIC OF VIET NAM

MR. HIROSHI KATO
LEADER
PREPARATORY STUDY TEAM
JAPAN INTERNATIONAL COOPERATION AGENCY

JAPAN

With regard to the Scope of Work for the Study on the development of Industrial Standardization, Metrology, Testing and Quality Control in the Socialist Republic of Viet Nam singed in Hanoi on August 2, 1996, the following points were discussed and confirmed between the Japanese study team ("the Japanese side") and the representatives of STAMEQ ("the Viet Nam side")

1 On the Framework of the Study

(1) Referring to the matrix shown below, the Japanese side and the Viet Nam side (hereinafter collectively referred to as "both sides") discussed about the fields to be covered under the study and, if any, ones that should be given special emphasis. The Viet Nam side, in summary, expressed the following view, which was accepted by the Japanese side:

- -the Study should make general recommendations in each and every field of the matrix (development of standards, their implementation, and quality management) and that it is not very appropriate to determine, *a priori*, any fields to be given special weight.
- -the importance and urgency of the government actions in each cell of the matrix should be suggested as the outcome of the Study.

(matrix)

Fields / Dimensions	Development of Standards	Implementation of Standards			Quality Management
		Certification and Accreditation	Ind. Metrology and Calibration	Testing and Inspection	
Regulatory systems					
Systems/Procedures					
Organizations					
Human resources					
Facilities/equipment					
Others					

(2) Despite the general view expressed above, the Viet Nam side stated that particular attention should be given to such dimensions

as the development of regulatory systems, development of human resources, and development of facilities/equipment, because it is in these dimensions that there remain many tasks yet to be achieved. The Viet Nam side further stated that the following dimensions in the corresponding fields as shown below should be studied with depth, in view of their intrinsic critical importance:

In depth study should be made with respect to:	In
-development of regulatory systems	all fields
-development of human resources	certification and accreditation
-development of facilities and equipment	industrial metrology and calibration, and testing

(3) Both sides agreed that it is difficult to predetermine the depth with which individual policy recommendations will be made, and that both sides will try to find reasonable and constructive solutions to these matters in the course of the Study.

2 On sectors to be covered under the Study

(1) Both sides agreed that the Study will cover the manufacturing sector.

(2) The Viet Nam side stated that it would give priorities to the following subsectors (by order of priority), if any industrial subsectors should be specified for in-depth coverage in the Study:

-machinery subsector(with special emphasis on industrial processing machines);
-electric equipment and components subsector;
-electronic equipment and components subsector;
-metalworking subsector;
-textile industry;
-construction materials;
-petroleum industry products.

The Japanese side stated that it will determine the subsector(s) for in-depth coverage, considering the availability of human and financial resources.

3 On Administrative Arrangements

(1) The Viet Nam side agreed to provide the Japanese study team with necessary assistance (*) when the latter needs to make field visits to factories in the course of the Study.

(*)such as provision of information, making necessary arrangements, sending its staff members to accompany the team, etc.

(2) The Viet Nam side stated that the Steering Committee, stipulated in VI 4 of the Scope of Work, will be composed of the representatives of authorities concerned of Viet Nam, such as the following:

- Ministry of Science, Technology and Environment
- Ministry of Planning and Investment
- Ministry of Industry

(3) The Japanese side requested the Viet Nam the following materials, and the latter stated that they will be made available to the Japanese side through the JICA office in Viet Nam, if not during the stay of the Team in Viet Nam:

- those laws, regulations, and government orders associated with standardization and quality control, currently available in the English language;
- a directory of business establishments of Viet Nam.

(4) The Viet Nam side stated that during the course of the Study, the Japanese study team will be furnished with a suitable office space.

4 Others

(1) Both sides agreed that the Study is a joint project, the success of which depends on close collaborative work between the members and organizations concerned of both Viet Nam and Japan.

(2) The Viet Nam side expressed its wish that the Study will serve as a basis on which further Viet Nam-Japan cooperation in the field of industrial standardization and quality control will be developed./

QUESTIONNAIRE

JICA wishes to collect the following information, in order to have better understanding on the present status and major issues of standardization and quality management in Viet Nam and thus, to better prepare itself for the upcoming discussions with the Viet Nam side. JICA will highly appreciate it if the Viet Nam side will make the requested information available by 15th of July, 1996. Cooperation on the Viet Nam in this regard will highly be appreciated.

General

1 laws, regulations, and government orders associated with standardization and quality control. (the name, the objectives, schemes, responsible government entities) (Act on Metrology, Act on Product Quality)

2 Reports of projects related to the Standardization, supported by other countries and/or International organizations(UNDP, UNIDO, CSAS, IDRC)

3 Brochures and Organizational Charts (number of staff in each section/department) of VSI, VMI, VQI, VFA, and other organizations related to industrial standardization and quality management.

4 Outline of training course related to industrial standardization and quality management (number of training courses, number of trainers, curriculum, etc.)

5 Outline of Scientific and industrial R&D institutes, such as the Institute of Industrial Chemistry, the Institute of Textile Research, the Research Institute of Technology for Machinery, the Institute of Machine Tools Instruments, the United Pharmaceutical Centre, etc. Information requested includes the location of the institute, functions and activities, number of technical staff, achevement of the recent years, etc.

Industrial Standardization

5 Present situation of standards (years of establishment, enforcement

6 Outline of the processes of development and revision of standards

7 Public relations activities for the promotion of standardization (publication of standards, books, other methods for promoting application of standards)

8 Present status of industry related to ISO 9000 (number of enterprises, seminars)

9 Procedures for the certification of the standard conformity, item to be tested (for a sample product), and process of follow-up

10 Number of enterprises awarded with certification by product.

Metrology and Testing

11 Name of the institution responsible for each of the metrological standards by the quantity and by the level of standards (primary, secondary, working, verification standards) and their maintenance regulations.

12 Outline of the institutions extending calibration and testing services; name, location, number of technical staff by field and years in the service, main testting equipment (name, number, production date, specifications), etc.

13 Number of calibration and testing services each of the institutions in the 12 above extended to industries and other clients by commodity, by test item and by year for the last 5 years.

14 Rules and regulations as to the method and the cycle of calibrating the testing equipment of the istitutions referred to in the 12 above.

15 Number of calibration works referred to in the 14 above actually done in the last 5 years.

16 Certifying organization
name, number, implementation scheme, number of certified companies, number of inspection, follow-up,

Quality Management

17 Organization of quality management
1) name, number, budget, operation records in the last 5 years

2) Quality control activities (number of enterprises, implementation scheme, etc.)

1. LAW, REGULATION AND GOVERNMENT ORDERS ASSOCIATED WITH STANDARDIZATION AND QUALITY CONTROL

1.1. QUALITY - STANDARDS

TITLE	DATE (YEAR OF PUB)	ENFORCEMENT AGENCY	CONTACT POINT	LEGISTRATION NUMBER
(1)	(2)	(3)	(4)	(5)
GENERAL REGULATION: **Ordinance.** Order of Chairman of State Council announcing ordinance on commodity quality	02/01/1991	Chairman of State Council	STAMEQ Tel: 8256375 Fax : 8267417	49 - LCT
Decree. Promulgating regulation on implementation of ordinance on commodity quality	19/10/1991	Council of ministers		327 - HĐBT
Decree. Directorate for Standards and Quality 's tasts, function and right	19/10/1991	Prime Minister		22 - HĐBT
Decree. Regulation on assigning responsibility of state management in commodity quality	08/12/1995	Prime Minister		86 - CP

(1)	(2)	(3)	(4)	(5)
Circular Guiding the implementation of Decree No 86/CP dated 8 December 1995 of Government relating to assign responsibility of State management in commodity quality	21/03/1996	Ministry of Science, Technology and Environment		560 - TT/KCM
Inter - Ministerial Circular Directive on implementation 86 - CP, 8th, December 1995	12/06/1996	Ministry of Science, Technology and Environment Transport and Communication		1192 - KCM/GTVT
Inter - Ministerial Circular Directive appointing responsibility of Governmental management on industrial explosive	21/05/1996	Ministry of Science, Technology and Environment Industry		1092 - KCM/CN
Inter - Ministerial Circular Directive on implementation 86 - CP, 8th, December 1995	24/05/1996	Ministry of Science, Technology and Environment Fisheries		02 - TT/LB
Inter - Ministerial Circular Directive on implementation 86 - CP, 8th, December 1995	01/07/1996	Ministry of Science, Technology and Environment Health		07 - TT/LB
Directive. Administrative management of metrology and commodity - quality in market	05/09/1995	Prime Minister		540 - TTg
Decree. Issuing the list of commodities for implementing the agreement on common effective preferential tariffs (CEPT) by ASEAN members for the year 1996	18/12/1995	Prime Minister		91 - CP

(1)	(2)	(3)	(4)	(5)
PROMULGATION AND STANDARDS APPLICATION: **Decision.** Issuing provisional regulation on organization and operation of technical sub-committee for standards	13/10/1993	STAMEQ		246 - TĐC/QĐ
Decision. Issuing regulation on establishment and approving development project of TCVN standards	13/10/1993	STAMEQ		247 - TĐC/QĐ
Decision. Issuing regulation on formulation of Vietnamese standards	13/10/1993	STAMEQ		248 - TĐC/QĐ
Decision. Issuing regulation on formulation of standards equivalent to international standards	13/10/1993	STAMEQ		249 - TĐC/QĐ
Decision. Canceling TCVN's effect	31/12/1991	Ministry of Science, Technology and Environment		890 - QĐ
Decision. Announcement of 41 articles in 23 TCVN of Vietnamese mandatory standards	05/05/1991	Ministry of Science, Technology and Environment		310 - QĐ
Decision. Announcement of 01 Vietnamese mandatory standards (TCVN 1 - 1991)	04/09/1991	Ministry of Science, Technology and Environment		547 - QĐ
Decision. Announcement of 02 Vietnamese mandatory standards (TCVN 4954 - 1991; TCVN 5510 - 1991)	12/12/1991	Ministry of Science, Technology and Environment		835 - QĐ

(1)	(2)	(3)	(4)	(5)
Decision. Announcement of 03 Vietnamese mandatory standards (TCVN 5741 - 1993; TCVN 5742 - 1993; TCVN 6024 - 1995)	16/11/1995	STAMEQ		1963 - TĐC/QĐ
COMMODITIES QUALITY REGISTRATION: INTER - MINISTERIAL CIRCULAR Regulation on administrative management of goods label and advertisement	29/06/1991	Ministry of Science, Technology and Environment Culture and Information		1191 - TT/LB
Decision. Provisional regulation on the labeling of packed - food stuff.	20/02/1995	STAMEQ		23 - TĐC/QĐ
Decision. Issuing the list of commodities under compulsory registration of quality	24/02/1992	Ministry of Science, Technology and Environment		119 - QĐ
Decision. Regulation on registration of commodity - quality	02/03/1994	STAMEQ		55 - TĐC/QĐ
Decision. Promulgating the list of guidance on norms and quality-level applying to quality-registration	25/03/1992	STAMEQ		37 - TĐC/QĐ
Decision. Adding lubricant on the list of commodities under compulsory registration of quality	10/08/1994	STAMEQ		565 - TĐC/QĐ

(1)	(2)	(3)	(4)	(5)
ENGINE LUBRICANT QUALITY MANAGEMENT: **Inter - Ministerial Circular.** Quality management of motor - lubricant oils	19/01/1995	Ministries of Trade - Science, Technology and Environment		48 - TT/LB
CERTIFICATION OF COMMODITIES IN CONFORMANCE WITH TCVN STANDARDS: **Decision.** Promulgating regulation on accreditation and certification of quality	25/08/1995	STAMEQ		1479 - TĐC/QĐ
Decision. Establishing the Vietnam technical commodities on Code	29/03/1995	STAMEQ		77 - TĐC/QĐ
Decision. Promulgating regulation on content and procedure of conformity registration	23/03/1992	STAMEQ		27 - TĐC/QĐ
LABORATORY ACCREDITATION: **Decision.** Established quality accreditation bureau	10/11/1995	Ministry of Science, Technology and Environment		1926-QĐ/TCCBKH
Decision. Promulgating regulation on accreditation of testing - lab	23/12/1991	Ministry of Science, Technology and Environment		873 - QĐ
Decision. Promulgating regulation on content and procedure on accreditation of testing lab	17/01/1992	STAMEQ		10 - TĐC/QĐ
Decision. Promulgating regulation on general requirements on accredited testing lab	23/03/1992	STAMEQ		28 - TĐC/QĐ

(1)	(2)	(3)	(4)	(5)
Decision. Promulgating regulation on terminology and basic concepts used for testing - lab Accreditation	23/03/1992	STAMEQ		29 - TĐC/QĐ
Decision. Promulgating regulation on classification and code-bar on testing sectors	23/03/1992	STAMEQ		30 - TĐC/QĐ
Decision. Promulgating regulation on seal and the form of testing results of accredited testing - lab	23/03/1992	STAMEQ		31 - TĐC/QĐ
Decision. Promulgating the guide on setting up and use of quality manual for standard laboratory	23/03/1992	STAMEQ		32 - TĐC/QĐ
Decision. Regulation on testation report of accredited testing - lab	23/03/1992	STAMEQ		33 - TĐC/QĐ
IMPORT - EXPORT COMMODITIES INSPECTION: **Decision.** Regulation on state inspection on quality of imports and exports	10/06/1992	Ministry of Science, Technology and Environment		397 - QĐ
Decision. Issuing the list of imports and exports under state quality inspection	10/06/1992	Ministry of Science, Technology and Environment		398 - QĐ

(1)	(2)	(3)	(4)	(5)
Decision. Promulgating import-export commodities classification under the state inspection of quality	27/09/1995	Ministry of Science, Technology and Environment		514 - QĐ
Decision. Promulgating regulation of import - export commodities	07/11/1994	Ministry of Trade		1343 - TM/PC
Decision. Promulgating regulation on authorization of State-Quality inspection of the imports and exports	11/06/1992	STAMEQ		88 - TĐC/QĐ
Decision. Promulgating regulation on State-specialized inspection bodies in commodity quality	10/06/1992	Ministry of Science, Technology and Environment		400 - QĐ
Decision. Establishment of inspection bodies of Directorate for Standard and Quality	21/07/1992	STAMEQ		470 - TCCB
Decision. Temporary regulation on bilateral relation STAMEQ together with technology center	19/02/1994	STAMEQ		50- QĐ
PENALIZING ACTIVITIES WHICH BREAK ORDINANCE ON COMMODITY QUALITY: **Directive.** Urgent measurements putting in good order the administrative management on export- import services and commodity circulation in domestic market	06/10/1992	Prime Minister		001 - TTg

(1)	(2)	(3)	(4)	(5)
Directive. Regulation on inspection, dealing with producing, buying and selling fake commodities	25/04/1991	Council of minister		140 - HĐBT
Decision. Regulation on competence and procedure for sanctioning violations of law in commodity quality	10/06/1992	Ministry of Science, Technology and Environment		399 - QĐ
Inter - Ministerial Circular Regulation on administrative management of goods label and advertisement	29/06/1991	Ministries of Culture and Information - Science, Technology and Environment		1191 - TAT/ LB

1.2. MEASUREMENT

TITLE	DATE (YEAR OF PUB)	ENFORCEMENT AGENCY	CONTACT POINT	LEGISLATION NUMBER
(1)	(2)	(3)	(4)	(5)
Ordinance. Order of Chairman of State Council announcing ordinance on measurement	16/07/1990	Chairman of State Council	STAMEQ Tel: 8256375 Fax: 8267417	43- LCT/HĐNN8
Decree. Promulgating regulation on implementation of ordinance on metrology	13/04/1991	Council of ministries		115 - HĐBT
Decision. Promulgating regulation on management of metrological standards of measurement unit.	01/07/1991	Ministry of Science, Technology and Environment		381 - QĐ
Decision. Classification list for State - compulsory vertification for measuring instruments	20/07/1991	STAMEQ		103 - TĐC/QĐ
Decision. Promulgating regulation on accrediting the vertification ability of state metrological institutions at all - levels	20/07/1991	STAMEQ		104 - TĐC/QĐ
Decision. Promulgating regulation on authorization of mandatory vertification for measuring instruments.	20/07/1991	STAMEQ		105 - TĐC/QĐ

(1)	(2)	(3)	(4)	(5)
Decision. Promulgating regulation or the seal of vertification for state bodies of metrology and other entities which received the authorization of vertification	20/07/1991	STAMEQ		106 - TĐC/QĐ
Decision. Promulgating regulation on certification of metrological standards	20/07/1991	STAMEQ		109 - TĐC/QĐ
Decision. Promulgating regulation on form of certification of state bodies of metrology and other bases which received the authorization of state vertification.	20/07/1991	STAMEQ		107 - TĐC/QĐ
Decision. Approving the metrological standards of measuring instruments.	15/05/1995	STAMEQ		133 - TĐC/QĐ
Decision. Promulgating regulation on registration of manufacturing, repair and approving of pattern of measuring instruments.	29/09/1991	STAMEQ		290 - TĐC/QĐ
Decision. Promulgating regulation on import - administration of measuring instruments.	04/06/1993	STAMEQ		117 - TĐC/QĐ
Decision. Promulgating regulation on state specialized inspection bodies in metrology .	01/07/1991	Ministry of Science, Technology and Environment		380 - QĐ
Directive. Administrative operations on measurement and commodity - quality circulated in market.	05/09/1995	Prime Minister		540 - TTg

2. Report of Projects related to standardization supported by other countries

1. VIE/76/013 (1978) (P.125) Strengthening of Standards, Metrology and Testing facilities (in detail referring to Directory of UNDP - Assisted project in Vietnam P. 125)

2. CP/VIE/81/006 (1981) (P.132) National Network of Standardization Metrology Quality Testing and Calibration services - phase I (P. 132)

3. DP/VIE/83/001 (1986-1987) (P.136) National Metrology Centre (750.000 USD)

4. DP/VIE/85/009 198 (P.142) Repair and Maintenance of Testing and measuring instruments.

5. DP/VIE/86/037 (P.164) 198 Assistance to the National Network of Standardization, Metrology Quality Testing and Calibration services - phase II

6. SAREC Programme (78-80) Swedish Technical Assistance in Metrology (400.000 USD)

7. ODA Project from France (1994) Strengthening Food Testing Laboratory (1.500.000 USD)

8. EU Project (1996-1988) Standardization and Quality Assurance (3.500.000 ECU's) (in processing)

4. OUTLINE OF MAIN TRAINING COURSES RELATED TO INDUSTRIAL STANDARDIZATION AND QUALITY MANAGEMENT CONDUCTED AT THE TRAINING CENTER FROM 1994.

I. Training courses.

No	Name of training course	Time	No. of partici pants	Conducted by
1.	Quality management at YOKOGAWA -Japan	12/93	86	YOKOGAWA's speakers
2.	Awareness and implementation ISO 9000	1/94	84	David burns- England
3.	Laboratory accreditation	22/1/ 94	39	John Summerfield
4.	Secretary of technical committee	5/94	45	Trainers of STAMEQ
5.	Certification and laboratory accreditation	5/94	30	Mr. Tronel- French
6.	Guide for certification a quality system	6/94	41	Mr. Imbert - French
7.	Auditing a quality system	6/94	42	Mr. Imbert- French
8.	Total quality management	7/94	62	Alain Ouan- French
9.	Food quality management	10/94	66	Mss. Sylve Rolland- French
10.	Assessor's training	11/94	40	John Summerfield
11.	Basic of standardization, quality and metrology	2/95	55	Trainers of STAMEQ
12..	Basic on Food quality management	3/95	33	Trainers of STAMEQ
13.	Awareness and implementation ISO 9000	4/95	65	Trainers of STAMEQ
14.	Internal Auditor's training	5/95	18	Trainers of Training Center
15.	Basis Quality Management for lecturers of commercial College	6/95	20	Trainers of Training Center
16.	Awareness on ISO 9000 for leaders of enterprises	6/96	66	Trainers of Training Center
17.	Standardization and quality management for Hanoi beer Company	7/95	18	Trainers ofTraining Center
18.	Article numbering and bar cording	7/95	35	EAN Vietnam
19.	Awareness ISO 9000 for directors of companies	8/95	31	Alain Ouan- French

20.	Company standardization a means to increase quality and productivity	7/95	19	PTB Germany
21.	Food quality control	8/95	37	Dr. M.M. Gatchalian Philippine
22.	Training course on Quality management for Vandien battery company	8/95		Trainers ofTraining Center
23.	Awareness and implementation ISO 9000	8/95	40	Trainers of STAMEQ
24.	Q base	10/95	61	Trainers of STAMEQ
25.	ISO 9000 Lead Assessor's training	12/95	20	P.E BATALAS and SIRIM
26.	Base of standardization	2/96	36	Trainers of STAMEQ
27.	Raising standards in environmental management	2/96	23	BVQI
28.	Establishing and implementing standards for Army Institute	1/96	40	Trainers ofTraining Center
29.	Internal Audit	3/96	35	APAVE-ASCERT
30.	ISO 9000 at Concrete company	4/96	40	Trainers of STAMEQ
31.	TQM	7/96	49	Trainers of STAMEQ

II. Number of trainers:

At present the Training center itself has 4 trainers and there are about 50 external trainers coming from other organizations and institutions.

III. Curriculum:

We have been establishing a training program which is available to both manufacturing and service sectors.

Namely: The modules of training courses on:

- ISO9000 Quality Assurance System: Awareness, Documentation, Internal Audit.
- ISO guide 25 Laboratory Accreditation System
- TQM - Total quality management
- Q-Base Quality System for Small and medium Enterprises
- GMP (Good Manufacturing Practice)

5. OUTLINE OF SCIENTIFIC AND INDUSTRIAL R & D INSTITUTES

Name of institutions	Address	Function (main activities)	Number of technical staff	Achievement in recent years
01	02	03	04	05
Institute for machinery and industrial instrument (IMI)	Head office : 34 Lang Ha Str., Dong Da District - Hanoi Tel : 84 - 4 - 8344565 Fax : 84 - 4 - 8344975	Design, development and prototyping of machines and industrial instruments. Consultancy, Technology transfer & other related scientific & technological services	Doctor & Master : 08 Engineers & Bachelors of science or post - graduated staffs : 170	• Design, development and manufacturing of separate and Intergrated equipment to serve various sectors of industry and environmental protection. • Development, modernizing, and upgrading precision of industrial machines by application of PLC, CNC systems. • Design, manufacturing and installation of electronic weighing and closing units in cooperation with foreign companies • Development and manufacturing of special tools, would and dries with high precision and complicated shapes • Consultancy on equipment investment and technology transfer • Providing post graduate training in the field of CAD/CAM technology in cooperation with other training institution.
Institute for industrial chemistry	Head office 1 : 2 Pham Ngu Lao Str. Hanoi Tel : 84 - 4 - 8253930 Fax : 84 - 4 - 8265633 Head office 2 : Km 10,5 Hanoi Sontay road Townlet Caudien	• Research & development the application of chemical technologies. Experimental & pilot production • Consultation, technological transfer and Information service • Special post-graduated training staff education • Technic-Scientific Co-operation	Professor, Doctors, Master : 26 Engineer, Bachelors of Science or Post-graduated staffs : 100 Technicians : 50 Technical workers : 40 others : 104 Total : 320	Carry out various kind of researching works and develop application of chemical technologies.
Institute of Textile Research	Head Office :458 Minh Khai Str. Hanoi Branch office : 345/128A Tran Hung Dao Str. District 1 Ho Chi Minh City	1. Information research, prognosis, and providing of scientific thesis for the oriented strategy and technology policies of the textile industry in Vietnam	Professors, Doctors, Masters : 21 Engineers : 48 Technicians : 56 Total : 125	In the last five years there were five national researches being done by Institute

		Information research, prognosis and scientific thesis provide for the oriented strategy making and technology policy of the textile industry of Vietnam 2. Cooperative researches with other branches, creation of the national material resources in order to meet the requests of materials and to be active in other production. 3. Researching in new technology and equipment changing strategy, creation new products with high competitive possibility in order to meet the request of the exported market. 4. Developing of the reference laboratory for quality control. 5. New technology implementation research and transfer the researched results into the production A strict coordination with other institutions in order to meet the requirements of modernization and standardization. 6. Strengthening the education and training system for providing the best qualified expert team. 7. Enhancing the scientific - technology services 8. Strengthening of the relation public and information		
Vietnam pharmaceutical corporation	Head office : 138B Giang Vo Str. Hano Tel : 84 4 8 443515 Fax : 84 4 8443665 Branch office : 178 Dien Bien Phu Str. District 3 Ho Chi Minh City	• Pharmaceuticals • Traditional medicine • Medicinal herbe and aminal • Oile and other natural products • Chemico-pharmaceuticals • Cosmetics and toiletries • Pharmaceutical packaging	Staffs : 4536	

6. Present situation of standards

The Standards application is now voluntary in Vietnam

- At the time being mandatory standards are applicating only in the field concerning human health, safety and environment protection.
- One new policy in development of standards is adopt/adapt of ISO standards in accordance with ISO Guide 3 and 21.
- Standards development has been carried out through technical committees in accordance with ISO Directive No. 1.
- So far there are 53 technical committees and 7 sub-committees in Vietnam
- In the last five years (1991 - 1995) 1.047 TCVN have been published (in 1991 : 375 TCVN; 1992 : 75 TCVN; in 1993 : 219 TCVN; in 1994 : 118 TCVN and in 1995 : 260 TCVN).
- The budget for this activities is 1927 million VND for this period

The number of Vietnam Standards established up to now (+5000) according to International classification of Standard (ICS)

Code	Field	Figure
01	Generalities. Terminology. Standardization. Documentation Sociology. Services. Company organization and management.	360
03	Administration, Transport	52
07	Mathematics. Natural sciences	38
11	Health care technology	114
13	Environment and health protection. Safety	320
17	Metrology and measurement. Physical phenomena	276
19	Testing	21
21	Mechanical systems and components for general use	471
23	Fluid systems and component for general use	262
25	Manufacturing engineering	520
27	Energy and heat transfer engineering	45
29	Electrical engineering	216
31	Electronics	72
35	Information technology. Office equipment	2
37	Image technology	8
39	Precision mechanics. Jewelry	1
43	Road vehicle engineering	89
45	Railway engineering	3
47	Shipbuilding and marine structures	119
53	Materials handing equipment	20
55	Packaging and distribution of goods	32
59	Textile and leather technology	147
61	Clothing industry	26
65	Agriculture	267
67	Food technology	428
71	Chemical technology	196
73	Mining and minerals	126

75	Petroleum and related technologies	181
77	Metallurgy	254
79	Wood technology	74
81	Glass and ceramics industries	13
83	Rubber and plastics industries	61
85	Paper technology	34
87	Paint and colour industries	28
91	Construction materials and building	205
93	Civil engineering	11
97	Housekeeping. Entertainment. Sports	29

7. Processes of development and revision of standards

7.1. Standards development processes :

- Each Ministry/Branch/Institution has to submit new Item proposal to STAMEQ every year
- According to the state management requirements MOSTE gives the request of the standards to be developed to STAMEQ
- STAMEQ gives standards development plan to VSC (Vietnam Standard Center)
- After checking the final drafting standards VSC will send them to STAMEQ for examination, and STAMEQ will submit them to MOSTE for confirmation signature.

Main functions and tasks of VSC

- Studying disciplines of standardization and its related matters
- Developing national standards of Vietnam (TCVN) and taking part in development of international and regional standards. Holding TCVN technical committees secretariat. Assisting ministries, companies and enterprises in their standardization activities.
- Printing and publishing national standards of Vietnam (TCVN) and other standardization documents
- Taking part in the activities of international organizations in which Vietnam is a member body (e.g. ISO, CAC, EAN international)
- Taking part in the activities of promotion of national standards (standard propaganda, product certification).

7.2. The revision period of national standards is five year.

8. Public relations activities for the promotion of standardization

- STAMEQ organizes workshops for giving guidance in implementing of new standards, which are important/compulsory for industries and other services.
- New published standards are announced regularly in the quarterly published "standards-Metrology - Quality News" and in monthly published "Official Gazette"
- Lists of new published National Standards and International Standards are also sent regularly to different industries/ industrial branch, etc.

9. Status of industry related to ISO 9000

- Number of certified enterprises 0
- Number of enterprises carry out the development and implementation of quality systems 15
- Number of enterprises planned to be certified by the end of 1996 4

10. Procedures for the certification of the standard conformity 12

The Regulation on Accreditation and Certification No. 1479 TDC/QD of 25/08/1995
There are 12 procedures for the product quality certification developed in accordance with this Regulation

11. Number of enterprises awarded with certification by product 100

12. INSTITUTION BEING RESPONSIBLE FOR METROLOGY AND THEIR STANDARDS

Institutions	Parameter	Unit	Standards	Accuracy
VMC	**1. Mechanical**			
-	1.1 Length	m	INKO interferometer absolutely measure up to 100mm	10^{-6}
-	1.2 Angle	rad	Standard set of angle	0,5''
-	1.3 Mass	kg	Standard weights 1 kg, E1	5.10^{-7}
-	1.4 Volume	l	Standard pipettes 2ml ÷ 50l	5.10^{-4}
-	1.5 Density	g/cm^3	Standard density bottles (650÷2000) kg/cm^3	2.10^{-4}
-	1.6 Force	N	Force transducers (0÷200)kN	3.10^{-4}
-	1.7 Hardness	HRC	Standard hardness measuring machine HNG - 250	0,3 HRC
-	1.8 Pressure	Pa	Baromet piston MPA-15	5Pa
-	1.9 Viscosity	mm^2/s	Unnelohde viscosity meter k=0,05 ÷10	10^{-3}
-	1.10 flow	m^3/s	Flowmeter used for water Φ50(4 ÷ 300)m^3/s	2.10^{-3}
VMC	**2. Electrical**			
-	2.1 DC voltage	V	Standard battery set of transvol	2.10^{-6}
-	2.2 DC resistance	Ω	Standard resistors set (1 ÷ 10^{-6})Ω	2.10^{-4}
-	2.3 Capacitance	F	Standard DC capacitance 100 pF ÷1000 pF	2.10^{-5}
-	2.4 LF current	H	Standard LF current	10^{-4}
-	2.5 Power, power density	W, Wh	- U up to 1000V I up to 500 A - Transfer I(5÷800)5A	10^{-3} 2.10^{-3}
-	2.6 High voltage	V	Volmet D7075; f≤10kHz U=1μV ÷ 1000V	5.10^{-5}÷5.10^{-3}
-	2.7 RF power	W	Power measurement machine NRS BN2414; f=(0-150GHz (3-300)mV	$1,5.10^{-2}$ (2 ÷3)MHz
-	2.8 Level measurement	dB	- Level measurement machinery D2073 - Level creating machinery W2072	0,1 dB 0,1 dB
-	2.9 Attenuation	dB	Set of standard attenuation AI-606N	0,5
VMC	**3, Time and Frequency**			
-	3.1 Time	s	Rubidium atomic standards XSRM, 5MHz	10ms 5.10^{-11}
-	3.2 Frequency	Hz	- Rubidium frequency atomic standards 81 -69 - Received machine loran 100kHz	5.10^{-11}/ 10days 5.10^{-11}/ 10days

OCM	**4. optics**			
-	4.1 Luminous intensity	Cd	Standard of luminous intensity SIS 107 - 500 set of standard lamp	2.10^{-2}
-	4.2 Spetral energy density	W/Sr. m^2	Machine MCHT-1200 TRY-1100-2350	$1,5.10^{-2}$
-	4.3 Energy irradiance	W/m^2	LARM3-YF-300 OSIEM-1	2.10^{-2}
-	4.4 Luminous flux	lm	SIP	2.10^{-2}
-	4.5 Colour temperature	K	CUC, M6, KU3	0,15
VMC	**5. Temperature**	K	- Freezing point of tin - Temperature lamp GEC (800 ÷2000) ^0C - Resistance thermometers standards Pt25(-186-630)^0C	0,005K (2÷4)K 0,003K
VNEI	**6. Ionizing radiation**			
-	6.1 Activity radiation	Gy	α & β ray activity radiation measurement means	5%
-	6.2 Ionizing radiation	Bq	- Ionizing radiation measurement C-137 - X ray radiation measurement & average Emax=150KeV	5.10^{-2}
VTV	**7. Sound**			
-	7.1 Sound pressure level	dB	- Supplied power of sound 205 - Supplied standards 4204,4205 - Measurement means of sound power 7507	2 dB 2 dB 1dB
-	7.2 Sound speech	dB	Standard machine of acceleration	

VMC. : Vietnam National Metrology Center
OCM. : Optical Center for Metrology
NSTI. : Vietnam Nuclear Energy Institute
VTV. : Vietnam Television

13. Outline of institutions extending calibration and testing services :

13.1. QUATEST I : Which belong to STAMEQ (see Annex 1)
13.2. QUATEST II : - ditto - (see Annex 2)
13.3. QUATEST III : - ditto - (see Annex 3)
13.4. VINACONTROL, which is belong to Ministry of Trade. VINACONTROL is a testing service company founded in 1957. It's Head office is located in Hanoi, 54 Tran Nhan Tong Str., Tel : 84 - 4 - 8253840. Fax : 84 - 4 - 8253844

VINACONTROL has a number of 800 staffs and has the responsibility for quality testing service of export products.

13.5. Department for testing of commodities is a testing and calibration institution, which is belong to the Ministry of Trade, and has the responsibility to provide testing services of domestic products. Address : 76 Nguyen Truong To Str. - Hanoi
Tel : 84 - 4 - 8293165
Number of staffs : 80

13.6. NAFIQACEN is belong to Fishery Ministry, it's founded in 1994, NAFIQACEN has the responsibility for testing of exported seafood.
Number of staffs : 75
Address : 10 Nguyen Cong Hoan Str. - Hanoi
Tel : 84 - 4 - 8354966. Fax : 84 - 4 - 8326702

14 & 16. Number of calibration and testing services conducting by STAMEQ

Year/Activities	1991	1992	1993	1994	1995	Total number for 5 years
Calibration	11.686	15.593	35.500	70.705	113.246	246.730
Testing	8924	12743	20.050	39.900	50.957	132.592

15. Rules and regulations as to the method and the cycle of calibrating the testing equipment of the institutions referred to in the 12 above.

So far there is no rules or regulation on the method and the cycle of calibrating the testing equipment.

There is only the Decision No. 103 TDC/QD of 20/07/1991 publishing the list of measurement instrument to be verified with indicated verification cycle.

17. Certifying organization

Name : QUACERT
Implementation scheme : attached (annex 4)
Number of certified companies : 0

18.1. ORGANIZATION OF QUALITY MANAGEMENT

Country : VIETNAM

GATT ENQUIRY POINT	ADDRESS	TEL/ FAX
Central Contact Point	Ministry of Science Technology and Environment (MOSTE) **Directorate for Standards and Quality (STAMEQ)** 70 Tran Hung Dao Str. - Hanoi VIETNAM	Tel : 84 - 4 - 8256375 Fax: 84 - 4 - 8267418
OTHER REGULATORY BODIES	**ADDRESS**	**TEL/FAX**
Cosmetics Foods (including sanitary, phytosanitory)	Ministry of Health **Department of Hygiene Epidemic Prevention** 138 A Giang Vo Str. - Hanoi VIETNAM	Tel : 84 - 4 - 8460347 Fax: 84 - 4 - 8460507
Drugs, pharmacy	**Department of Pharmacy** 138 A Giang Vo Str. - Hanoi VIETNAM	Tel : 84 - 4 - 8230794 Fax: 84 - 4 - 8460701
Medical devices	**Medical Equipment Department** 138 A Giang Vo Str. - Hanoi VIETNAM	Tel : 84 - 4 - 8230795 Fax: 84 - 4 - 8460843
Industrial explosive	Ministry of Industry **Department for Technological and Product Quality Management** 54 Hai Ba Trung Str. - Hanoi VIETNAM	Tel : 84 - 4 - 8258311 Fax: 84 - 4 - 8265303
Pesticides	Ministry of Agriculture and Rural Development **Department of Science Technology and Product Quality** 02 Ngoc Ha Str. - Hanoi - VIETNAM **Plant Protection Department** 189 Tay Son Str. - Hanoi -VIETNAM	Tel : 84 - 4 - 8232751 Fax : 84 - 4 - 8436818 Tel : 84 - 4 - 8518196 Fax: 84 - 4 - 8521719

OTHER REGULATORY BODIES	ADDRESS	TEL/FAX
Biological Products Fertilizer Feeds and animal Plant seeds and animal breeds Veterinarian drugs	**Department of Agriculture and Forestry Expansion** 01 Bach Thao Str. - Hanoi-VIETNAM **Veterinary Department** Phuong Mai Str. - Hanoi - VIETNAM	Tel : 84 - 4 - 8236403 Fax: 84 - 4 - 8433811 Tel : 84 - 4 - 8696788 Fax: 84 - 4 - 8691311
Aquatic Plants and animals Aquatic breeds Feeds for aquatic culture Fishing facilities devices	**Ministry of Fisheries** **Department of Science and Technology** 57 Ngoc Khanh Str. - Hanoi-VIETNAM **Department of Aquatic Resource Protection** 57 Ngoc Khanh Str.- Hanoi -VIETNAM	Tel : 84 - 4 - 8325630 Fax: 84 - 4 - 8326702 Tel : 84 - 4 - 835175[illegible] Fax: 84 - 4 - 8351759
Transport equipments Lifting equipments Steam boiler and pressure tank	**Ministry of Transport and Communication** **Department of Science and Technology** 80 Tran Hung Dao Str. - Hanoi VIETNAM **Vietnam Register of Shipping** 16 Tran Hung Dao Str. - Hai Phong VIETNAM (Branch in Hanoi : 01 Kim Nguu - Hanoi - VIETNAM) **Transport Construction Quality Control and Management Bureau** 80 Tran Hung Dao Str. - Hanoi VIETNAM	Tel : 84 - 4- 8254070 Fax: 84 - 4 - 8267366 Tel: 84 - 31 - 842869 Fax: 84 - 31 - 842275 Tel: 84 - 4 - 8219504 Tel : 84 - 4 - 8261405 Fax: 84 - 4 - 8267366
Building construction materials	**Ministry of Construction** **Department of Science and Technology** 37 Le Dai Hanh - Hanoi - VIETNAM	Tel : 84 - 4 - 8268271 Fax: 84 - 4 - 8216555
State- control of sale commodities	**Ministry of Trade** **Department of Science and Technology** 91 Dinh Tien Hoang - Hanoi VIETNAM **Market Control Department** 91 Dinh Tien Hoang- Hanoi -VIETNAM	Tel : 84 - 4 - 8255034 Fax: 84 - 4 - 8264696 Tel : 84 - 4 - 8255479 Fax: 84 - 4 - 8264696

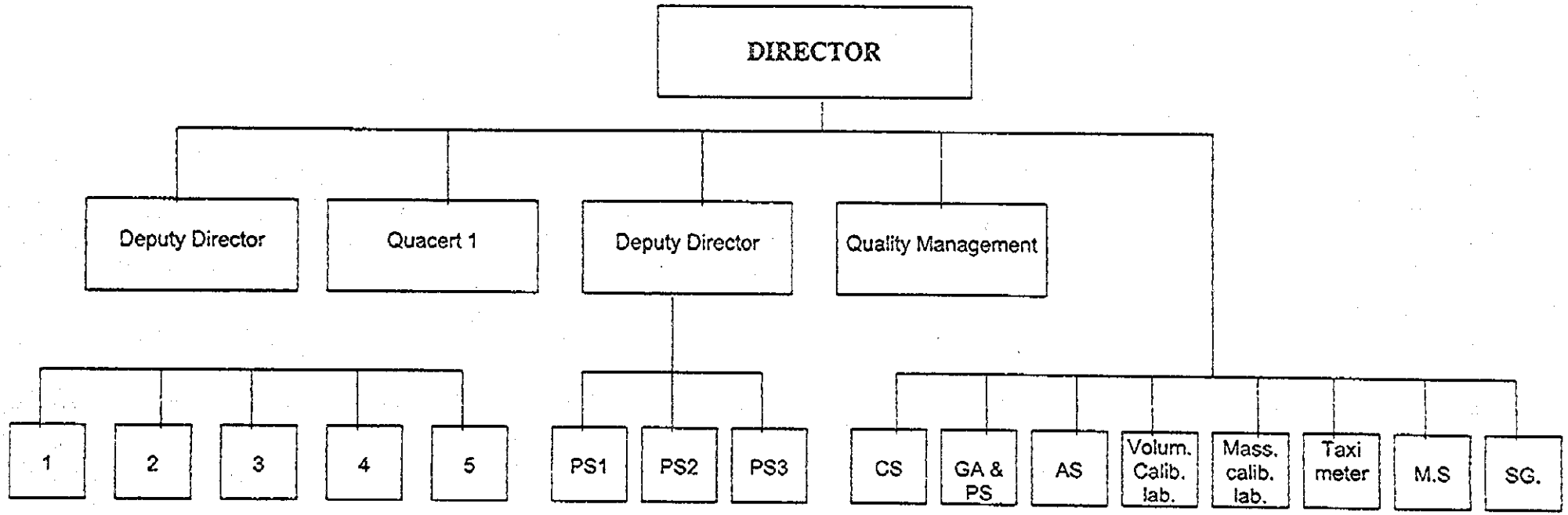
18.2. Quality control activities of STAMEQ

- Annual publishing the list of export - import and domestic product to be inspected by state in September.
- Cooperation with other Ministries in identifying the parameters to be inspected and the agencies to carry out inspection
- Annual publishing the list of products to be registered
- Organizing product quality registration

Sector to be covered under the study

- Machinery subsector
- Electric equipment and components subsector
- Electronic equipment and components subsector
- Metal working subsector
- Textile industry
- Services sector
- Construction materials
- Petroleum industry products.

ANNEX 1 : ORGANIZATION STRUCTURE OF QUATEST 1



1. Metallurgical and mechanical testing lab.
2. Electric and electronic testing lab.
3. Light industry testing lab.
4. Food testing lab.
5. Environment testing lab.

PS1 : Professional inspection section 1 (Inspection of mechanical and electric goods)
PS2 : Professional inspection section 2 (inspection of chemical and building material)
PS3 : Professional inspection section (Inspection of food stuffs and consumer goods)

CS : Certification section
GA & PS : General affairs and planning section
AS : Administration section
Volume calibration lab.
Mass calibration lab.
Taximeter
MS : Maintenance section
SG : Safeguard section

STAFF AND WORKING ENVIRONMENT OF THE TESTING AND METROLOGY LABORATORIES :

2.1. Staff

Laboratory	No. of professional staff (Eng.).	No. of technical staff
1. Metallurgical and mechanical testing lab.	04	01
2. Electric and electronic testing lab.	03	02
3. Light industry testing lab.	03	03
4. Chemical and food testing lab.	08	03
5. Environment testing lab	05 (01 doctor)	01
6. Metrology calibration and verification lab.	06	

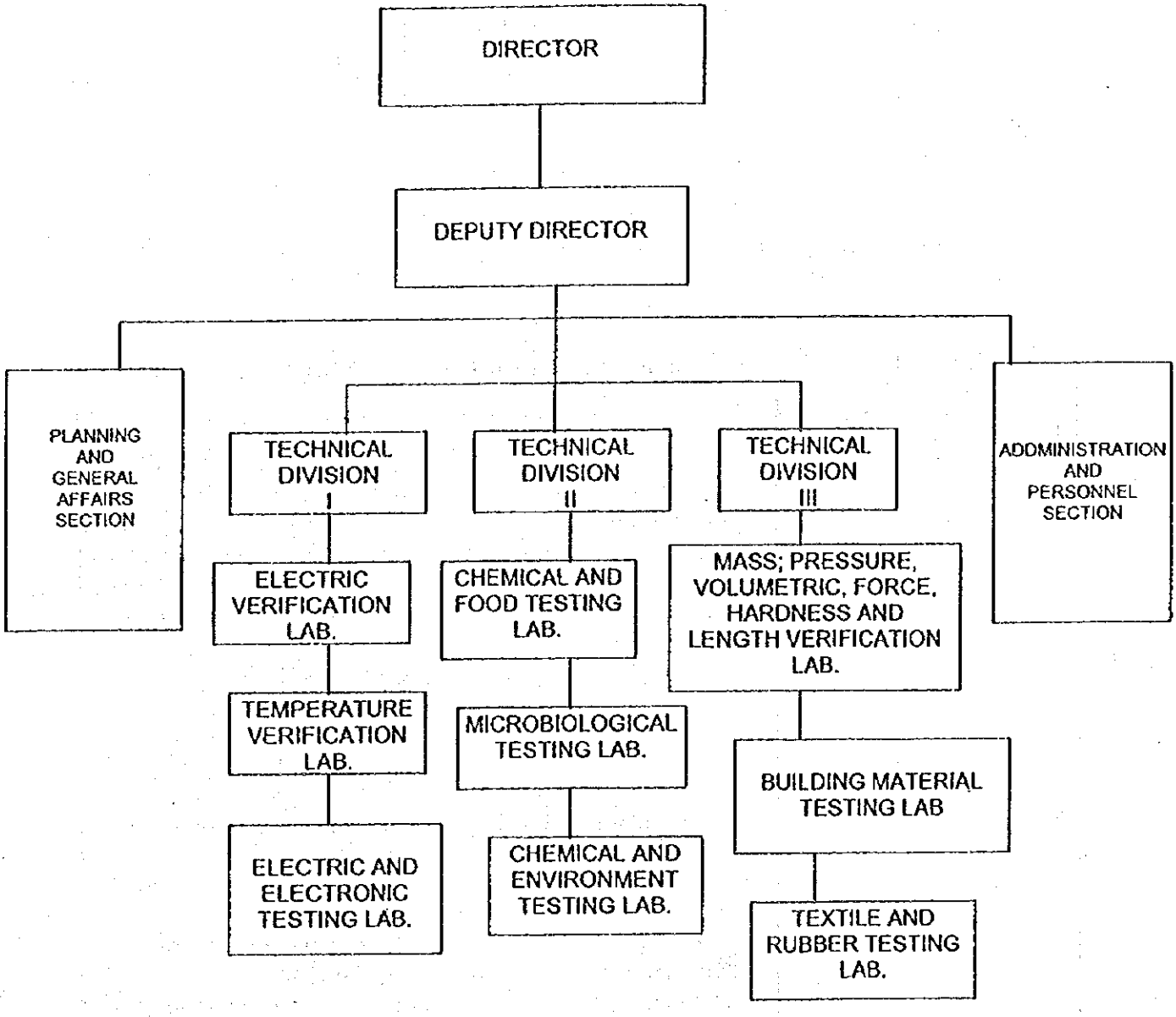
3. Present status of equipments instruments or calibration facilities of laboratories and their services.

Laboratory	Equipments, instruments or machines	Services
1	2	3
Metallurgical and mechanical testing lab.	• Ultrasonic defectoscope UPI P11 & MS 330 • Ultrasonic thicknessmeter DM2 & CL204 • Equipment with eddy current (Defectometer) • Ultrasonic hardnessmeter (Microdur) • Coordinatometer OMICRON • Metallographical microscope IVEOPHOT 21; METEVAC • Tool microscope UMU • Oven CHINO • Surface roughnessmeter SURFEITS • Thickness coating meter NEODEMR & ELCOMETER • Pressure testing machine • Spring tester • Tensile testing machine P50, P05 safety testing • Knocked testing machine HECKERT • Magnetic measuring and machine PMA-70	Physic-mechanical testing field : • Physic-mechanical characteristics of metal and it's products such as : insulating glass, wood, cement, concrete, stone, brick, ceramic,... • Measuring dimension, roughness; polishing, quality of coating (dipped coating; spray coating,...) • Chemical compositions analyses; measuring hardness, metallurgical structure,... NDT testing (non-destructive testing) : • Ultrasonic detecting outside and inside defects; • Ultrasonic measuring hardness • Detecting outside and inside defects by magnetic and penetrating methods, measuring thickness coating
Electric and electronic testing laboratory	• Conductivity bridge P33T • Thomon whetstone bridge • Supper meohmmet SM5E • High voltage tester • Digital ammeter • Digital bridge • Universal measuring equipment for electric leakage current type 3226 • Noise meter type 3604	Environmental influence testing : • Climate influence testing (humidity 10 -- 95%, temperature 10 - 90°C) • Metal corrosion • Vibration testing • Thermostable • Industrial noise measuring • Alternative high voltage testing • Direct current highvoltage testing

	• Vibrator type 80 • Digital climate testing equipment • Meager earth tester • Thermometer • Alternative and direct current threephases power meter • Digital vibration machine • Three phases and one phase -meter • Digital onephase power meter cost U1 • Universal measuring meter U, I, P K506 • Alternative and direct current voltmeter • Oven Brinder • Windmeter • Thermostat • Resistance bridge • Digital distortion LDM-170 • Panme	• Insulation testing • Electric parameters measuring : • Earth resistance measuring accuracy 2,5% • R,L,C measuring • Alternative voltage measuring accuracy 0,5% • Three-phases electric power measuring ACO - 1000v, • Onephase cos∅ coefficient frequency 50Hz; accuracy 0,5 - 1,5% • Current protective role • Obraction • Dimension of electric wires
Light industry testing lab.	• Technical and analytical balances • Oven • Thickness meter • Polish measuring equipment • Tensile testing machine • Color fastness testing machine • Whiteness testing machine • Material testing machine for bending and compression • Striking testing machine • Bursting tester • Water permeability testing machine	Scope of testing Mechanical, physical; chemical and hygienic characteristics Object of testing : • Textile product : fabrics; cloths; silk; wool; yarn; garments; socks; artificial leather; coating fabrics; etc. • Different kinds of paper: Printing writing; stencil and carbon paper; toilet paper; packing paper; cardboard... • Rubber and plastic products : boots; shoes; PVC pipes; washers foam. • - Paints and vanishes
Chemical and food testing lab.	• Gas chromatography • High pressure liquid chromatography • Atomic absorption spectrophotometer • Chemical and physical testing machine • Microbiological testing equipments	Object of testing : • Different kinds of food; agricultural products; sea products and intended for human consumption and animal feeding. • Food additives: food colors; sweetening matters; preservatives, etc.

	• Thin-layer chromatograph • Ultraviolet spectrophotometer; • Colony counter.	• Cosmetics and other requests Scope of testing : • Composition and nutrition of foods • Food contaminants : microorganisms, mycotosines, heavy metals; pesticide and herbicide resides • Identification and determination of content of food additives
• Environment testing lab.	• Gas-chromatography mass-spectrometer (GCMS) Model 5890 series II plus • Visible spectrometer Model: Navaspec II 58903 • Toxicgaz-meter Model : Envirotrack IV • PH meter Model pH 95 • Flameless spectrophotometer • Dissolved oxygen meter Model : Oxy 92 • Kelhdal apparature • Soxhlet apparature • Analytical balances Model : BP201S • Technical balances Model : PE 300 • Soil test : Model : DC 1600	• Objects of testing : • Water analysis • Air analysis • Soil testing • Residue of pesticides and insecticides • Chemical product testing
Mass and volume metrology lab.	• 3 set of secondary weights from 1mg up to 500g • 1 set of tertiary weight from 0,5 kg up to 10 kg • Standard balances : + 1 standard balances 50kg + 2 standard balances 200g + 1 standard balances 6200g • Set of secondary standard flasks from 5 to 200litres • 2 set of primary standard flasks : 10 litres and 20 litres	• Volume measuring • Mass measuring

ANNEX 2 : ORGANIZATION STRUCTURE OF QUATEST II



2. Staff and working environment of technical divisions

2.1. Staff

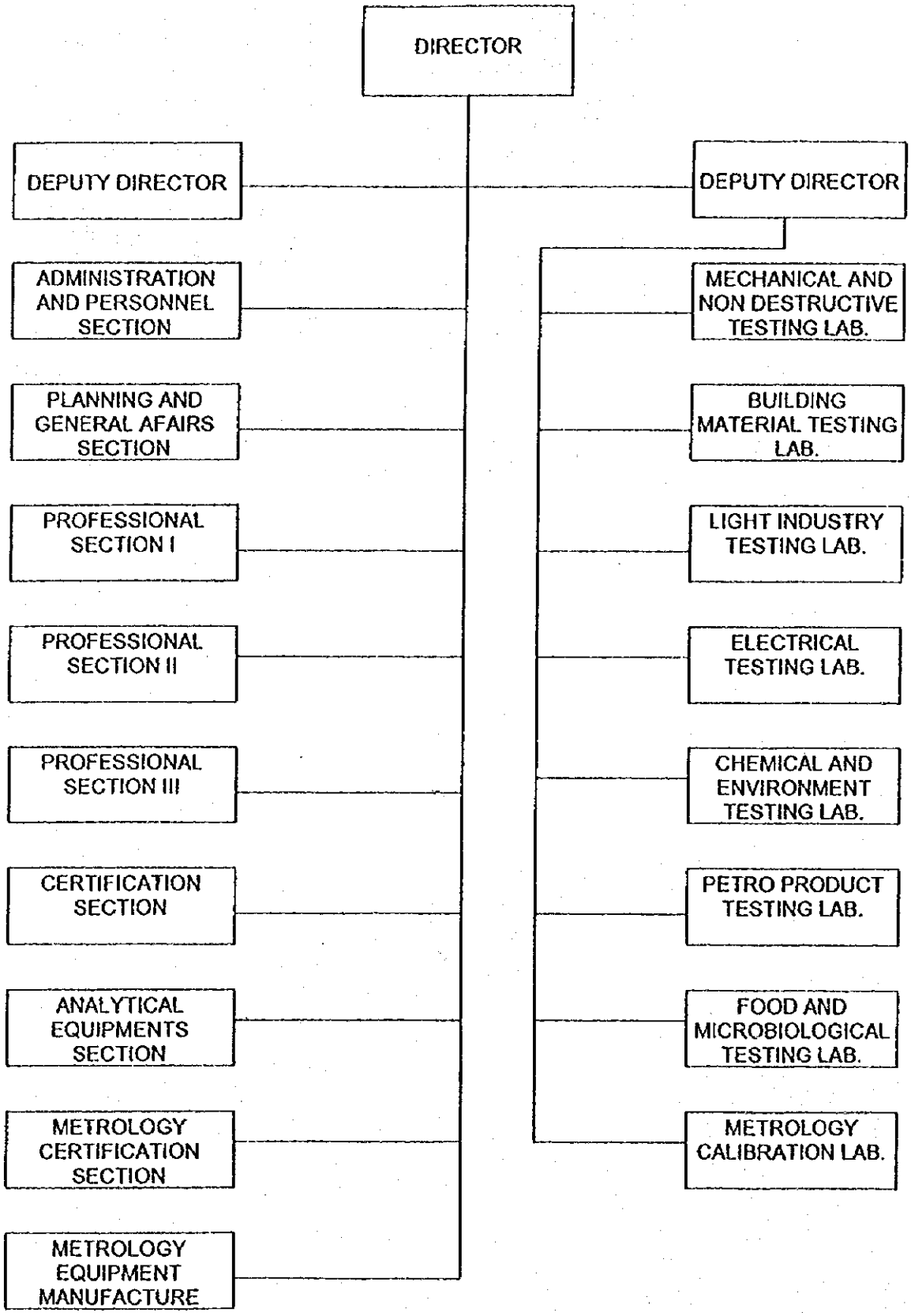
Division	No. of professional (Eng.) staff	No. of technical staff
Technical Division I	4	1
Technical Division II	9	3
Technical Division III	5	2

2.2. Present status of equipments ; instruments or calibration facilities of Tech. divisions and their activities (services)

No. of Technical Division	Equipments, instruments or machines	Activities (services)
1	2	3
1	- tachometer - megohmeter - ammeter millimeter - verification voltmeter -verification elec. multimeter - verification three phases watthourmeter - standard electrical meter	- repair and calibration of measuring electrical, electronic and photoelectronic equipments. - research and manufacture of verification and calibration one phase and three-phases watthourmeter. - maintenance of metrology equipments and testing equipments for chemical and microbiological labs.
2	- gas chromatograph. -spectrophotometer - Flameless spectrophotometer - pH meter - BOD meter - COD meter - turbidimeter - oven - dissolved oxygen meter - incubator - sterile chamber	- testing and analyze of water, air... - environment research and evaluation - testing and analyses of vegetable, water... - information and training on subjects concerning chemical and microbiological testing methods.
3	- set of secondary and tertiary standard weights. - secondary and tertiary	- verification of balances manometers, watermeter, (tank truck gauge, tank

	standard, balances - manometer - standard dynamometer - secondary and tertiary standard flasks - 100 ton tensile and compress testing machine - 30 ton compress testing machine for cement	content gauge), strength testing machine, building material testing and analyses testing - analyses of textile and rubber products - research and manufacture of tensile dynamometer up to 1,5 ton ; pressure generator up to 200atm. - information and training on subjects concerning the above mentioned fields.

ANNEX 3 : ORGANIZATION STRUCTURE OF QUATEST III



2. Staff and working environment of the testing and metrology laboratories

2.1. Staff

Laboratory	No. of professional (Eng.) staff	No. of Technical staff
1. Mechanical and NBT testing lab.	3	11
2. Light industry testing lab.	2	2
3. Building material testing lab.	2	4
4. Electrical testing lab.	2	1
5. Chemical and environment testing lab.	8	8
6. Petroproduct testing lab.	3	2
7. Food testing lab.	3	4
8. Verification section	5	2
9. Humidity and physic-chemical measurement lab.		
10. Pressure, mass, volumetric verification lab.	5	7

2.2. Present status of equipments; instruments or calibration facilities of laboratories and their services

Laboratory	Equipments, instruments or machines	Services
1	2	3
1. Mechanical and NDT testing lab.	- Universal testing machine - Knock testing equipment - Multimeter; microscope - Hardness measuring equipment - Ultrasonic. defectoscope - X-ray photograph - Gamma-ray photography source - Magnetic defectoscope - Metallographical microscope - Equipment for analyses of metallic elements.	- Testing activities - Training on subjects concerning mechanical and NDT testing methods - Research and development of productivity and quality improvement programme
2. Light industry testing lab.	- Tensile testing machine - Environmental chamber - FTIR machine - Color fastness testing machine - Equipment for analyses of mechanical and physical	- Product testing and quality certification (paper, rubber, clothes, plastic...) - Development and training on testing methods - Research and development

	characteristics of paints, papers and clothes	of productivity and quality improvement programme
3. Building material and construction testing lab.	- 2000kN material testing machine for belding and compression - 250kN compress testing machine - 10kN belding testing machine - 8kN tensile testing machine, - Ultrasonic tester PUNDIT - Concrete test hammer - Aggregate abrasion device - Profilometerm profometer	- Building material and construction testing according to customer requirements.
4. Electrical testing lab.	- High pressure testing machine - Resistance bridge - Environmental chamber - Megohmeter - Tensile resistance testing machine - Watthourmeter; ammeter; millimeter; wattmeter;... - Incubator,...	- Electric testing - Design and construction of lightning arrests
5. Chemical and environment testing lab.	- Atomic absorption spectrophoto meter (AAS) - Gas chromatography (GC) - High pressure liquid chromatography (HPLC) - Gas chromatography mass spectrometer (GCMS) - Flameless spectrophotometer - Potentiometer	- Chemical, food and environment analyses
6. Petroproduct testing lab.	- Equipment for determination of knock characteristic : octane number (motor and research method) - Equipment for determination of TBN, TAN - Viscosimeter - Equipment for determination of existent gum - Equipment for determination of induction period	- Petroproducts analyses; (quality determination of gasoline; fuel oil; lubricants, aviation oil...) - Quality control of import and domestic products.
7. Food testing lab.	- Photometer - Polarimeter - Refractometer - Turbidimeter - Mettle FP62 - Metallographical microscopes - Colony counter - Equipment for inoculation	- Physico-chemical and microbiological analyses of food products - Labor assistant training - Formulation of testing methods
8. Calibration lab.	- Universal voltmeter DHM 7562	- Electric, temperature; mass,

	- Standard AC/DC - Set of standard resistors - Standard proving rings - Thermocouple - Standard weights E2, F1 - Primary standard flask	volume and length calibration - Verification; repair and maintenance services
9. Humidity and physico-chemical measurement lab.	- Hygrometer - Visicosimeter - Hydrometer, pyknometer - PH meter - Dissolved Oxygen meter - UV - VIS spectrophotometer - Conductivity/TDS meter - Turbidimeter	- Verification of hygrometer, Viscosimeter for petroproducts and hydrometer (pyknometer) - Repair and maintenance metrology equipments: such as electronic balances, oscilloscopes, frequency counter; generators; CNC ; ... - Supplying equipments for metrology and testing services
10. Metrology section	A. Pressure verification - Standard piston pressure gauge cc x 0,05 up to 550 bar - Piston pressure cc x 0,2 up to 550 bar - Set of pressure gauges cc x 0,4 up to 600 bar - Electronic pressure gauge to 700 bar cc x 0,05 from 1 bar to 0 bar cc x 0,05 - B. Mass verification - Set of weights F1 up to 200g - Set of weights F2 from 1mg to 1kg - Set of weights E2 from 1g to 100g - Set of weights F2 from 1g to 5g - Secondary balance up to 200g - Primary balance up to 20g - Tertiary balance up to 6kg C. Volume verification - Set of secondary standard flasks from 5 to 5000litre - Verification mobile watermeter cc x 0,2 up to 45m3/h - Verification mobile petroleum tank dimension gauging equipment cc x 0,2 up to 200m3 - Verification meter up to 40mm - Verification of stable bath containing	- Verification of measuring equipments.