ベトナム社会主義共和国
基準認証制度運用体制強化プロジェクト
終了時評価報告書

平成 25 年 2 月
(2013 年)

独立行政法人国際協力機構
産業開発・公共政策部

産 公
JR
13-181

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QUATEST 3 内にある EMC 試験所

EMC 試験所内の EMC 試験室の様子

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QUATEST 1 試験所内にある試験装置

STAMEQ との協議の様子

協議議事録（M/M）への署名式

略　語　表

略　語	正式表記	日本語表記
APLAC	Asia Pacific Laboratory Accreditation Cooperation	アジア太平洋試験所認定協力機構
APLAC MRA	Asia Pacific Laboratory Accreditation Cooperation Mutual Recognition Arrangement	アジア太平洋試験所認定協力機構　相互承認協定
BOA	Bureau of Accreditation	認定局
CB	Certification Body	認証機関
CBTL（s）	CB Testing Laboratory	CB（スキーム）試験所
CISPR	Comité International Spécial des Perturbations Radioélectriques	国際無線障害特別委員会
C/P	Counterpart	カウンターパート
DAC	Development Assistance Committee	OECD 開発援助委員会
EMC	Electro-Magnetic Compatibility	電磁両立性
EPA	Economic Partnership Agreement	経済連携協定
IEC	International Electrotechnical Commission	国際電気標準会議
ILAC	International Laboratory Accreditation Cooperation	国際試験所認定協力機構
ISO	International Organization for Standardization	国際標準化機構
JETRO	Japan External Trade Organization	独立行政法人日本貿易振興機構
JICA	Japan International Cooperation Agency	独立行政法人国際協力機構
JCC	Joint Coordinating Committee	合同調整委員会
M/M	Minutes of Meeting	ミニッツ（協議議事録）
MLA	Multilateral Recognition Arrangement	国際相互承認協定
MOIC	Ministry of Information and Communications	情報・通信省
MOST	Ministry of Science and Technology	科学技術省
NCB	National Certification Body	国内認証機関
OECD	Organization for Economic Cooperation and Development	経済協力開発機構
PAC	Pacific Accreditation Cooperation	太平洋認定機関協力機構
PDM	Project Design Matrix	プロジェクト・デザイン・マトリックス
PO	Plan of Operations	活動計画
QUACERT	Vietnam Certification Center	ベトナム認証センター
QUATEST	Quality Assurance and Testing Center	品質保証試験センター

R/D	Record of Discussions	討議議事録
STAMEQ	Directorate for Standards, Metrology and Quality	標準計量品質総局
TBT	Technical Barriers to Trade	貿易の技術的障壁
TCVN	Viet Nam Standards（Tieu Chuan Viet Nam）	ベトナム国内規格
VMI	Viet Nam Metrology Institute	ベトナム計量機関
VSQI	Vietnam Standards and Quality Institute	ベトナム標準品質機関
WTO	World Trade Organization	世界貿易機関

終了時評価結果要約表

１．案件の概要	
国名：ベトナム社会主義共和国	案件名：基準認証制度運用体制強化プロジェクト
対象地域：ハノイ、ホーチミン	援助形態：技術協力プロジェクト
分野：民間セクター開発	協力金額（評価時点）：3.5 億円
所轄部署：産業開発・公共政策部産業・貿易課	先方関係機関：STAMEQ 及びその傘下の VSQI、QUACERT、QUATEST 等の関連機関、BOA
協力期間：2009 年 11 月～ 2013 年 4 月	日本側協力機関：経済産業省

１－１　協力の背景と概要

ベトナム社会主義共和国（以下、「ベトナム」と記す）政府は、2007 年 1 月の世界貿易機関（WTO）加盟に伴い、科学技術省（MOST）標準計量品質総局（STAMEQ）を中心に基準認証関連法令の整備を進めているほか、貿易への技術障壁を除去し、海外市場、海外直接投資の要求を満たすために、基準認証分野の取り組みを強化する必要に迫られている。電気電子製品は将来的に輸出の増加が期待されるとともに、消費者の安全配慮の観点からも重要な分野であるが、同分野における基準認証制度は十分に整備されていない。

ベトナム政府は、プロジェクト開始前に、①家電 13 品目（扇風機、電気炊飯器、ケーブル等）を強制規制対象とすることを検討していたが、ベトナムの認定機関、認証機関、試験機関のいずれもその経験が不足しているとともに、その技術インフラも整っていなかったため、13 品目の強制認証制度が完全に施行される体制は整っていなかった。また、②電気電子機器の妨害電波に関する試験である電磁両立性試験（EMC 試験）の方法について、世界標準の方法（1 GHz 以上の周波数の妨害電波を計測する方法）に整合させることを検討していたが、試験設備や技術インフラが整っておらず、実現には至っていなかった。さらに、③電気分野の国際標準化機関である国際電気標準会議（IEC）が進めている国際的な相互認証制度である IECEE/CB スキームへの加入を検討していたが、CB スキームへ加入するには途上国にとって困難な条件を満たす必要があり、実現に至っていなかった。

これら問題点を改善するために、JICA は 2009 年 11 月から 2013 年 4 月までを予定として、STAMEQ をカウンターパート（C/P）として、技術協力プロジェクトを実施しており、これまでに 3 名の長期専門家（チーフアドバイザー、CB スキーム、業務調整）に加えて、必要に応じて複数名の短期専門家を派遣してきたとともに、必要な試験機材を供与してきた。

これまでのプロジェクトの成果として、①当初は強制 13 品目のうち、6 品目の試験しか実施できなかったが、現在では 13 品目の試験を実施できるようになったこと、②世界標準の方法により EMC 試験を実施できるようになったこと、③ CB スキームへの加入申請を行うべく準備を進めていること、などが挙げられる。また今後は、プロジェクト期間中に CB スキームへの加入申請を完了するべく引き続き準備を進める必要がある。

１－２　協力内容

（１）上位目標：

ベトナムで製造された電気・電子製品の品質及び消費者の安全確保状況が確認される。

（2）プロジェクト目標：
STAMEQ 及び基準認証制度関連のその他の組織のシステム及び運営が強化される。

（3）成果：
1．電気・電子分野における基準認証政策の立案能力が強化される。
2．電気・電子分野における基準及び規格を作成する能力が向上される。
3．認定能力が向上される。
4．電気・電子分野における認証能力が向上される。
5．電気・電子分野における試験能力が改善される。

（4）投入（評価時点）
＜日本側＞
長期専門家派遣：3 人
短期専門家派遣：延べ 16 人
本邦研修受入れ：45 人
機材供与：試験機器等
＜ベトナム側＞
C/P 配置
オフィススペースの提供（ハノイ・ホーチミン）
ローカルコスト負担

2．評価調査団の概要

調査者	総　　括	本間　徹	JICA 国際協力専門員
	基準認証政策	西本　光徳	独立行政法人製品評価技術基盤機構 認定センター（IA Japan）所長
	評価計画	前崎　渉	JICA 産業開発・公共政策部産業・貿易課
	評価分析	進藤　由美	MTA ジャパン株式会社
調査期間	2012 年 11 月 15 〜 30 日		評価種類：終了時評価

3．評価結果の概要

3－1　実績の確認：プロジェクトの成果
STAMEQ 及び STAMEQ 管轄の関連諸機関である、ベトナム認証センター（QUACERT）、ベトナム標準品質機関（VSQI）、品質保証試験センター（QUATEST）1 並びに QUATEST 3、さらに認定局（BOA）において、個々の成果はほぼ達成されており、基準認証制度の運用体制は強化されてきていると認識した。プロジェクト期間終了までには、プロジェクト目標は高いレベルで達成されるものと思われる。

（1）成果 1：電気・電子分野における基準認証政策の立案能力が強化される。
基準認証政策立案能力強化のために、STAMEQ 及び関連機関の職員に対して、プロジェクトの中で適宜研修や、技術指導が提供され、また日本の認定制度や製品試験、製品認証制度を学ぶ機会を得たことは関係者間において非常に評価されている。研修内容によっては、参加者にとって業務上直接関係のない分野も含まれていたかもしれないが、基準認証制度の全体を学べたことは非常に良い機会であったといえる。よって、成果 1 全体として

は、現状時点では十分満足する成果が上げられたと評価できる。

（2）成果２：電気・電子分野における基準及び規格を作成する能力が向上される。

ベトナム国内規格（TCVN）の 増加基調は変わらない。終了時調査時点で、TCVN は約 6,600 あり、そのうち 492 が電気・電子製品関連規格である。

この 492 の電気・電子製品規格のうち、82.7％に当たる 407 規格が国際電気標準会議（IEC）規格に準拠している。政府予算も限られているので、IEC 規格はすべてが最新のものではないが、必要性が確認された場合、漸次更新を行っている。2008 年には、IEC 規格に準拠して 52 の TCVN が策定され、その数は 2009 年は 51、2010 年は 57 と順調に増加している。成果２は十分な成果が得られたと評価できよう。

（3）成果３：認定能力が向上される。

JICA プロジェクトで供与された機材により、電気電子製品試験所・EMC 試験所の BOA による認定に係る試験項目数は増加した。EMC 試験 の分野については、本プロジェクト供与機材により、EMC 試験所を CISPR 22：2006 に準拠し、かつ、1 ～ 18 GHz と拡大した周波数レンジでの試験を実施できる試験所であると BOA は認定した。電気・電子製品試験については、電気電子製品試験所を強制 13 品目の要求事項すべてに対応する試験を実施できる試験所であると BOA は認定した。加えて、BOA はこれまで管理システム分野に限られた太平洋認定機関協力機構（PAC）国際相互承認協定（MLA）のメンバーであったが、製品認証分野のメンバーとしてのステータスも得ることができた。

（4）成果４：電気・電子分野における認証能力が向上される。

QUACERT による製品認証の累積数は顕著な伸びを示している。IECEE/CB スキーム申請に関しては、国内認証機関（NCB）としての申請準備をしている QUACERT については、十分に準備がなされており、いつでも申請できる状況である。

（5）成果５：電気・電子分野における試験能力が改善される。

本プロジェクトでは、QUATEST 1 及び QUATEST 3 に対して機材供与が実施された。それにより、両 QUATEST では強制規制対象の電気電子製品 13 品目につき、すべて（その範囲及び項目において）の試験が可能となった。EMC 試験については、機材供与により QUATEST 3 は CISPR 22：2006 に準拠する体制が整い、Circular No. 31：2001/BTTTT（MOIC）記載の法令・規則や Regulation No. QCVN 09：2012/BKHCN（MOST）要求にも沿う形で周波数レンジ 1 ～ 18GHz での試験を行えるように試験範囲を拡大することができた。

３－２　評価結果の要約

（1）妥当性

次の理由から、プロジェクトの妥当性は高いと評価できる。

ベトナムは 2007 年 1 月の WTO 加盟に伴い、STAMEQ を中心に基準認証関連法の整備を進めているほか、貿易への技術障壁を除去し、海外市場、海外直接投資の要求を満たすべく、基準認証分野の取り組みを強化しており、このトレンドは将来においても変わらないものと思われる。また、ベトナムの経済政策についても今後とも大きな変化はなく、プロジェクト実施機関である STAMEQ 及び関連諸機関についても大きな変化はないと思われ、

ベトナム政府において、基準認証制度の重要性については高い水準で認識され続けるであろう。他方、日本の政府開発援助（ODA）政策、及び対ベトナム ODA 政策でのプロジェクトの位置づけにも変更はなく、基準認証制度に関する日本の優位性も高く、プロジェクトを遂行することは適切である。

（2）有効性

プロジェクトの有効性は非常に高いものと評価する。

① 基準認証制度の運用体制の強化

STAMEQ 及び関連諸機関は、国際標準や国際的な流れと比べてみると、基準認証制度の運用体制が改善され強化されてきている。QUACERT、QUATEST 1 及び QUATEST 3 の運営方法は国際的な運営方法に準拠しており、現在 IECEE/CB スキームへの申請に向けて準備を進めている。

② 各成果の達成

プロジェクト期間終了までに、おのおのの成果が高いレベルで達成されることによりすべての成果を高いレベルでの達成が見込まれる。STAMEQ は既に多くの国際的な活動に参加してきている。BOA、QUACERT 及び VSQI はプロジェクト活動によりベトナムの産業界のみならず、関連国際機関からも認知され信頼度が向上してきている。QUATEST 1 及び QUATEST 3 の試験能力は計画通り強化されてきている。製品認証能力や、試験の信頼性は本邦研修やセミナー、専門家による技術指導等により向上しつつある。

（3）効率性

投入と成果の関係から評価すると、効率性は高いと評価できる。

① 専門家の派遣

長期専門家及び短期専門家の派遣は、その派遣数、専門性及び能力等から評価して適切であった。当初計画に加えて、C/P からの強い要望と中間評価レビュー時の提言により電気試験及び IECEE/CB スキーム に熟知した長期専門家の派遣が実現した。

② 研修及び技術指導

電気・電子製品分野における基準認証制度政策立案能力強化のために、プロジェクトにおいて STAMEQ のスタッフに対して適切な研修や技術指導が提供されたことは非常に高い評価を得ている。

③ 認定能力の向上について

成果 3 の認定能力の向上については、日本での研修及び技術指導は一般的なノウハウ提供をめざしたものではなく、ベトナムのニーズに基づいたものであった。特に“EMC 試験所認定”は高い評価を得た。本邦における研修後、BOA のアセッサー及びスタッフは学んだ知識を自らの活動に生かした。 JICA 短期専門家による“計測の不確かさ”セミナーも高い評価を得た。

④ プロジェクト目標の達成

プロジェクト期間中におのおのの成果が高いレベルで達成することによりプロジェクト目標は高いレベルで達成されるであろう。プロジェクトの各々の成果は、STAMEQ 及び関連諸機関の基準認証制度に対する理解や重要度の認識につながるであろう。

（4）インパクト

プロジェクト実行による次のようなポジティブなインパクトを確認した。ネガティブなインパクトについては、これまでのところ確認されていない。

① 上位目標の達成

プロジェクトの完了により , ベトナムの基準認証制度及び運営は強化されるであろう。この傾向は、プロジェクト終了後も続くものと思われ、結果として電気・電子製品の品質は向上し、消費者の安全性は確保されるものと思われる。

② ポジティブなインパクト

QUATEST 1 及び QUATEST 3 に関し、電気・電子関連以外のラボにも改善されたマネージメント・システムを導入するという動きがみられ、プロジェクト実行により得た知識、経験を QUATEST 内の他の分野に適用するというポジティブなインパクトが観測された。

③ 想定外のポジティブなインパクト

想定外のインパクトがみられた。STAMEQ 内の機関のひとつではあるが、今般のプロジェクトの C/P ではない Vietnam Metrology Institute（VMI；計量機関）がプロジェクトが主催するセミナーに興味をもち、各分野から 9 人の科学者（電気・電子、容量、周波数、化学、質量、硬さ、など）が「計測の不確かさに関するセミナー Tutorial Seminar（Advance Course +Basic Course）」に参加した。

（5）持続性

以下の理由により、プロジェクトの持続性は高いといえる。

政策面については、ベトナムは 2007 年 1 月の WTO 加盟に伴い、STAMEQ を中心に基準認証関連法の整備を進めているほか、貿易への技術障壁を除去し、海外市場、海外直接投資の要求を満たすべく、基準認証分野の取り組みを強化しており、政策面の持続性が見込まれる。

制度面については、STAMEQ 及び関連諸機関の所掌は継続される予定であり、プロジェクト実施を通じ基準認証に係る能力が向上した各機関により、電気・電子製品における基準認証制度は高いレベルで維持され、プロジェクトでの成果を維持することが可能であると判断される。

財政面については、STAMEQ 及び基準認証関連諸機関は、試験機器のメンテナンス費用などを確保しており、また IECEE/CB スキームに加盟するための費用を獲得する見込みであり、おおむね自立的活動が行える財政基盤を有すると考えられる。

技術面については、本プロジェクト期間中、QUACERT、QUATEST 1 及び QUATEST 3 の製品認証、テスティングのためのマニュアルは国際要求事項に従って見直され、最新の状態に保たれており、移転された技術の持続性は高いと認められる。

3－3 プロジェクトの実施プロセス

（1）効果発現に貢献した要因

本プロジェクトは基準認証制度という非常に専門性の高い分野を対象としており、内容も、試験、認定、認証、規格、EMC など多岐にわたる。この分野は日本でも専門家が非常に限られているため、そうした状況下、本邦研修、並びに短期専門家の派遣、セミナーの実施などを総合的に組み合わせて、効果的な技術移転が実施されるよう努力している。

さらには、IECEE/CB スキーム加盟に向けて、その分野に長けた人材をプロジェクト後

半に新たに追加派遣するなど、目標達成に向けて柔軟に対応するなどの努力を多々確認した。インタビューを通じても、C/P 研修や短期専門家、セミナー等を通じた技術移転は適切であったと高い評価を受けた。

中間レビュー時点において、EMC 試験の供与機材の設置の遅延、及び機材の一部を構成するアンテナの破損という問題を確認しており、モニタリングの必要性があった。遅延はプロジェクトの活動にとって致命的な問題ではなく、アンテナも早急に取り替えることができ、プロジェクトの活動全体には影響を与えなかったことが確認された。その他、大部分の機材の設置は順調で、設置後の使用についても問題は生じていないことを確認した。

中間レビュー以降、活動実施上の大きな問題や遅れはなく、計画どおりに進んでいることが確認された。プロジェクトチームと C/P との関係も大変良好であり、折々に活動の進捗状況や課題、実施方法について話し合いながら進めてきている。また、これまで 4 回の合同調整委員会（JCC）が開催され、お互いの理解を深めつつ、目標達成へ向けてプロジェクトが実施されていることを確認した。プロジェクトの実行プロセスは概して適切であったと評価する。

（2）問題点及び問題を引き起こした要因

基準認証制度の体制強化は、プロジェクト終了後も継続するであろうことは予想されるものの、上位目標について、現段階で達成見込みを明確にすることは難しいと思われる。上位目標の指標として設定されている、「電気電子製品に関する（STAMEQ に対する）苦情件数」、「国内製造メーカーからの電気電子製品の輸出額」、「市場における（強制 13 品目の）CR マークの付与率」について、それぞれの数値が現段階では入手されていないため、今後プロジェクト期間内に確実に入手することで、上位目標の達成度を近い将来客観的に評価することが可能となる。指標を整備、入手することについて、第 5 回 JCC にて再確認した。

3－4　中間レビューで出された提言のフォローアップ状況

（1）STAMEQ とその他関連機関との連携強化について

中間レビュー時点と比較すると、この問題は解消されつつあることを確認した。このプロジェクトの実施そのものが、関連機関との連携強化を促す作用をもたらしていることがあり、プロジェクトの効果のひとつとして取り上げたい。

（2）プロジェクト・デザイン・マトリックス（PDM）の改訂について

中間レビュー当時の PDM では、成果を効果的にモニタリングし、プロジェクト活動の評価を十分に行うことができないと判断されていた。これを受けて、2012 年 8 月に、PDM を改訂。「指標」、「指標の入手手段」及び「外部要因」を改訂した。

（3）IECEE/CB スキーム分野における長期専門家派遣の必要性について

成果 4 に対する指標の水準を高めるべく、IECEE/CB スキームに申請するための準備を進めるためには、専門家の派遣が必要であることが提言されていたが、それを受けて、2012 年 4 月より長期専門家が派遣されている。

3－5　結　論

プロジェクトはこれまで顕著な進捗を見せており、残り 5 カ月間のプロジェクト期間をもって目標は十分に達成されるであろうことが確認された。

本プロジェクトの実施により、電気・電子製品における基準認証制度（基準認証政策、規格開発、認定、認証、試験）の運営が強化され、試験の実施体制も整備されつつある。これは、STAMEQ 及び関連諸機関で同分野の重要性が十分認識され、理解が深まってきたことが大きい。このプロジェクト期間中、STAMEQ は基準認証関連の国際的な活動に積極的に参加してきた。BOA、QUACERT 及び VSQI はプロジェクトを通じ、ベトナム産業界及び関連国際機関からおのおのの活動について認知されるようになり、信頼も得るようになってきている。QUATEST 1 及び QUATEST 3 の試験能力は計画どおり強化された。C/P の本邦研修、セミナー、専門家による技術支援等によりベトナムの製品認証能力やその信頼性は向上してきている。 以上のことから、プロジェクト目標は終了時までに高いレベルで達成が見込まれるものと結論づける。

３－６　提　言

＜プロジェクト終了までの期間についての提言＞

（１）上位目標の指標を入手するための調査

上位目標の指標として「電気電子製品に関する（STAMEQ に対する）苦情件数」「国内製造メーカーからの電気電子製品の輸出額」「市場における（強制 13 品目の）CR マークの付与率」を設定している。これらの数値をプロジェクト期間内に確実に入手するために、体制を整える必要がある。

（２）JICA 専門家に指摘された不適合事項への対応

CB スキームへの申請をするためには、複数の JICA 専門家が QUACERT、QUATEST 1、QUATEST 3 に対して指摘した不適合事項へ対応する必要がある。

（３）QUATEST 1 と QUATEST 3 との交流の促進

QUATEST 1、QUATEST 3 の試験機関としての能力を向上させるため、両機関は更なる技術的な交流を図る必要がある。

（４）CB スキームへの申請準備

CB スキームへの申請準備として、① CB スキーム申請へのタイムスケジュール、②製品における部品の要求事項への対応、③ CB スキーム申請費用、加入費用、年会費の予算を確保しておく必要がある。

＜プロジェクト終了後へ向けた提言＞

（５）CB スキームへの申請と不適合事項への対応

プロジェクト終了後に、QUACERT を NCB として、QUATEST 1、QUATEST 3 を CB（スキーム）試験所（CBTL）として、即座に CB スキームへの加入申請を行うことが望まれる。また、ベトナム側は CB スキームの評価チームによる不適合事項へ対応するため、短期間のフォローアップを望んでいた。この点については、フォローアップ実施の可否について日本側で検討する必要がある。

（６）機材の校正費用の予算確保

QUATEST 1、QUATEST 3 は、機材の定期的な校正に対する費用を予算として確保しておく必要がある。

（7）13 品目に関する継続的な市場調査

強制 13 品目についての市場調査は、基準認証制度を管轄する STAMEQ においては重要な事項であるため、継続的に調査を実施できるよう体制を整えるべきである。

（8）EMC 規制の周知徹底

2013 年 6 月より、家電 7 製品に対する EMC 規制が始まる。規制開始当初は混乱が予想されるため、事前に周知広報活動を積極的に行うことが望まれる。

（9）13 品目における電気安全試験の規格情報の準備

13 品目における電気安全試験の規格情報としては、共通事項（PART 1）と特別事項（PART 2）とに分かれているが、ベトナムが採用している両者の規格発行年数が異なっていることもあり、製造メーカーが PART 1 を参照できていないという問題が発生している。そのため、適切に PART 1 における規格情報を提供できるようにする必要がある。

（10）JICA 研修の適切な活用

プロジェクト終了後も STAMEQ は JICA 研修を受講することができる。今後も継続的に JICA 研修を受講して能力向上を図ることが望まれる。

３－７　教　訓

（1）本邦研修の有効な活用

基準認証分野では、日本における専門家のリソースがかなり限定されている。そのような分野においては、課題別研修及びテーラーメードの本邦研修を多く活用して能力向上を図るべきである。

（2）日本側関係機関による支援の重要性

本プロジェクトでは、基準認証分野における日本側の関係機関の多大な支援により目標達成がなされた。特に専門家のリソースが少ない分野では、日本側関係機関と JICA、C/P との関係を継続的に維持することが望まれる。

（3）基準認証プロジェクトの継続性

基準認証分野において重要なことは、継続的に運用できるマネジメント体制である。その他の分野においても継続性を意識したマネジメント体制を構築することが望まれる。

３－８　プロジェクトの延長やフォローアップの検討

本調査の結果、プロジェクト期間内にプロジェクト目標が達成される見込みであることが確認できたため、プロジェクト期間の延長は不要であると判断した。

一方、プロジェクトが 2013 年 4 月に終了した後、さほど間を置かず STAMEQ が CB スキームへの加入申請を行うことが期待されている。そして、加入申請後に CB スキームを管轄している IECEE から審査チームが QUACERT、QUATEST 1、QUATEST 3 を訪問し、いくつかの不適合事項を指摘される可能性は排除できない。その不適合事項への対処について協力期間内に予想し、対策を立てること、また、協力終了後にベトナム側だけで行うのは現実的に困難であり、実際に今次調査において各機関からも不適合事項へ対応するためのフォローアップの要望が挙げられた。

これまで本プロジェクトにおいてCBスキームへ加入するための準備を支援してきたこともあり、各機関がこの不適合事項への対応ができないことによりCBスキームへの加入が実現しないのは望ましくないと判断される。

ついては今後、STAMEQからフォローアップの要請が正式に挙がってきた場合、フォローアップとして不適合事項に対する是正対応を実施するか検討を要する。

第１章　終了時評価調査の概要

１－１　プロジェクトの背景

ベトナム社会主義共和国（以下、「ベトナム」と記す）政府は、2007 年 1 月の世界貿易機関（WTO）への加盟に伴い、科学技術省（Ministry of Science and Technology：MOST）標準・計量・品質総局（Directorate for Standards, Metrology and Quality：STAMEQ）を中心に基準認証関連法令の整備を進めているほか、貿易への技術障壁を除去し、海外市場、海外直接投資の要求を満たすために、基準認証分野の取り組みを強化する必要に迫られている。電気電子製品は将来的に輸出の増加が期待されるとともに、消費者の安全配慮の観点からも重要な分野であるが、同分野における基準認証制度は十分に整備されていない。

ベトナム政府は、プロジェクト開始前に、①家電 13 品目（扇風機、電気炊飯器、ケーブル等）を強制規制対象とすることを検討していたが、ベトナムの認定機関、認証機関、試験機関のいずれもその経験が不足しているとともに、その技術インフラも整っていなかったため、13 品目の強制認証制度が完全に施行される体制は整っていなかった。また、②電気電子機器の妨害電波に関する試験〔EMC（Electro-Magnetic Compatibility；電磁両立性）試験〕の方法について、国際標準の方法（1 GHz 以上の周波数の妨害電波を計測する方法）に整合させることを検討していたが、試験設備や技術インフラが整っておらず、実現には至っていなかった。さらに、③電気分野の国際標準化機関である国際電気標準会議（International Electrotechnical Commission：IEC）が進めている国際的な相互認証制度である IECEE/CB スキームへの加入を検討していたが、CB スキームへ加入するには途上国にとって困難な条件を満たす必要があり、実現に至っていなかった。

これら問題点を改善するために、JICA は 2009 年 11 月から 2013 年 4 月までを予定として、STAMEQ をカウンターパート（C/P）として、技術協力プロジェクトを実施しており、これまでに 3 名の長期専門家（チーフアドバイザー、CB スキーム、業務調整）に加えて、必要に応じて複数名の短期専門家を派遣してきたとともに、必要な試験機材を供与してきた。

これまでのプロジェクトの成果として、①当初は強制 13 品目のうち、6 品目の試験しか実施できなかったが、現在では 13 品目の試験を実施できるようになったこと、②国際標準の方法により EMC 試験を実施できるようになったこと、③ CB スキームへの加入申請を行うべく準備を進めていること、などが挙げられる。また今後は、プロジェクト期間中に CB スキームへの加入申請を完了するべく引き続き準備を進める必要がある。

１－２　調査の目的

プロジェクトが残り期間 5 カ月となっていることから、以下を目的として終了時評価を実施した。

① プロジェクト・デザイン・マトリックス（PDM）に照らし、プロジェクトの進捗・各成果の達成度を確認するとともに、評価 5 項目に基づき、これまで及びプロジェクト残余期間、終了後の見込みについての評価を行う。

② 上記評価結果に基づき、残余期間におけるプロジェクト活動及びプロジェクト終了後の STAMEQ に対する提言を行う。

③ プロジェクト終了後の活動計画についてベトナム側に確認し協議を行う（プロジェクトの延長やフォローアップの要否についても検討する）。なお、フェーズ 2 に係る要請が出され

ているが、これは省エネラベルの評価制度に関する内容であり、本プロジェクトと関連性がないため、本調査ではフェーズ２案件の検討を行う予定はない。

１－３　調査団構成

担　当	氏　名	所属先	派遣期間（2010 年）
総　　括	本間　徹	JICA 産業開発・公共政策部 国際協力専門員	11 月 22 ～ 30 日
基準認証政策	西本　光徳	独立行政法人　製品評価技術基盤機構 認定センター　所長	11 月 22 ～ 30 日
協力企画	前崎　渉	JICA 産業開発・公共政策部 産業貿易第一課 調査役	11 月 22 ～ 30 日
評価分析	進藤　由美	MTA ジャパン株式会社	11 月 15 ～ 30 日

１－４　調査日程（2012 年 11 月 15 ～ 30 日）

日　付	訪問先等	
	進藤（評価分析）	本間（総括）、 西本（基準認証政策）、 前崎（協力企画）
11/15（木）	ハノイ到着	
11/16（金）	プロジェクトチームとの打合せ BOA（認定部門）との協議	
11/17（土）		
11/18（日）		
11/19（月）	STAMEQ（標準軽量品質総局）との協議 QUATEST 1（試験部門）との協議 VSQI（規格部門）との協議 QUACERT（認証部門）との協議	
11/20（火）	STAMEQ 標準化部との協議 STAMEQ 認証部との協議 VMI（計量部門）との協議	
11/21（水）	パナソニックベトナム社との意見交換 Ferroli Indochina Co., Ltd.（ベトナムローカル企業）との意見交換 ハノイからホーチミンへ移動	
11/22（木）	QUATEST 3（試験部門）本部との協議 QUATEST 3 試験所との協議	ホーチミンへ到着

11/23（金）	QUATEST 3 本部との協議 QUATEST 3 試験所の見学 JETRO ホーチミンとの意見交換
11/24（土）	書類整理
11/25（日）	ホーチミンからハノイへ移動
11/26（月）	STAMEQ、VSQI、QUATEST 1、QUACERT、BOA との協議
11/27（火）	MOST タイン副大臣への表敬訪問 STAMEQ、VSQI、QUATEST 1、QUACERT、BOA との協議
11/28（水）	STAMEQ、BOA との協議議事録の署名式 JETRO ハノイとの意見交換
11/29（木）	ホアラックハイテクパークへの訪問 日本大使館への報告 JICA ベトナム事務所への報告
11/30（金）	ハノイから成田へ

第２章　終了時評価の方法

２－１　終了時評価調査の目的と評価基準

本調査は「新 JICA 事業評価ガイドライン　第１版」[1] 及び「プロジェクト評価の手引き（改訂版）」[2] に基づいて実施された。終了時評価の目的は、対象となる実施プロジェクトの目標が協力期間終了までに達成されるかを総合的に検証し、協力終了の適否や協力延長の必要性の判断に活用することにある。評価の主な視点は、①プロジェクトをとりまく現状把握・検証、② DAC 評価５項目という５つの評価基準を用いての検証、さらに、③提言・教訓を次の段階へフィードバックする、という３つの枠組みで構成されている。②の評価５項目については、現状・実績に基づき、特に有効性（事業効果の達成状況）を総合的に検証する。インパクト、持続性については、見込みについて検証する。

JICA のプロジェクト評価では、評価における価値判断の基準として、「評価５項目」を採用している。この評価５項目とは、1991 年に経済協力開発機構開発援助委員会（OECD-DAC）で提唱された開発援助の評価基準であり、以下の５項目から成る。

DAC ５項目による評価の視点

妥当性 （Relevance）	プロジェクト目標や上位目標が受益国のニーズに合致しているか、問題や課題の解決策として適切か、相手国と日本側の政策との整合性はあるか、プロジェクトの戦略・アプローチは妥当か、公的資金である政府開発援助（ODA）で実施する必要があるかなどといった「援助プロジェクトの正当性・必要性」を問う。
有効性 （Effectiveness）	プロジェクト目標が達成されているか。プロジェクトの実施により、本当に受益者もしくは社会への便益がもたらされているのか（あるいは、もたらせるのか）を問う視点。
効率性 （Efficiency）	プロジェクトが投入に見合った成果を生み出しているか。インプットに対するアウトプットを定性的かつ定量的に計測する。
インパクト （Impact）	プロジェクト実施によりもたらされる、直接的、間接的効果や波及効果を見る。予期していなかった正・負の効果・影響を含む。
持続性 （Sustainability）	援助が終了しても、プロジェクトによって達成された効果が継続しているか（あるいは持続の見込みはあるか）を問う視点。

出典：「新 JICA 事業評価ガイドライン 第１版」、及び www.oecd.org/dac/evaluation, DAC Criteria for Evaluating Development Assistance, OECD

本終了時評価調査では、プロジェクトの終了間際（残存期間約５カ月）において、めざしていたプロジェクト目標が達成されたかを総合的に検証するものである。妥当性、効率性、有効性については現状・実績に基づいて検証され、また、インパクトや持続性についてもそれまでの実績、活動状況に基づいて、今後の動向や実現可能性について検証する。終了時評価結果は協力終

[1]「新 JICA 事業評価ガイドライン　第１版」（独立行政法人国際協力機構評価部、2010 年６月）

[2]「プロジェクト評価の手引き　改訂版　JICA 事業評価ガイドライン」（独立行政法人国際協力機構企画・調整部事業評価グループ、2004 年２月）

了の適否やフォローアップの決定のために活用されるとともに、類似プロジェクトへの教訓としても使われる。

２－２　主な調査項目

本調査においては、以下の評価設問を中心に調査を実施した。

① 終了時評価時点までの投入実績の確認
② 終了時評価時点までの活動の進捗状況、成果の達成（及び、達成見込み）の確認
③ プロジェクト目標の達成度の確認
④ プロジェクトの効果
⑤ プロジェクト期間終了後の対応をどのようにすべきか

加えて、本調査では、中間レビュー時点で提言された提言事項への対応状況についても確認した。中間レビュー時点での提言内容については以下のとおりである。

① STAMEQ とその他関連機関との連携の強化について
② プロジェクト・デザイン・マトリックス（PDM）及び活動計画表（PO）を用いたより適切な評価手法の構築について
③ IECEE/CB スキーム分野における長期専門家の派遣の必要性について
④ 基準認証政策行政におけるサービスの質的向上の調査について

これらの提言事項のうち、②については、PDM を 2012 年 8 月時点に改訂済み、③については、2012 年 3 月より IECEE/CB スキームの長期専門家を派遣済みである。

２－３　データの収集方法

評価に必要な情報の収集については、以下の方法を用いた。

① 討議議事録（R/D）、合同調整委員会協議議事録（M/M of JCC）、PDM 及び PO の文書のレビュー
② 投入実績や活動実績、成果の達成状況の一覧表、これまで行った調査の結果、研修等の実績をまとめた投入実績表のレビュー
③ 終了時評価調査における現地調査：評価団員による、日本人専門家及び C/P である STAMEQ（各機関）及び認定局（Bureau of Accreditation：BOA）へのインタビューや質問票回答を通じて、プロジェクトの進捗度を検証・評価。インタビューは実績の評価だけでなく、プロジェクトの促進要因や阻害要因を確認するとともに、直接的・間接的インパクトの視点からも実施した。
④ 機材を供与した関連施設等への視察

２－４　評価の最終取りまとめ

収集されたデータやその分析結果、並びにインタビューの内容については、日本側評価調査団によってまとめられたのち、日本側、ベトナム側両国の関係者により協議が行われた。この結果を踏まえ、両国が終了時評価報告書を含むミニッツ（M/M）に署名を行った。

第３章　プロジェクトの実績と現状

３－１　投入実績

３－１－１　日本側投入

専門家の派遣、機材供与、研修員の受入れ、及び現地業務費の負担を含む日本側の投入は予定どおり実施されていることを確認した。

（１）専門家派遣

プロジェクト開始時から終了時評価調査時点までにおいて、長期専門家派遣は 3 名、短期専門家派遣 16 名が投入された。詳細は付属資料の ANNEX 5 を参照のこと。また、中間レビュー時点で提言されていた、IECEE/CB スキーム申請へ向けての支援が可能な長期専門家の派遣が実現している。

短期専門家の派遣分野は、電気電子製品試験・電線試験・EMC 試験等を含む試験関連、認定、及び測定の不確かさ関連の 3 つの分野に大きく分けられる。

表３－１　専門家派遣実績（完了時までの見込みを含む）

長期専門家

技術分野	期間
チーフアドバイザー	22/4/2010-（36 months)
IECEE/CB スキーム	30/3/2012-（12 months)
業務調整	11/4/2010-（33 months)

短期専門家：セミナー講師

技術分野	期間	セミナー開催日	開催場所	出席者数
「計測の不確かさセミナー」	04/11/2010-（7 days)	05/11/2010	HCM	243
		08/11/2010	Ha Noi	215
「計測の不確かさセミナー」	04/11/2010-（7 days)	05/11/2010	HCM	ditto
		08/11/2010	Ha Noi	
「計測の不確かさセミナー」	04/11/2010-（11 days)	05/11/2010	HCM	ditto
		08/11/2010	Ha Noi	
「計測の不確かさセミナー」（初心者向け）		09/11/2010-12/11/2010	Ha Noi	30
「計測の不確かさセミナー」（初心者向け）	08/11/2010-（7 days)	09/11/2010-12/11/2010	Ha Noi	30
「上級者向け計測の不確かさセミナー」	09/2/2012-（10 days)	11/2/2012-14/2/2010	Ha Noi	29
		15/2/2012-17/2/2010	HCM	33
「計測の不確かさセミナー」（初心者向け）	18/2/2012-（6 days)	20/2/2012-22/2/2010	HCM	44
「計測の不確かさセミナー」（中級者向け）	2013 年第 1 四半期予定			

「計測の不確かさセミナー」（中級者向け）	2013 年第 1 四半期予定			

延べ 624 名

短期専門家：技術アドバイザー

Electrical testing（1）	9/5/2011-28/5/2011（19 days)	HCM（QUATEST 3）
	28/5/2011-21/6/2011（25 days)	Ha Noi（QUATEST 1）
Cable Testing	9/5/2011-14/5/2011（5 days)	HCM（QUATEST 3）
	14/5/2011-24/5/2011（11 days)	Ha Noi（QUATEST 1）
EMC Consulting（1）	17/7/2011-23/7/2011（6 days)	HCM（QUATEST 3）
	23/7/2011-28/7/2011（6 days)	Ha Noi（QUATEST 1）
EMC Testing（Electronic Product）	15/7/2012-21/7/2012（7 days)	HCM（QUATEST 3）
EMC Testing（Electronic Product）	18/7/2012-26/7/2012（9 days)	HCM（QUATEST 3）
Accreditation（EE Product）	6/8/2012-11/8/2012（6 days)	HCM（QUATEST 3）
	11/8/2012-17/8/2012（6 days)	Ha Noi（QUATEST 1）
Accreditation（EE Product）	6/8/2012-11/8/2012（6 days)	HCM（QUATEST 3）
	11/8/2012-17/8/2012（6 days)	Ha Noi（QUATEST 1）
Accreditation（EE Product）	6/8/2012-11/8/2012（6 days)	HCM（QUATEST 3）
	11/8/2012-21/8/2012（10 days)	Ha Noi（QUATEST 1）
Accreditation（EMC）	29/8/2012-7/9/2012（10 days)	HCM（QUATEST 3）
Accreditation（EMC）	29/8/2012-7/9/2012（10 days)	HCM（QUATEST 3）

（２）機材供与

機材供与は強制規制対象の電気電子製品 13 品目を試験するための試験機器、及び EMC 試験機器が予定どおり供与された。機材の情報（スペック、金額など）については付属資料の ANNEX 6 を参照のこと。

（３）研修員受入れ

終了時評価時点までに、総計 45 名を対象に C/P 研修が実施された。

・国別研修「アセアン国際標準開発」
・国別研修「製品認証（IECEE/CB スキーム）実践コース」
・国別研修「家電試験」
・国別研修「認証」
・課題別研修「アセアン国際標準開発」
・国別研修「電線・ケーブル試験」
・国別研修「EMC 試験」
・国別研修「日本の電気電子製品認証制度」
・課題別研修「アセアン電気・電子製品適合性評価（IECEE/CB スキーム）」
・国別研修「電気関係製品認証機関」

詳細については付属資料の ANNEX 7 を参照のこと。

（4）在外事業強化費

日本側からは、在外事業強化費として、第 1 年次（2010 年度）US$28,309.53（実績）、第 2 年次（2011 年度）US$28,155.62（実績）、第 3 年次（2012 年度）US$37,454.31（12 月末時点実績ベース）の支出があった。なお、第 3 年次の年度当初見積額は US$46,682.40 となっている。第 1 年次に支出された在外事業強化費は主に、プロジェクトオフィス用の機材（コピー機、プリンター、シュレッダー）、ホーチミンへの出張旅費、セミナー開催のための会議費にかかる費用であった。また、第 2 年次は主に、ホーチミンへの出張旅費、通訳、翻訳料。第 3 年次も同様に、出張旅費、通訳、翻訳料、並びに会議費（セミナー費）が主な内訳となっている。

3－1－2　ベトナム側投入

（1）C/P の配置

プロジェクトの実施にあたって、R/D 記載のとおり C/P が配置された。プロジェクトダイレクターとして、STAMEQ 副局長 Mr. Tran Van Vinh 氏、プロジェクトマネジャーは STAMEQ 国際部副部長 Dr. Vu Van Hong 氏が任命されているほか、プロジェクト各関連部門にそれぞれ C/P が任命されている（付属資料の ANNEX 9 を参照のこと）。

（2）ローカルコスト

ベトナム側負担によるローカルコストについては、機材の設置に係る費用、その他を含め、明細の記載はないものの、STAMEQ 国際部が窓口となり、予定どおりに行われている。

（3）オフィススペースの提供

STAMEQ 国際部が窓口となり、プロジェクト用オフィススペースが予定どおり提供されている。ハノイにある STAMEQ 本部 2 階をプロジェクト常設のオフィスとして、スペース、電気、インターネット回線が提供されているほか、ホーチミンでは、QUATEST 3 内に必要に応じて場所が提供されている。

3－2　成果の達成状況

終了時評価時点までの各成果の達成状況は次のとおりである。

3－2－1　成果 1

成果 1 ：電気・電子分野における基準認証政策の立案能力が強化される。
指標 1-1：JICA 専門家及び本邦研修員によるセミナーの開催数
指標 1-2：C/P の電気電子分野における基準認証政策についての理解

（1）指標 1-1

関係者間で基準認証に関わる事項を共有するためのセミナーが十分に実行されたといえよう。2010 年にはハノイで一度、ホーチミンにて二度のセミナーが開催された。2011 年にはホーチミンにて一度の開催、2012 年にはハノイで一度、ホーチミンで二度開催されている。さらに 2013 年の第 1 四半期にハノイ、ホーチミンにてそれぞれ二度のセミナー開催を予定している。

2010 年 11 月開催の「測定の不確かさ（初級者コース）」及び 2012 年 2 月開催の「測定の不確かさ（上級者コース）」を受講した研修生の中からさらに短期専門家による Trainer's Training を受けた 4 名の研修生が講師となり、民間企業エンジニア向けの測定の不確かさセミナーを開催し、その成果は大きいといえよう。

（2）指標 1-2

電気・電子製品分野の基準認証政策に関する C/P の理解度は高いと思われる。

電気・電子製品分野の基準認証政策に関する C/P の能力強化、向上について、プロジェクトの実行により達成されたことはインタビュー及び質問票にて確認することができた。JICA の研修スキームは、政策立案から実行までを網羅しており、3 つのレベルから構成されている。まず、上級幹部向けとして基準認証政策立案手法についての研修、次のレベルとしては行動計画をデザインするための研修、そして 3 つ目のレベルとしてその行動計画の実行手法を学ぶ研修であった。

さらに、STAMEQ では産業界に対し、基準認証制度の重要性を理解させ、そのための責任が STAMEQ にあること、そしてその活動内容を啓発する努力を組織全体で実施し始めていることを確認した。例えば、より産業界（ユーザー）に沿ったウェブサイトを立ち上げ、その中で基準認証制度に関するベトナムの政策や方針、製品試験、国際規格や適合制度に関する広報活動、産業界からのクレーム事例等が記載されている。

基準認証政策立案能力強化のために、STAMEQ及び関連機関の職員に対して、プロジェクトの中で適宜研修や、技術指導が提供され、また日本の認定制度や製品試験、製品認証制度を学ぶ機会を得たことは関係者間において非常に評価されている。研修内容によっては、参加者にとって直接業務上直接関係のない分野も含まれていたかもしれないが、基準認証制度の全体を学べたことは非常に良い機会であったと言え、指標 1-1、指標 1-2 ともに達成できると評価できる。よって、成果 1 全体としては、現時点では充分満足する成果が上げられたと評価できる。

3－2－2　成果2

成果２：電気・電子分野における基準及び規格を作成する能力が向上される。
指標 2-1：最新の IEC 規格に基づくベトナム国家規格の増加数

（1）指標 2-1

ベトナムの国家規格、基準の作成は STAMEQ の標準品質機関（Viet Nam Standards and Quality Insitute：VSQI）が担当している。

ベトナム国家規格である TCVN の増加基調は変わらない。終了時調査時点で、ベトナ

ム国家規格（TCVN）は約 6,600 あり、そのうち 492 が電気・電子製品関連規格である。

この 492 の電気・電子製品規格のうち、82.7％に当たる 407 規格が IEC 規格に準拠している。政府予算も限られているので、IEC 規格はすべてが最新のものではないが、必要性が確認された場合、漸次更新を行っている。2008 年には、IEC 規格に準拠して 52 の TCVN が策定され、その数は 2009 年は 51、2010 年は 57 と順調に増加している。指標を達成し、成果 2 は十分な成果が得られたと評価できる。

加えて、VSQI の職員に対する本邦研修が高い評価を得ていることも記しておく。2011 年には VSQI の職員 3 名、2012 年に 2 名が日本で研修を受けた。日本では産業界も主体となって、政府と共に規格作成に取り組んでおり、このことはベトナム側にとっては非常に斬新なことであった。また、規格作成には長期計画が重要であり、新たな規格を十分に余裕をもって産業界に伝えることの必要性についても研修を通して学ぶことができたというコメントが多々得られた。

３－２－３　成果３

成果３：認定能力が向上される。
指標 3-1：電気電子製品試験所・EMC 試験所の BOA による認定に係る試験項目数の増加
指標 3-2：太平洋認定機関協力機構 相互認証協定（PAC MLA）への申請状況

（１）指標 3-1

JICA プロジェクトで供与された機材により認定範囲、及び認定項目数が拡大され、本指標を達成できると評価できる。EMC 試験の分野については、本プロジェクト供与機材により、EMC 試験所を CISPR 22：2006 に準拠し、かつ、1 ～ 18 GHz と拡大した周波数レンジでの試験を実施できる試験所であると BOA は認定した。電気・電子製品試験については、電気電子製品試験所を強制 13 品目の要求事項すべてに対応する試験を実施できる試験所であると BOA は認定した。加えて、BOA はこれまで管理システム分野に限られた PAC MLA のメンバーであったが、製品認証分野のメンバーとしてのステータスも得ることができた。

（２）指標 3-2

BOA はこれまで管理システム分野に限られた PAC MLA のメンバーであったが、製品認証分野のメンバーとしてのステータスも得ることができ、本指標は達成できると評価できる。

成果３に関しては、研修、技術指導が、ベトナム側のニーズに従って供与されたことで成果の達成度が高いといえる。研修内容では、特に、「EMC 試験所認定プログラム」は評価が非常に高かった。本邦でのトレーニング後、BOA の審査員やスタッフは学んだ知識を自らの活動に生かしている。

本プロジェクトの実施により、BOA の活動は産業界からより認知されるようになってきており、産業界、及び認定試験所から BOA が食品や電気・電子製品、建築、機械、飼料、肥料などさまざまな分野での認定活動をより強化してほしいとの声が上がっている。

３－２－４　成果４

成果４：電気・電子分野における認証能力が向上される。
指標 4-1：ベトナム認証センター（QUACERT）による製品認証の累積数
指標 4-2：IECEE/CB スキームの申請準備

（１）指標 4-1

製品認証の累計数は顕著な伸びを示している。認証数のトレンドを見てみると次のとおりである；2009 年 259 件（うち、電気・電子製品は 55）、2010 年総計 450 件（うち、電気・電子製品は 88）、2011 年総計 450 件（うち、電気・電子製品は 90）、2012 年は 2012 年 10 月現在で総計 621 件（うち、電気・電子製品 85）。 これら認証数のトレンドを踏まえると、本指標は達成できると評価できる。

（２）指標 4-2

IECEE/CB スキーム申請に関しては、国内認証機関（National Certification Body：NCB）としての申請準備をしている QUACERT については、十分に準備がなされており、いつでも申請できる状況であり、本指標は達成できると評価できる。

QUACERT の職員に対する研修、及び技術指導は非常に好評であった。短期専門家指導による予備審査は、IECEE/CB スキーム申請へ向けての実際的な経験となった。

３－２－５　成果５

成果５：電気・電子分野における試験能力が改善される。
指標 5-1：電気・電子強制分野 13 製品の試験実行状況
指標 5-2：QUATEST 3 の EMC 試験ラボの認証範囲

（１）指標 5-1

本プロジェクトでは、QUATEST 1 及び QUATEST 3 に対して機材供与が実施された。それにより、QUATEST 1 では強制規制対象の電気電子製品 13 品目につき、すべて（その範囲及び項目において）の試験が可能となった。プロジェクト開始当初は、対象製品の試験をすべて行える能力は有していなかった。現在では 13 強制品目だけでなく、その類似品まで試験を行える能力を備えている。 試験件数についても飛躍的な伸びを見せている。

QUATEST 3 についても同様に、強制規制対象 13 品目において、要求されているすべての項目、及び範囲についての試験が可能となった。また、類似製品についても試験ができるようになった。

QUATEST1 及び QUATEST3 ともに電気電子製品 13 品目につき、すべての試験が可能となり、本指標は達成できると評価できる。

（２）指標 5-2

EMC 試験については、機材供与により QUATEST 3 は CISPR 22：2006 に準拠する体制が整い、Circular No. 31：2001/BTTTT（MOIC）記載の法令・規則や Regulation No. QCVN 09：2012/BKHCN（MOST）要求にも沿うかたちで周波数レンジ 1 ～ 18GHz での試験を行

えるように試験範囲を拡大することができ、本指標は達成できると評価できる。このような、EMC 試験における範囲拡大ばかりでなく、試験所職員の試験知識も深いものになった。

さらに、QUATEST 1 及び QUATEST 3 は、それぞれ IECEE/CB スキームにおいて CBTL への申請準備を進めており、これにむけて 2012 年 4 月より長期専門家が派遣され、着実に体制を整えつつある状況である。

３－３　プロジェクト目標の達成状況

プロジェクト目標：STAMEQ 及び基準認証制度関連のその他の組織のシステム及び運営が強化される。
指標１：STAMEQ 及び関連機関の国際標準や国際勧告に照らし基準認証に関する能力が強化される。

STAMEQ 及び関係機関が、国際標準や国際勧告に照らし基準認証に関する能力を著しく強化させたと認められる。QUACEART、QUATEST 1 及び QUATEST 3 は、IECEE/CB スキーム加盟のための準備の最中である。プロジェクト期間の終了までにすべての成果が達成し、プロジェクト目標は達成される見込みである。STAMEQ はより多くの基準認証の国際活動に参加しつつある。BOA、QUACERT 及びベトナム標準品質機関（Vietnam Standards and Quality Institute：VSQI）は、プロジェクト活動を通じベトナムの産業界や関連の国際機関から認知され、信頼を得るようになった。上記を踏まえ、プロジェクト期間終了までには、プロジェクト目標は高いレベルで達成されるものと思われる。

３－４　上位目標の達成見込み

上位目標：ベトナムで製造された電気・電子製品の品質及び消費者の安全確保状況が確認される。
指標１：電気・電子製品における事故件数の減少
指標２：電気・電子分野の国内製造業者による輸出量が増加する。
指標３：定点調査において製品認証マークが付された製品の割合が増加する。

基準認証制度の体制強化は、プロジェクト終了後も継続するであろうことは予想されるものの、上位目標について、現段階で達成見込みを明確にすることは難しいと思われる。上位目標の指標として設定されている、「電気電子製品に関する（STAMEQ に対する）苦情件数」、「国内製造メーカーからの電気電子製品の輸出額」、「市場における（強制 13 品目の）CR マークの付与率」について、それぞれの数値が現段階では入手されていないため、今後プロジェクト期間内に確実に入手することで、上位目標の達成度を近い将来客観的に評価することが可能となる。指標を整備、入手することについて、第 5 回 JCC にて再確認した。

３－５　プロジェクトの実施プロセス

中間レビュー以降、活動実施上に大きな問題や遅れはなく、計画どおりに進んでいることが確認された。プロジェクトチームと C/P との関係も大変良好であり、折々に活動の進捗状況や課

題、実施方法について話し合いながら進めてきている。また、これまで4回のJCCが開催され、お互いの理解を深めつつ、目標達成へ向けてプロジェクトが実施されていることを確認した。プロジェクトの実行プロセスは概して適切であったと評価する。

その他、実施プロセスにおいて特記すべき事柄は次のとおりである。

３－５－１　試験機材の設置

中間レビュー時点において、EMC試験の供与機材の設置の遅延、及び機材の一部を構成するアンテナの破損という問題があった。遅延はプロジェクトの活動にとって致命的な問題ではなく、アンテナも早急に取り替えることができ、プロジェクトの活動全体には影響を与えなかったことが確認された。その他、大部分の機材の設置は順調で、設置後の使用についても問題は生じていない。

３－５－２　技術移転の方法について

本プロジェクトは基準認証制度という非常に専門性の高い分野を対象としており、内容も、試験、認定、認証、規格、EMCなど多岐にわたる。この分野は日本でも専門家が非常に限られているため、そうした状況下、本プロジェクトでは、本邦研修、並びに短期専門家の派遣、セミナーの実施などを総合的に組み合わせて、効果的な技術移転が実施されるよう努力している。さらには、IECEE/CBスキーム加盟に向けて、その分野に長けた人材をプロジェクト後半に新たに追加派遣するなど、目標達成に向けて柔軟に対応するなどの努力を多々確認した。インタビューを通じても、C/P研修や短期専門家、セミナー等を通じた技術移転は適切であったと高い評価を受けた。

３－５－３　中間レビューで出された提言のフォローアップ状況

（１）STAMEQとその他関連機関との連携強化について

中間レビュー時点と比較すると、この問題は解消されつつあることを確認した。このプロジェクトの実施そのものが、関連機関との連携強化を促す作用をもたらしていることがあり、プロジェクトの効果のひとつとして取り上げたい。

（２）PDMの改訂について

中間レビュー当時のPDMでは、成果を効果的にモニタリングし、プロジェクト活動の評価を十分に行うことができないと判断されていた。これを受けて、2012年8月に、PDMを改訂。「指標」、「指標の入手手段」及び「外部要因」を改訂した。

（３）IECEE/CBスキーム分野における長期専門家派遣の必要性について

成果４に対する指標の水準を高めるべく、IECEE/CBスキームに申請するための準備を進めるためには、専門家の派遣が必要であることが提言されていたが、それを受けて、2012年4月より長期専門家が派遣されている。

第４章　評価結果

４－１　評価５項目の評価結果

４－１－１　妥当性

次の理由から、プロジェクトの妥当性は高いといえる。

①　ベトナム国政府の基準認証政策

ベトナムは2007年1月の世界貿易機関（WTO）加盟に伴い、標準計量品質総局（STAMEQ）を中心に基準認証関連法の整備を進めているほか、貿易への技術障壁を除去し、海外市場、海外直接投資の要求を満たすべく、基準認証分野の取り組みを強化しているが、このトレンドは将来においても変わらないものと思われる。

②　ベトナム国の経済政策

ベトナムの経済政策についても今後とも大きな変化はないものと思われる。また、プロジェクト実施機関である STAMEQ 及び関連諸機関についても大きな変化はない。ベトナム政府において、基準認証制度の重要性については高い水準で認識され続けるであろう。

③　日本の ODA 政策との関係

日本の ODA 政策、及び対ベトナム ODA 政策でのプロジェクトの位置づけに変更はない。また、基準認証制度に関する日本の優位性は高く、プロジェクトを遂行することは適切である。

４－１－２　有効性

プロジェクトの有効性は非常に高いものと評価する。その理由は次のとおりである。

①　基準認証制度の運用体制の強化

STAMEQ 及び関連諸機関は、国際標準や国際的な流れと比べてみると、基準認証制度の運用体制が改善され強化されてきている。ベトナム認証センター（QUACERT）、品質保証試験センター（QUATEST）1 及び QUATEST 3 の運営方法は国際的な運営方法に準拠しており、現在 IECEE/CB スキームへの申請に向けて準備を進めている。

②　各成果の達成

プロジェクト期間終了までに、すべての成果を高いレベルで達成することにより、プロジェクト目標は達成されるであろう。STAMEQ は既に多くの国際的な活動に参加してきている。認定局（BOA）、QUACERT 及びベトナム標準品質機関（VSQI）はプロジェクト活動によりベトナムの産業界のみならず、関連国際機関からも認知され信頼度が向上してきている。QUATEST 1 及び QUATEST 3 の試験能力は計画どおり強化されてきている。製品認証能力や、試験の信頼性は本邦研修やセミナー、専門家による技術指導等により向上しつつある。

４－１－３　効率性

プロジェクトの効率性に関しては、次に述べるように投入とアウトプットの関係から評価して高いと評価できる。

①　専門家の派遣

長期専門家及び短期専門家の派遣は、その派遣数、専門性及び能力等から評価して適切

であった。当初計画に加えて、C/P からの強い要望と中間評価レビュー時の提言により電気試験及び IECEE/CB スキーム に熟知した長期専門家の派遣が実現した。

一般的にこの分野の専門家を確保することは困難であるが、チーフ・アドバイザーの努力により適切な分野において高い技術レベルを有する専門家を確保することができた。

② 研修及び技術指導

電気・電子製品分野における基準認証制度政策立案能力強化のために、プロジェクトにおいて STAMEQ のスタッフに対して適切な研修や技術指導が提供されたことは非常に高い評価を得ている。彼らは日本の認定制度や製品認証、試験の方法について集中的に研修を受けた。

③ 認定能力の向上について

成果 3 の認定能力の向上については、日本での研修及び技術指導は一般的なノウハウ提供をめざしたものではなく、ベトナムのニーズに基づいたものであった。特に“EMC 試験所認定”は高い評価を得た。本邦における研修後、BOA のアセッサー及びスタッフは学んだ知識を自らの活動に生かした。 JICA 短期専門家による“計測の不確かさ”セミナーも高い評価を得た。

④ プロジェクト目標の達成

プロジェクト期間中、おのおのの成果が高いレベルで達成されることにより、プロジェクト目標は高いレベルで達成されるであろう。プロジェクトのおのおのの成果は、STAMEQ 及び関連諸機関の基準認証制度に対する理解や重要度の認識につながるであろう。

STAMEQ は多くの国際活動に参加してきている。BOA、QUACERT 及び VSQI はプロジェクト活動によりベトナムの産業界のみならず、関連国際機関からもその認知度や信頼度が向上してきている。QUATEST 1 及び QUATEST 3 の試験能力は計画どおり強化されてきている。製品認証能力や、試験の信頼性は本邦における適切な C/P 研修、セミナー、専門家による技術指導等で向上しつつあることを確認した。

４－１－４　インパクト

プロジェクトの上位目標は他の条件が変わらなければ達成されるであろう。プロジェクト実行による次のようなポジティブなインパクトを確認した。これまでのところ、ネガティブなインパクトは確認されていない。

① 上位目標の達成

プロジェクトの完了により、ベトナムの基準認証制度及び運営は強化されるであろう。この傾向は、プロジェクト終了後も続くものと思われ、結果として電気・電子製品の品質は向上し、消費者の安全性は確保されるものと思われる。

② ポジティブなインパクト

QUATEST 1 及び QUATEST 3 に関し、電気・電子関連以外のラボにも改善されたマネージメント・システムを導入するという動きがみられ、プロジェクト実行により得た知識、経験を QUATEST 内の他の分野に適用するというポジティブなインパクトが観測された。

③ 想定外のポジティブなインパクト

想定外のインパクトが見られた。STAMEQ 内の機関のひとつではあるが、今般のプロ

ジェクトの C/P ではない Vietnam Metrology Institute（VMI；計量機関）がプロジェクトが主催するセミナーに興味をもち、各分野から 9 人の科学者（電気・電子、容量、周波数、化学、質量、硬さ、など）が「計測の不確かさに関するセミナー Tutorial Seminar（Advance Course + Basic Course）」に参加した。VMI は計量・計測分野の国家標準を維持しており、QUATEST 1、QUATEST 3 の試験能力及び BOA の認定範囲の拡大には、技術的側面において VMI の役割があると考えている。それは、現在 VMI が QUATEST 1 及び 3 の試験機材の定期的な校正を行っていること、また、BOA の認定にあたっては、試験所認定の技術審査を VMI の科学者が担当しているということが所以である。

４－１－５　持続性

政策面、制度面、技術面については問題なく、財政面については機器の維持管理費用の予算は確保され、IECEE/CB スキームに加盟するための費用を獲得する予定であることから、プロジェクトの持続性は高いといえる。

①　政策面

ベトナムは 2007 年 1 月の WTO 加盟に伴い、STAMEQ を中心に基準認証関連法の整備を進めているほか、貿易への技術障壁を除去し、海外市場、海外直接投資の要求を満たすべく、基準認証分野の取り組みを強化しており、このトレンドは将来においても変わらず、政策的にも支持されるものと考えられる。

②　制度面

STAMEQ 及び関連諸機関の所掌は、プロジェクト終了後も大きな変化はなく、プロジェクト実施を通じ基準認証に係る能力が向上した各機関により、電気・電子製品における基準認証制度は高いレベルで維持され、プロジェクトでの成果を維持することが可能であると判断される。

③　財政面

STAMEQ 及び基準認証関連諸機関は、試験機器のメンテナンス費用などを確保しており、また IECEE/CB スキームに加盟するための費用を獲得する予定であり、おおむね自立的活動が行える財政基盤を有するであろうと思われる。

既存の試験機器及び今回 JICA から供与された試験機器のメンテナンス費用については、QUATEST 1 及び QUATEST 3 ともに予算を確保しているとのことである。ただ、試験機器の校正費用について、QUATEST1 では予算が確保されているものの、QUATEST 3 では予算が確保されておらず、今後の予算確保が期待される。

また、IECEE/CB スキームについては、同スキームに加盟することで、プロジェクトの成果をより高いレベルで発現することに繋がる。STAMEQ は、IECEE/CB スキーム の NC（National Committee member）に加わるための予算を獲得する見込みである。

④　技術面

技術的には持続性は高いといえる。本プロジェクト期間中、QUACERT、QUATEST 1 及び QUATEST 3 の製品認証、テスティングのためのマニュアルは国際要求事項に従って見直され、最新の状態に保たれている。移転された技術の持続性は高いと認められる。

４－２　結　論

プロジェクトはこれまで顕著な進捗を見せており、残り 5 カ月間のプロジェクト期間をもって目標は十分に達成されるであろうことが確認された。

本プロジェクトの実施により、電気・電子製品における基準認証制度（基準認証政策、規格開発、認定、認証、試験）の運営が強化され、整備体制も整いつつある。これは、STAMEQ 及び関連諸機関で同分野の重要性が十分認識され、理解が深まってきたことが大きい。このプロジェクト期間中、STAMEQ は基準認証関連の国際的な活動に積極的に参加してきた。BOA、QUACERT 及び VSQI はプロジェクトを通じ、ベトナム産業界及び関連国際機関からおのおのの活動について認知されるようになり、信頼も得るようになってきている。QUATEST 1 及び QUATEST 3 の試験能力は計画どおり強化された。C/P の本邦研修、セミナー、専門家による技術支援等によりベトナムの製品認証能力やその信頼性は向上してきている。以上のことから、プロジェクト目標は終了時までに高いレベルで達成が見込まれるものと結論づける。

評価 5 項目	評価
妥当性：	高い
有効性：	非常に高い
効率性：	高い
インパクト：	いくつかのポジティブ・インパクトあり
持続性：	高い

第５章　提言・教訓

５－１　実施プロセスに関する提言

①　上位目標の指標を入手するための調査

上位目標の指標として「電気電子製品に関する（STAMEQ に対する）苦情件数」「国内製造メーカーからの電気電子製品の輸出額」「市場における（強制 13 品目の）CR マークの付与率」を設定している。これらの数値をプロジェクト期間内に確実に入手するために、体制を整える必要がある。

②　JICA 専門家に指摘された不適合事項への対応

CB スキームへの申請をするためには、複数の JICA 専門家が QUACERT, QUATEST 1, QUATEST 3 に対して指摘した不適合事項へ対応する必要がある。

③　QUATEST 1 と QUATEST 3 との交流の促進

QUATEST 1、QUATEST 3 の試験機関としての能力を向上させるため、両機関は更なる技術的な交流を図る必要がある。

④　CB スキームへの申請準備

CB スキームへの申請準備として、以下の点を実施すべきである。

・CB スキーム申請へのタイムスケジュール
・製品における部品の要求事項への対応
・CB スキーム申請費用、加入費用、年会費の予算確保

５－２　持続性及び今後の協力に向けた提言

①　CB スキームへの申請と不適合事項への対応

プロジェクト終了後に、QUACERT を国内認証機関（NCB）として、QUATEST 1、UATEST 3 を CB スキーム試験所（CBTL）として、即座に CB スキームへの加入申請を行うことが望まれる。また、ベトナム側は CB スキームの評価チームによる不適合事項へ対応するため、短期間のフォローアップを望んでいた。この点については、フォローアップ実施の可否について日本側で検討する必要がある。

②　機材の校正費用の予算確保

QUATEST 1、QUATEST 3 は、機材の定期的な校正に対する費用を予算として確保しておく必要がある。

③　13 品目に関する継続的な市場調査

強制 13 品目についての市場調査は、基準認証制度を管轄する STAMEQ においては重要な事項であるため、継続的に調査を実施できるよう体制を整えるべきである。

④　EMC 規制の周知徹底

2013 年 6 月より、家電 7 製品に対する EMC 規制が始まる。規制開始当初は混乱が予想されるため、事前に周知広報活動を積極的に行うことが望まれる。

⑤　13 品目における電気安全試験の規格情報の準備

13 品目における電気安全試験の規格情報としては、共通事項（PART 1）と特別事項（PART 2）とに分かれているが、ベトナムが採用している両者の規格発行年数が異なっていることもあり、製造メーカーが PART 1 を参照できていないという問題が発生している。そのため、適切

に PART 1 における規格情報を提供できるようにする必要がある。

⑥　JICA 研修の適切な活用

プロジェクト終了後も STAMEQ は JICA 研修を受講することができる。今後も継続的に JICA 研修を受講して能力向上を図ることが望まれる。

５－３　教　訓

①　本邦研修の有効な活用

基準認証分野では、日本における専門家のリソースがかなり限定されている。そのような分野においては、課題別研修及びテーラーメードの本邦研修を多く活用して能力向上を図るべきである。

②　日本側関係機関による支援の重要性

本プロジェクトでは、基準認証分野における日本側の関係機関の多大な支援により目標達成がなされた。特に専門家のリソースが少ない分野では、日本側関係機関と JICA、C/P との関係を継続的に維持することが望まれる。

③　基準認証プロジェクトの継続性

基準認証分野において重要なことは、継続的に運用できるマネジメント体制である。その他の分野においても継続性を意識したマネジメント体制を構築することが望まれる。

５－４　プロジェクトの延長やフォローアップの検討

本調査の結果、プロジェクト期間内にプロジェクト目標が達成される見込みであることが確認できたため、プロジェクト期間の延長は不要であると判断した。

一方、プロジェクトが 2013 年 4 月に終了したのち、さほど間をおかず STAMEQ が CB スキームへの加入申請を行うことが期待されている。そして、加入申請後に CB スキームを管轄している IECEE から審査チームが QUACERT、QUATEST 1、QUATEST 3 を訪問し、いくつかの不適合事項を指摘される可能性は排除できない。その不適合事項への対処について協力期間内に予想し、対策を立てること、また、協力終了後にベトナム側だけで行うのは現実的に困難であり、実際に今次調査において各機関からも不適合事項へ対応するためのフォローアップの要望が挙げられた。

これまで本プロジェクトにおいて CB スキームへ加入するための準備を支援してきたこともあり、各機関がこの不適合事項への対応ができないことにより CB スキームへの加入が実現しないのは望ましくないと判断される。

ついては今後、STAMEQ からフォローアップの要請が正式に挙がってきた場合、フォローアップとして不適合事項に対する是正対応を実施するか検討を要する。

第６章　調査団所見

６－１　団長所感

プロジェクト終了まで約5カ月という時点で実施した今回の終了時評価においては、STAMEQをはじめとするベトナム側と、専門家チームをはじめとする日本側の双方による尽力によって、プロジェクトが順調に進捗しプロジェクト目標を達成できる見込みであることが確認できた。C/Pチームと専門家チームの献身的なご支援により円滑な評価調査ができたことに感謝する次第である。なお、当調査団はちょうど1年前の中間レビューと全く同じメンバーで、中間レビュー時点からの成果の発現度合いの比較等が実際体感しやすかった点はまず申し上げておきたい。そのうえで、本調査におけるポイントをいくつか挙げたい。

（1）提言への関心とコミットメント

終了時評価では、残り5カ月のプロジェクト期間内に実施すべき項目として4点、プロジェクト終了後に実施すべき提言項目として6点を提言した。成果等の達成具合への関心もさることながら、協議においては提言事項に対する関心が高かった。特に、電気電子製品の市場調査のベースライン調査と今後の継続調査や、CBスキーム申請に向けた不適合指摘事項に対する是正措置とプロジェクト終了後の実際の申請後の是正措置等については、プロジェクト中・後を通じ着実に実施していく旨のコミットメントを得られたことを特筆すべき点とする一方、中間レビューの時点から指摘している市場調査については、早期の着手を期待するところである。全般的には、プロジェクト終了前実施事項については、専門家の指導が得られるうちにぜひ実施したいという意気込みがみられた。このモメンタムがぜひ生かされるよう期待したい。

（2）専門家リソースと事業運営の工夫

中間レビューの際にも指摘したところであるが、基準認証の分野は、専門家のリソースが非常に限定されていることが恒常的な課題となっており、この克服のために、日本国内関係機関の多大な協力の下、まず研修を充実させ、15の研修コースで、45名のC/Pを受け入れた。オーダーメードの国別研修に加え、既存の課題別研修を母体にオーダーメード部分を加えたプログラムを導入するなど、効率面での工夫もみられる。また、短期専門家により累次にわたり実施された「不確かさ測定セミナー」は好評を博し、提供したテキストが使われ、学んだことをC/Pが独自にワークショップを開いて広めるなど、短期専門家派遣の活動がその後も有効活用されている。長期専門家チームによるこれらのアレンジとフォローアップが、研修・短専技術移転成果を最大限に活用・展開するのに貢献したといえよう。そして、中間レビュー提言を受け遂に実現したCBスキーム申請準備体制整備指導に係る長期専門家の活動に関しては、専門家の豊富な知見と精力的な活動、それを貴重な機会と認識したC/P（特に試験機関）の貪欲な取り組みで、着実な能力向上がみられた。

（3）産業界との対話

STAMEQではウェブサイトを充実し官報等も活用して、規制や規格・試験等の情報提供に努めており、研修にも産業界を招いて当プロジェクト等で得た新たな知識の裨益にも配慮

がみられる。他方、産業界からみれば情報へのアクセスがまだ不足しているであろうと思われる面も散見され、規制等の早い段階での周知徹底、特に真に必要とされる対象層への働きかけなどの必要性については、チーフアドバイザーも事あるごとにC/P側に働きかけているところである。産業界の視点では規制というものは行政側の想定以上に影響力のあるものであることが更に理解される必要がある。プロジェクト実施分野に関わる部分としては、2013年6月に導入されるEMCに係る新規制があり、提言の中でも一方的・拡散的な情報提供ではなく、影響が実際にあると見込まれる製造・貿易業者への説明会等、対話の場をもつ工夫を述べているところである。この姿勢は、適合性評価・基準認証分野や、更に広く民間セクター開発分野で、今後形成されると思われる案件にとっても重要な視点であることは言うまでもない。日本の視点からは、日系企業のニーズや阻害要因の除去への貢献という観点も引き続き十分取り込んで、今後広く基準認証分野でも案件形成が検討されていくことを期待したい。

（4）持続発展性

教訓のところにも盛り込んだ点であるが、基準認証・適合性評価の考え方そのものが、計画・マニュアル等を整備しつつ、実施・モニタリング・評価を行っていく体制整備そのもの、すなわち持続発展性確保の体制づくりそのものであり、プロジェクトが正しく実施されていれば自ずと持続発展性の確保の可能性は高いことになる。また、強制品目試験等も含み、法に基づき実施する活動、すなわち本来業務そのものであることから、機材の活用度合いや機関としての能力向上の意義も高く、この点も持続発展性につながりやすい。いずれにしても、基準認証の考え方や持続発展性確保への取り組みは、他の行政体制整備に係るあらゆる案件にも参考になることは関係者からも多く指摘あることから、他のプロジェクトとの情報交換や本部レベルでの知識体系化は有用であろう。

６－２　基準認証政策団員所感

今回のプロジェクトの評価について、要点は本文でよくまとめられているので、関連する点で気のついたことだけを所感としてまとめておきたい。

（1）関係機関の調整

今回プロジェクトにおいては、関係機関数がベトナム側だけでなく日本側も非常に多かった。これをまとめる機能は、日本国内ではJICA担当部局が直接担うこととなったが、内容的な複雑さから、チーフアドバイザーをはじめとする在ベトナム関係者の努力が非常に大きかったといえる。

基準認証の課題を扱うといっても、国際的にどう関連し関係機関でどのような連携が必要かなど基本的な枠組みに関連した理解と、この分野のように日本国内での人的資源が制約されている状況という、素直な実施が難しいプロジェクトであった。

逆にいえば、その調整がなければ、ここまで円滑な実施は難しかったと容易に想像でき、関係機関の多いプロジェクトについては、日本国内における調整機能をもつ中心的な組織が存在することが望ましいといえよう。

（2）基準認証案件の評価の難しさ

基準認証案件は、規制と深く関連し、うまくいかなければ製品等の取引が停滞し、不満が生じて利害関係者の意見が出てくるという状況が生まれるが、うまく計画され実施上の不都合が生じないと、不都合な状態が想像されず現状が当然のように認識されて、そのありがたさを認知してもらえないということになりがちな課題である。

今回協力開始時期に日本の産業界の要望のひとつが基準の不整合（規制で古い規格使用）回避であり、また、基準を基にした評価が経済活動に合うよう整合的に実施できなければ、容易に支障が生じることとなる。

今回対象とした分野については、国際規格や国際 MRA をうまく取り入れ、それらを適切に実施できるようにということを基本方針として協力しており、達成 = 問題がない状態に入ったといえよう。

調査期間の後半で関係機関において、別の分野でいくつか問題が生じている状況も聞かれ、裏を返せば積極的評価の得られにくい状態であることは、それ自体良い評価を受けていると受け止めるべきことと考えられる。

付　属　資　料

１．協議議事録（M/M）

MINUTES OF MEETINGS
BETWEEN
THE JAPANESE TERMINAL EVALUATION TEAM
AND THE AUTHORITIES CONCERNED OF THE SOCIALIST REPUBLIC OF VIET NAM
ON THE JAPANESE TECHNICAL COOPERATION FOR THE PROJECT ON STRENGTHENING THE SYSTEM AND OPERATION ON STANDARDS AND CONFORMANCE

The Japanese Terminal Evaluation Team (hereinafter referred to as "the Team"), organized by the Japanese International Cooperation Agency (hereinafter referred to as "JICA") and headed by Mr. Toru HOMMA, visited the Socialist Republic of Viet Nam from 15 November to 1 December, 2012. The purpose of the evaluation team is to assess the achievements made during the 3 years and 5 month's cooperation period and to make recommendations for the Project on Strengthening the System and Operation on Standards and Conformance (hereinafter referred to as "the Project").

During evaluation period, both the Team and concerned authorities of the Government of the Socialist Republic of Viet Nam (hereinafter referred to as "both sides") had a series of discussions and exchanged views on the Project. Both sides jointly monitored the activities and evaluated the achievements.

As a result of the discussions, both sides agreed upon the matters referred to in the Joint Evaluation Report documents attached hereto.

Hanoi, 28 November, 2012

Mr. Toru HOMMA
Leader
Japanese Terminal Evaluation Team
Japan International Cooperation Agency
Japan

Mr. Tran Van Vinh
Deputy Director General,
Directorate for Standards, Metrology and Quality,
Ministry of Science and Technology
Socialist Republic of Viet Nam

Mr. Vu Xuan Thuy
Director,
Bureau of Accreditation,
Ministry of Science and Technology
Socialist Republic of Viet Nam

JOINT EVALUATION REPORT
(TERMINAL EVALUATION)

THE PROJECT ON STRENGTHENING THE SYSTEM AND OPERATION ON STANDARDS AND CONFORMANCE

HANOI, 28 NOVEMBER 2012

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1. Outline of Evaluation

1-1. Objectives of Evaluation

The Japanese Terminal Evaluation Team organized by the Japan International Cooperation Agency (hereinafter referred to as "JICA") and headed by Mr. Toru HOMMA, visited the Socialist Republic of Viet Nam from 15 November to 1 December 2012, for the purpose of evaluating Japanese technical cooperation project "the Project on Strengthening the System and Operation on Standards and Conformance" (hereinafter referred to as the "Project") jointly with the evaluation team of the Vietnamese side. The objectives of the joint evaluation are the following:

a) To review the conducted activities and outputs of the Project;
b) To analyze the progress and achievements based on the Project Design Matrix (hereinafter referred to as the "PDM") and 5 Evaluation Criteria (relevance, effectiveness, efficiency, impact and sustainability) and to prepare a Joint Evaluation Report;
c) To hold a Steering Committee meeting to confirm the results of the evaluation through discussion; and
d) To provide recommendations for the Project.

1-2. Method of Evaluation

Performance of the Project was studied based on the verifiable indicators stated in the PDM and other relevant information collected through literature review and the discussions with officials of the governmental agencies involved in the Project (counterpart personnel; hereinafter referred to as the "C/P"), representatives of private companies and the development partners, and JICA Experts.

Both sides jointly conducted evaluation based on the 5 Evaluation Criteria (relevance, effectiveness, efficiency, impact and sustainability) the contents of which are stated below.

1-2-1. Criteria for Evaluation

(1) Relevance
Relevance refers to the validity of the purpose and overall goal of the Project in connection with the development policy of the Government of Viet Nam and the Official Development Assistance (ODA) policy of the Japanese Government, as well as the needs of the intended beneficiaries.

(2) Effectiveness
Effectiveness refers to the extent to which the expected benefits of the Project have been

achieved as planned, and examines whether the benefit was brought about as a result of the Project.

(3) Efficiency
Efficiency refers to the productivity of the implementation process, examining whether the input of the Project has been efficiently converted into the output.

(4) Impact
Impact refers to direct and indirect, positive and negative impact generated through the implementation of the Project, including the extent to which the overall goal has been or is expected to be attained.

(5) Sustainability
Sustainability refers to the extent to which the produced effects continue after the completion of the Project.

1-2-2. Sources of Information

The following sources of information were used in this evaluation:

(1) Documents agreed upon by both sides prior to and/or during the course of the Project implementation including:

- Record of Discussions (R/D);
- Minutes of Meeting (M/M);
- Project Design Matrix (PDM)[1]; and
- Plan of Operation (PO)[2];

(2) Records of inputs and activities of the Project;

(3) Data and statistics which indicate the degree of the achievement of the outputs and Project purpose; and

(4) Interviews to the C/P, JICA Experts, and representatives of private companies and the development partners.

[1] Annex 1
[2] Annex 2

1-3. Members of Evaluation Tean

Vietnamese side:

Ms.Trieu Thi Bao Hoa	Deputy Head, Asia Africa Division, International Cooperation Department, Ministry of Science and Technology (MOST)

Japanese side:

Mr. Toru Homma	Senior Advisor (Private Sector Development: Trade, Investment and Industry), JICA
Mr. Mitsunori Nishimoto	Chief Executive, International Accreditation Japan, National Institute of Technology and Evaluation (NITE)
Mr. Wataru Maezaki	Assistant Director, Private Sector Development Division, JICA
Ms. Yumi Shindo	Evaluation Consultant

2. Outline of the Project

2-1. Project Design Matrix (PDM)

The PDM (modified in August 2012 at the Joint Coordinating Committee) is attached as Annex 1. The PDM has 4 major items called Overall Goal, Project Purpose, Outputs and Activities of the Project.

(1) Overall Goal: The goal achieved by the contribution of the Project in 3 to 5 years after its completion

Overall Goal

The quality of electrical and electronic equipment manufactured in Viet Nam is improved, and the consumers' safety is ensured.

(2) Project Purpose: The purpose achieved by the direct contribution of the Project outputs by the end of the Project period

Project Purpose

The system and operation of the STAMEQ and other related organizations on standards and conformance in the field of electrical and electronic equipment are strengthened.

(3) Outputs: The outputs brought about by the results of the Project activities

Outputs of the Project

Output 1: The capacity of planning the standards and conformance policy in the field of electrical and electronic equipment is strengthened.

Output 2: The capacity of developing standards and regulations in the field of

electrical and electronic equipment is improved.

Output 3: The capacity of accreditation is improved.

Output 4: The capacity of certification in the field of electrical and electronic equipment is improved.

Output 5: The capacity of testing in the field of electrical and electronic equipment is improved.

(4) Activities: The activities being implemented by C/P under the support of JICA Experts/Consultants

Activities of the Project

1-1 To provide training and technical advice to staff members of STAMEQ about planning the standards and conformance policy.

1-2 To hold seminars regarding the standards and conformance policy by JICA experts and ex-JICA trainees.

2-1 To provide training and technical advice for developing standards and regulations in Viet Nam based on checking the terms of IEC.

3-1 To provide training and technical advice for accreditation in the field of electrical and electronic equipment including preparation for PAC MLA membership for products program.

4-1 To provide training and technical advice for certification in the field of electrical and electronic equipment including preparation for IECEE CB scheme membership

5-1 To provide training and technical advice for testing in the field of electrical and electronic equipment.

3. Achievements of the Project

3-1. Inputs

Inputs from both the Japanese and Vietnamese sides, since its inception in November 2009 till November 2012, have been executed mostly as planned.

3-1-1 Japanese Si

(1) JICA Experts

A total of 19 JICA experts have been assigned since the inception of the Project as listed in Annex 5.

(2) Equipment

Much machinery and equipment were provided for the expert activities, as listed in Annex 6. All of them are properly utilized

(3) Counterpart Personnel (C/P) Training in Japan

A total of 45 Vietnamese C/P were sent to Japan from 2009 to 2012 as listed in Annex 7.

(4) Local cost

Local cost was borne by the Japanese side as of November 2012.

3-1-2 Vietnamese Side

(1) Counterpart Personnel

STAMEQ has allocated Project Director, Project Manager, project administrative personnel in the International Cooperation Dept. and C/P in the QUACERT, QUATEST 1, QUATEST 3, VSQI and BOA

(2) Project Offices

The project office was set in STAMEQ building in Hanoi, and for Ho Chi Minh it was set in QUATEST 3.

(3) Necessary budget for the implementation of the project

Necessary administrative and operational expenses have been prepared by the Vietnamese side.

(4) Necessary installation of testing equipment

Necessary installation of testing equipment has been conducted by the Vietnamese side.

3-2. Activities

Most of activities of the Project, as stated in Plan of Operation (PO) and PDM[3] have been conducted.

3-3. Outputs

It is confirmed that the Project has so far fulfilled the following outputs along with the plan stated in PDM. The degrees of achievement are shown under each output.

Output 1: The capacity of planning the standards and conformance policy in the field of electrical and electronic equipment is strengthened.

Indicators
1-1 Number of seminars held by JICA experts and ex-JICA trainees
1-2 Degree of understanding of C/P about standards and conformance policy in the field of electrical and electronic equipment

Indicator 1-1

Sufficient number of seminars has been held for internal share of ideas on standards and conformance. In total, 2 seminar was organized in Hanoi and 1 seminar in Ho Chi Minh City in 2010; 1 seminar in Ho Chi Minh City in 2011; 1 seminar in Hanoi and 2 seminars in Ho Chi Minh City in 2012; There will be 1 seminar each in Ho Chi Minh City and Hanoi scheduled in the 1st quarter of 2013. The content of the seminars is mainly about "Measurement Uncertainty" from the basic level to the advanced level. The total number of participants of the seminars is 624 as of November 2012. In addition, ex-JICA trainees from QUATEST 1, QUATEST 3 and BOA provided some seminars to the staffs of QUATEST 3 and to private sector.

[3] PDM was modified at the JCC on August 2012.

Indicator 1-2

Degree of understanding of C/P about standards and conformance policy in the field of electrical and electronic (hereinafter referred to as "EE") equipment is high. It was confirmed by the questionnaire and interviews that the Project has been enhancing and strengthening the capacity of planning the standards and conformance policy in the field of EE equipment.

The C/P training in Japan is functionally composed of three structural levels from the aspects of policy planning and implementation; the first level is designed especially for senior officials to acquire method of policy planning issues of the standards and conformance. After the training they could design a "Road Map" for their subordinates. The other two levels are designed to learn the method of action planning and implementation of the plans.

STAMEQ as a whole has been making an effort for introducing their activities and responsibilities to the industries to let them understand the importance of standards and conformance. For example, STAMEQ set up their web site which includes the announcement of their policies and planning related with standards and conformance, product testing, international standards and conformance news, claims from the industries, etc. They try to hear voices of the industries in the process of policy making and planning of the standards and conformance.

It was highly appreciated that the Project had offered the adequate technical training and advice to the staff of STAMEQ and other related organizations in terms of strengthening the capacity of planning standards and conformance policy in the field of EE equipment. They learned accreditation system of Japan, certification, testing etc. Some of the courses were not exactly associated with the trainees' duties, however, it was a good opportunity to understand the standards and conformance intensively.

In total Output 1 has been so far duly achieved though further efforts are desired for improvement.

Output 2: The capacity of developing standards and regulations in the field of electrical and electronic equipment is improved.

Indicators
2-1 Increase in the number of Viet Nam national standards(TCVN) based on the latest IEC standards

Indicator 2-1

The number of TCVN has been continuously increasing. There are around 6600 TCVN standards and among which about 492 standards are of the EE sector. 407/492 standards are

based on IEC standards (accounting for 82.7%). Not all the IEC standards are the latest since the budget is limited, however, they are renewed as the necessity arises. For the year 2008, 52 TCVNs (based on IEC standards) are developed, and 51 TCVNs in 2009, 57 TCVNs in 2010 are developed, and 45 TCVNs in 2011. 92 TCVNs are being developed in 2012 and will be published in 2013. For 2013 plan, there will be 80 TCVNs being developed. . Thus the indicators present proper achievement of the Output 2.

Vietnamese National Committee for IEC standardization is being reformed and Vietnamese standard development would become more internationalized.

Output 3: The capacity of accreditation is improved.

Indicators
3-1 Increase in the number of testing items/requirements of electrical and electronic testing laboratories and EMC testing laboratories accredited by BOA
3-2 Status of PAC MLA application preparation for product program

Indicator 3-1

The scope of accreditation has been enhanced by using the JICA provided equipment. As for EMC testing, by using the equipment provided by JICA, EMC Testing Lab is now able to expand the scope of testing to the frequency range of 1-18 GHz according to CISPR 22:2006. As for EE testing lab, they now fully meet the requirements for testing all 13 mandatory products and other similar products.

Indicator 3-2

BOA had been a member of PAC MLA with a sub-scope of Management System Sector only. However, they obtained a member status with a sub-scope of Product Certification Sector as well. The application was submitted in April 2011, the assessment was conducted in November 2011 by an international evaluation team and by them BOA was accepted in June 2012.

The training and technical advice have been provided adequately. Output 3 was successful that the training and the technical advice throughout the project were not just to learn general know-how, but also to focus on the actual needs of Viet Nam. Especially the program of "EMC Testing Laboratory Accreditation" was much appreciated. After the training in Japan the BOA assessors and staff have been applying their knowledge.

The BOA has been more recognized by the industry. The industry and laboratories have been asking BOA to strengthen their accreditation activities, especially in the fields of food, EE, construction, mechanical, feed and fertilizer.

Output 4: The capacity of certification in the field of electrical and electronic equipment is improved.

Indicators

4-1 Accumulated number of product certificates by QUACERT 4-2 Status of IECEE CB scheme application preparation

Indicator 4-1

Number of product certificates have been accumulated at an accelerated pace. The trend of number of product certificates issued is as follows; total of 259 certificates (including 55 EE products) in 2009, total of 450 (88 EE products) in 2010, total of 450 (90 EE products) in 2011, and total of 621 (85 EE products) in 2012 as of October 2012.

Indicator 4-2

For the preparation of applying IECEE/CB Scheme, as for QUACERT the documentation is ready to submit. In order for QUACERT to become NCB and QUATESTs to be CBTLs, at first STAMEQ needs to join in the National Committee member of IECEE.

QUACERT has been appreciating for the detailed training and technical advice for the certification procedures on standards and conformance in the field of EE. As for training in Japan, they found that the practical part was the most effective. They experienced simulation of an actual pre-assessment in Viet Nam under the short-term experts' guidance.

Output 5: The capacity of testing in the field of electrical and electronic equipment is improved.

Indicators
5-1 Execution situation of test to 13 electrical and electronic appliance 5-2 Expansion of the accreditation scope for the EMC testing laboratory of QUATEST 3

Indicator 5-1

QUATEST 1 can execute tests on all (including scope and range) of the 13 mandatory EE appliances thanks to the equipment provided by JICA. Before the Project's start, QUATEST 1 was not fully capable of testing mandatory household products, however, their testing capability and capacity have been expanded to the similar EE appliances from those of 13 mandatory appliances. The testing services offered by QUATEST 1 in total have increased by 30% for the last 3 years including this year. The number of sample tests for EE products including 13 mandatory appliances has increased; about 5774 in 2009, 8478 in 2010, 8798 in 2011, 13500 at the end of October 2012. As for QUATEST 3, both the range and field of testing have been enhanced not only for 13 mandatory products but for similar products as well. At QUATEST 3, the number of sample tests for household appliances has tremendously increased; about 10 tests in 2009, 519 in 2010, 560 in 2011 and 650 in 2012 (confirmed by the time of Terminal Evaluation).

Indicator 5-2

As for EMC testing, with the provision of necessary testing equipment for EMC Testing Lab, QUATEST 3 has expanded the scope of testing to the frequency range of 1-18 GHz according to CISPR 22:2006, meeting the State Management Regulations as specified in the

Circular No. 31:2001/BTTTT (MOIC) and the Regulation No. QCVN 09:2012/BKHCN (MOST). In addition to the fact that the EMC Lab increases the scope of testing, the knowledge of the staff becomes more extensive.

According to the interview with the C/P, the long-term and short-term experts are very responsible and supportive for the Labs improving the testing capabilities. With the assistance from the long-term experts, the Electrical Testing Lab is preparing to meet the requirements to become CBTL. A series of seminars on "Measurement Uncertainty" held by JICA short-term experts was very much appreciated.

3-4. Project Purpose

Project Purpose: The system and operation of the STAMEQ and other related organizations on standards and conformance in the field of electrical and electronic equipment are strengthened.

Indicator
1. Improvement of capabilities of STAMEQ and other related organizations on standards and conformance as compared with international standards and recommendations

Indicator 1

It is found that STAMEQ and other related organizations show the notable improvement of their capabilities on standards and conformance as compared with international standards and recommendations. QUACERT, QUATEST 1 and QUATEST 3 have been operating the standards and conformance system following the international manner and they are now in the midst of preparing to participate in the IECEE/CB Scheme. By the end of the Project period, the Project Purpose will be achieved through the accomplishment of all the Outputs with consistence. STAMEQ has been participating more in the international activities of standards and conformance. BOA, QUACERT and VSQI have gained recognition and credibility by the Vietnamese industries and by the international related organizations through the activities of the Project.

Judging from the above, it is considered that the Project Purpose has been achieved at the highly satisfactory level.

3-5. Overall Goal

Overall Goal: The quality of electrical and electronic equipment manufactured in Viet Nam is improved, and the consumers' safety is ensured.

Indicators
1. Decrease in the number of claims caused by electrical and electronic equipment
2. Increase in the amount of export of domestic manufacturers in the field of electrical and electronic equipment
3. Increase in the share of CR marked products at designated marketplaces

With the accomplishment of the Project, the system and operation on standards and

conformance in Viet Nam is strengthened and this trend will continue even after the project period. The quality of EE products will be improved and thus the consumers' safety is ensured. Hence Overall Goal will be achieved in a certain period.

3-6. Implementation Process

It is confirmed that the implementation process of the Project has been generally appropriate. The following are the major observations.

(1) Most of the equipment have been provided, installed and being used frequently. At a time of Mid-term Review, there was a delay on provision of EMC testing equipment and also one of the antennas composing the equipment was broken. However, the delay was not very crucial to affect the project activities and the replacement of the antenna was done immediately by the Project which will not affect the activities of the project.

(2) Long-term experts have been dispatched as planned. Mr. Ishizaki as Chief Advisor (4/2010-36months) and Mr. Saito as Coordinator (4/2010-36months) have been dispatched almost throughout the project period. In addition to that, dispatch of a long-term expert, Mr. Ozaki (4/2012-12months) in the field of electrical testing and IECEE/CB Scheme is realized in response to the strong demand from the C/P and based on the recommendation at the Mid-term Review. The dispatch of the short-term experts in 2012 was conducted in August 2012. One of the purposes of the short-term experts was, together with the long-term expert, set the detail plan of activities to prepare for the IECEE/CB Scheme. They have conducted a pre-assessment of IECEE/CB Scheme application and the result of which was adopted in the long-term expert's activities and it was highly appreciated by the C/P.

(3) The technical transfer through C/P training in Japan, by short-term experts, and through seminars and workshops were highly appreciated and adequate. The relationship with JICA Experts and C/P was maintained at a good level.

(4) The implementation process of the Project has been reviewed and discussed at the Joint Coordinating Committee. 1st JCC was set in June 22nd 2010, 2nd in June 14th 2011, 3rd in November 17th 2011, and 4th in August 15th 2012. There are many informal ad-hoc meetings between the long-term expert and C/P frequently. As for decision-making, STAMEQ and BOA make every effort to allocate the Project C/P adequately and call for meetings when necessary despite of their tight human resource.

4. Evaluation Based on 5 Evaluation Criteria

The evaluation based on 5 Evaluation Criteria is presented below.

4-1. Relevance

The relevance of the Project remains high because of the following reasons.

- The standards and conformance policy remains relevant in the relationship among MOST, STAMEQ and other related organizations.
- The political and economic policy remains relevant in Viet Nam.
- The Project remains in line with the Japanese ODA policy in general and for Viet Nam.
- The role of STAMEQ and other related organizations in Viet Nam remains and will remain the same during the course of the project.
- The Project target is STAMEQ and other related organizations and they are still relevant and will be expected to remain relevant in the next 5 years.
- Japan has sound technological and empirical advantages in strengthening the system and operation on standards and conformance and for that the Project's appropriateness is high.
- Through the C/P training, seminars and technology transfer by the experts, the target group (staff of STAMEQ and other related organizations) have gained the meaning of the system and operation on standards and conformance, improved their standards and conformity assessment both systematically and technically. Therefore, the Project approach has remained in line with the target group.
- The Project Purpose and the Overall Goal are relevant with the beneficiaries' needs.

4-2. Effectiveness

It is considered that effectiveness of the Project is very high because of the following reasons.

- STAMEQ and other related organizations show the notable improvement of their capabilities on standards and conformance as compared with international standards and recommendations. QUACERT, QUATEST 1 and QUATEST 3 have been operating the standards and conformance system following the international manner and they are now in the midst of preparing to participate in the IECEE/CB Scheme.
- By the end of the Project period, the Project Purpose will be achieved through the accomplishment of all the Outputs in a consistent manner. STAMEQ has been participating more in the international activities of standards and conformance. BOA, QUACERT and VSQI have gained recognition and credibility by the Vietnamese industries and by the international related organizations through the activities of the Project. The capacity of QUATEST 1 and QUATEST 3 has been enhanced as planned. The capacity of certification of the products and the credibility of testing has been improved through the adequate C/P training in Japan, seminars and technical advice by experts.

4-3. Efficiency

The degree of efficiency of the Project is assumed to be high judging from performances of inputs and outputs described below.

- The assignment of Experts (long-term and short-term) has been appropriate in terms of their number, expertise and capabilities. In addition to the original plan, dispatch of a

long-term expert in the field of electrical testing and IECEE/CB Scheme is realized in response to the strong demand from the C/P and based on the recommendation at the Mid-term Review. By Chief Advisor's countless effort, despite the general difficulty on securing an expert in this area, the very right person in the right position was found. The long-term and short-term experts are very responsible and support the Labs improving the testing capabilities. With the assistance from the long-term experts, the Electrical Testing Lab is preparing to meet the requirements to become CBTL. The dispatch of the short-term experts in 2012 was delayed from April 2012 to August 2012 due to the personnel arrangement difficulties in Japan.

- It was highly appreciated that the Project had offered the adequate technical training and advice to the staff of STAMEQ in terms of strengthening the capacity of planning standards and conformance policy in the field of EE equipment. They learned accreditation system of Japan, certification, testing etc. Some of the courses were not exactly associated with the trainees' duties, however, it was a good opportunity to understand the standards and conformance intensively. The training program was designed to formulate plans to establish industrial driven systems in cooperation with governmental support, which can properly lead international standards activities mainly done by the industrial sectors in the respective countries. They also learned how to develop a long-term action plan for the development of standards.
- After the trainings, seminars and receiving technical advices, C/P has applied their newly acquired knowledge at their organizations. Besides, C/P has develop their own training program, organized the C/P led seminars and shared acquired knowledge as trainers with their colleagues, other institutes and industries.
- As for Output 3 the training and the technical advice throughout the project were not just to learn general know-how, but also to focus on the actual needs of Viet Nam. Especially the program of "EMC Testing Laboratory Accreditation" was very much appreciated. After the training in Japan the BOA assessors and staff have been applying their knowledge. A series of seminars on "Measurement Uncertainty" held by JICA short-term experts was very much appreciated.
- Within the Project period, the Project Purpose will be achieved through the accomplishment of Outputs with consistence. The standards and conformance policy has been well notified and understood by the STAMEQ and other related organizations through the outputs of the Project. STAMEQ has been participating more in the international activities of standards and conformance. BOA, QUACERT and VSQI have gained recognition and credibility by the Vietnamese industries and by the international related organizations through the activities of the Project. The capacity of QUATEST 1 and QUATEST 3 has been enhanced as planned. The capacity of certification of the products and the credibility of testing have been improved through the adequate C/P training in Japan, seminars, workshops, and technical advice by experts.
- STAMEQ has allocated Mr. Tran Van Vinh as Project Director and Dr. Ngo Tat Thang as Project Manager. After the retirement of Dr. Thang, Dr. Vu Van Hong became in

charge. The replacement of the Project Manager did not affect the Project. In addition, the head of EMC Lab had left QUATEST 3, however, the new Head, who had trained in Japan, was assigned without any delay.

4-4. Impact

As mentioned in 3-5, the Overall Goal of the Project will be achieved in the sense that if the other conditions remain the same. It is also found that implementation of the Project has some positive impacts as seen below. No negative impacts have been observed.

- With the accomplishment of the Project, the system and operation on standards and conformance in Viet Nam is strengthened and this trend will continue even after the project period. The quality of EE products will be improved, thus the consumers' safety is ensured.
- The Important Assumptions will remain the same after the completion of the Project. There is a positive impact observed to other laboratories of QUATEST 1 and QUATEST 3, they have also introduced the improved management system to their own systems in other sector than the EE field.
- After the trainings, seminars and receiving technical advices, C/P has applied their newly acquired knowledge at their organizations. Besides, C/P has develop their own training program, organized the C/P led seminars and shared acquired knowledge as trainers with their colleagues, other institutes and industries. This is one of the greatest impacts from the Project point of view.
- Another unexpected impact was observed in the Viet Nam Metrology Institute (VMI). VMI had participated in the project. 9 scientists from each sector laboratory (EE, Volume, Frequency, Chemical, Mass, Hardness...) had participated in the Seminar, "Tutorial Seminar on Measurement Uncertainty (Advance Course + Basic Course)". VMI keeps the national standards of metrology and they believe the improvement of testing capabilities of the QUATEST 1 and QUATEST 3 and improvement and expansion of accreditation scope of BOA have direct influence to VMI's responsibilities. VMI provides calibration for the testing equipment of QUATEST 1 and QUATEST 3 periodically. VMI's scientists will conduct in the technical part of assessment in the process of BOA's accreditation of laboratories.

4-5. Sustainability

It is considered that sustainability of the Project will be secured, although there are a few uncertain factors.

(1) Policy Aspect

It is confirmed that Vietnamese Government will continue to support improvement of the quality of EE equipment manufactured in Viet Nam.

(2) Institutional Aspect

It is confirmed that the STAMEQ and other related organizations maintain their achievement of the Project after the completion of the Project.

(3) Financial Aspect

STAMEQ and other related organizations would be financially sustainable after the completion of the Project as long as budget is secured. STAMEQ will get the budget for being NC (National Committee member) of IECEE/CB Scheme. QUACERT as NCB, and both QUATEST 1 and QUATEST 3 as CBTL, application fee, membership fee and annual due will be required for the sustainability of the Project.

Moreover, the maintenance of the existing testing equipment as well as provided equipment by JICA requires certain amount of the budget continuously. According to QUATEST 3, although they set 5% of their budget is for the maintenance of testing equipment that does not include the cost of periodical calibration. As for QUATEST 1, their budget is secured both for maintenance of the testing equipment and for calibration.

(4) Technical Aspect

Sustainability is high in terms of the technical aspect. The manuals for certification and testing activities of QUACERT, QUATEST 1 and QUATEST 3 have been revised and maintained to meet the international requirements during the course of this Project, and as long as they are applied, technology transferred will remain sustainable.

5. Conclusion

It is confirmed that the Project has shown significant progress and will achieve the Project Purpose within remaining 5 months of the Project period.

5 Evaluation Criteria	Evaluation
• Relevance:	High
• Effectiveness:	High
• Efficiency:	Very high
• Impact:	Some positive impacts
• Sustainability:	High

The standards and conformance policy has been well notified and understood by STAMEQ and other related organizations. STAMEQ has been participating more in the international activities of standards and conformance. BOA, QUACERT and VSQI have gained recognition and credibility by the Vietnamese industries and by the international related organizations through the activities of the Project.

The capacity of QUATEST 1 and QUATEST 3 has been enhanced as planned. The capacity of certification of the products and the credibility of testing have been improved through the adequate C/P training in Japan, seminars, workshops, and technical advice by experts.

Based on the above findings it is concluded that the Project will be finalized in April 2013 as scheduled.

6. Recommendations

6-1 Recommendations for the Remaining Period of the Project

(1) Implementing baseline survey for Overall Goal indicators by STAMEQ

Concerned parties of STAMEQ need to implement the baseline survey and market survey for 3 indicators for Overall Goal, namely: "Decrease in the number of claims caused by electrical and electronic equipment", "Increase in the amount of export of domestic manufacturers in the field of electrical and electronic equipment", and "Increase in the share of CR marked products at designated marketplaces". Furthermore, concerned parties of STAMEQ and other related organizations need to assign person(s) in charge for the baseline survey and market survey, and to implement the surveys by the end of the Project. Concerned parties of STAMEQ need to set up system to conduct these surveys periodically in the following years in a sustainable manner.

(2) Correcting non-conformity pointed out by JICA experts

JICA experts implemented technical advices on IECEE/CB Scheme to QUACERT, QUATEST 1 and QUATEST 3 from April 2012. They pointed out some non-conformity for QUATEST 1 and QUATEST 3, respectively. These authorities need to correct the non-conformity for applying IECEE/CB Scheme.

(3) Promoting technical communication between QUATEST 1 and QUATEST 3

For mutually improving the level of technique, QUATEST 1 and QUATEST 3 need to promote technical communication, for example, internal technical seminar organized by QUATEST 1 and QUATEST 3 about common technical issues.

(4) Preparing for applying IECEE/CB Scheme

To prepare for applying IECEE/CB Scheme, concerned parties of STAMEQ need to implement the following points:

- to share the time schedule for applying IECEE/CB Scheme among related authorities;
- to be prepared for conforming to requirements for components; and
- to secure the budget for IECEE/CB Scheme for application fee, membership fee and annual due.

6-2 Recommendations for the Period after the Project

(1) Application of IECEE/CB Scheme and appropriate correction of non-conformity

QUACERT as NCB and QUATEST 1 and QUATEST 3 as CBTLs are expected to make application for the IECEE/CB Scheme immediately after the Project ends, based on the preparation implemented in the Project and fully utilizing the knowledge and experience acquired during the Project. Furthermore, concerned parties of STAMEQ are encouraged to become Issuing NCB.

Vietnamese side requested short-term follow-up that provide guidance on corrective action of non-conformity to be instructed at the peer evaluation. The Japanese terminal evaluation

team suggested it might be worthwhile considering possibility to implement follow-up for this purpose after the Project period, because the corrective action is the most difficult process.

(2) Securing budget for regular calibration of the testing and measurement equipment

QUATESTs should make sustainable effort to secure the budget for regular calibration in the long run, in addition to what they are doing for securing budget for their maintenance cost.

(3) Continuous implementation of market survey on 13 mandatory products

It is necessary for concerned parties of STAMEQ to continue the market monitoring survey on 13 mandatory products and sample tests of the prevailing products in the market for the purpose of monitoring updated situation and measuring the achievement of Overall Goal.

(4) Thorough publicity of introduction of EMC regulation to stakeholders

STAMEQ set up their web site and publications which includes the announcement of their policies and planning related with standards and conformance, product testing, international standards and conformance news, claims from the industries, etc. However, for the smooth introduction of EMC regulation, concerned parties of STAMEQ are further encouraged to conduct briefing session for interest parties of the detail regulation for 7 household electric appliances to immediate stakeholders such as manufacturers and importers/exporters.

(5) Availability of referred older standard on 13 mandatory products

TCVNs used for 13 mandatory products refer to TCVN5699-1:2004 (corresponding to IEC60335-1:Ed.4.0). The latest version of TCVN5699-1:2010 corresponds to IEC60335-1:Ed.5.0. Therefore, TCVN5699-1:2004 needs to be available.

(6) Continuous utilization of and appropriate application for JICA Issue-based Training

STAMEQ and other related organizations may still have opportunities to send their personnel to JICA Issue-based Trainings on standards and conformance. Requirements for applicants stipulated in General Information (GI) documents of each training course should be carefully considered in order to select appropriate candidates. Application forms should be submitted in a timely manner.

7. Lessons Learnt

(1) Effective utilization and implementation of C/P training in Japan

Considering the difficulty to secure available experts on standards and conformance, the Project focused on maximum utilization of C/P training in Japan. It functioned well in particular:

i) Effective utilization of Issue-based Training (mainly theoretical part) in combination with tailor-made training (mainly practical part) as an unified training programme;

ii) Three-level structured training programme series from the aspects of policy planning and implementation; the first level is designed especially for senior officials to acquire method of policy planning issues of the standards and conformance. After the training they could design a "Road Map" for their subordinates. The other two levels are designed to learn the method of action planning and implementation of the plans.

(2) Japanese related organizations' generous support

Japanese professional organizations on standards and conformance have been supporting the Project by way of dispatching short-term experts and receiving C/P as a part of the training in Japan, despite difficulties to share their busy professional staff for the Project. For this purpose, it is considered important to maintain close relationship among Japanese related organizations, JICA and C/P organizations for securing scarce human resources. It is also worthwhile to note an unexpected positive impact of the Project, that is, the Project contributed for QUATEST 3 and a Japanese professional organization to make an agreement of collaboration.

(3) Nature of sustainability owned by project on standards and conformance

Basic nature of the standards and conformance is setting up sustainable management mechanism with Plan-Do-Check-Action cycle. It means a technical cooperation project on standards and conformance should have also basic nature of sustainability, which is the most important criterion. Furthermore, project on standards and conformance deals with legally mandatory functions of C/P organizations. Therefore the transferred skill and knowledge are most likely to be utilized in a sustainable manner.

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ANNEX 1

Project Design Matrix (PDM)

PROJECT NAME: Project on Strengthening the System and Operation on Standards and Conformance PROJECT DURATION: November 2009 – April 2013 (Three years and five months) Version: 1.1

TARGET AREA: Hanoi, Ho Chi Minh TARGET GROUP: Staff of Directorate for Standards, Metrology and Quality, Ministry of Science and Technology (STAMEQ) and other related organizations

Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumptions
Overall Goal The quality of electrical and electronic equipment manufactured in Viet Nam is improved, and the consumers' safety is ensured.	1. Decrease in the number of claims caused by electrical and electronic equipment 2. Increase in the amount of export of domestic manufacturers in the field of electrical and electronic equipment 3. Increase in the share of CR marked products at designated marketplaces	-Records of STAMEQ -Data published by Ministry of Industry and Trade -Market research	Priority of the Standards and Conformance policy in the Viet Nam government does not change substantially.
Project Purpose The system and operation of the STAMEQ and other related organizations on standards and conformance in the field of electrical and electronic equipment are strengthened.	1. Improvement of capabilities of STAMEQ and other related organizations on standards and conformance as compared with international standards and recommendations	- Records of the project activities - Report of STAMEQ and other related organizations	The organizational status related to the project does not change substantially.
Outputs 1. The capacity of planning the standards and conformance policy in the field of electrical and electronic equipment is strengthened.	1-1 Number of seminars held by JICA experts and ex-JICA trainees 1-2 Degree of understanding of C/P about standards and conformance policy in the field of electrical and electronic equipment	- Records of the project activities - Records of STAMEQ and other related organizations - Evaluation by JICA expert	The trained C/Ps remain in the activities of at STAMEQ and other related organizations within the scope of the Project.
2. The capacity of developing standards and regulations in the field of electrical and electronic equipment is improved.	2-1 Increase in the number of Viet Nam national standards(TCVN) based on the latest IEC standards	- Records of the project activities -Records of TCVN	
3. The capacity of accreditation is improved.	3-1 Increase in the number of testing items/requirements of electrical and electronic testing laboratories and EMC testing laboratories accredited by BOA 3-2 Status of PAC MLA application preparation for product program	- Records of BOA - The report of evaluation by PAC MLA	
4. The capacity of certification in the field of electrical and electronic equipment is improved.	4-1 Accumulated number of product certificates by QUACERT 4-2 Status of IECEE CB scheme application preparation	- Records of the project activities	
5. The capacity of testing in the field of electrical and electronic equipment is improved.	5-1 Execution situation of test to 13 electrical and electronic appliance 5-2 Expansion of the accreditation scope for the EMC testing laboratory of QUATEST 3	- Records of the project activities	
Activities	**Inputs**		
1-1 To provide training and technical advice to staff members of STAMEQ about planning the standards and conformance policy. 1-2 To hold seminars regarding the standards and conformance policy by JICA experts and ex-JICA trainees.	Viet Nam side 1. Counterpart personnel 1) Project Director 2) Project Manager	Japanese side 1. Dispatch of Experts 1) Chief Advisor 2) Coordinator	The C/Ps remain at STAMEQ and other related organizations or their appropriate successors are assigned.

2-1 To provide training and technical advice for developing standards and regulations in Viet Nam based on checking the terms of IEC. 3-1 To provide training and technical advice for accreditation in the field of electrical and electronic equipment including preparation for PAC MLA membership for products program. 4-1 To provide training and technical advice for certification in the field of electrical and electronic equipment including preparation for IECEE CB scheme membership. 5-1 To provide training and technical advice for testing in the field of electrical and electronic equipment.	3) Full-time Counterpart personnel 4) Supporting staff 2. Project Office in Hanoi and Ho Chi Minh 3. Necessary budget for the implementation of the project 4. Necessary installation of testing equipment	3) Other relevant fields 2. Training of counterpart personnel in Japan 3. Provision of testing equipment	**Pre-Conditions** The policy toward to strengthen on standards and conformance does not change.

Note: "other related organizations" include VSQI, BOA, QUACERT, QUATEST 1, and QUATEST 3.

ANNEX 2

Plan of Operation (PO)

Title of the Project

Project on Strengthening the System and Operation on Standards and Conformance

Project Purpose

The system and operation of the STAMEQ and other related organizations on standards and conformance in the field of electrical and electronic equipment are strengthened.

Operational period

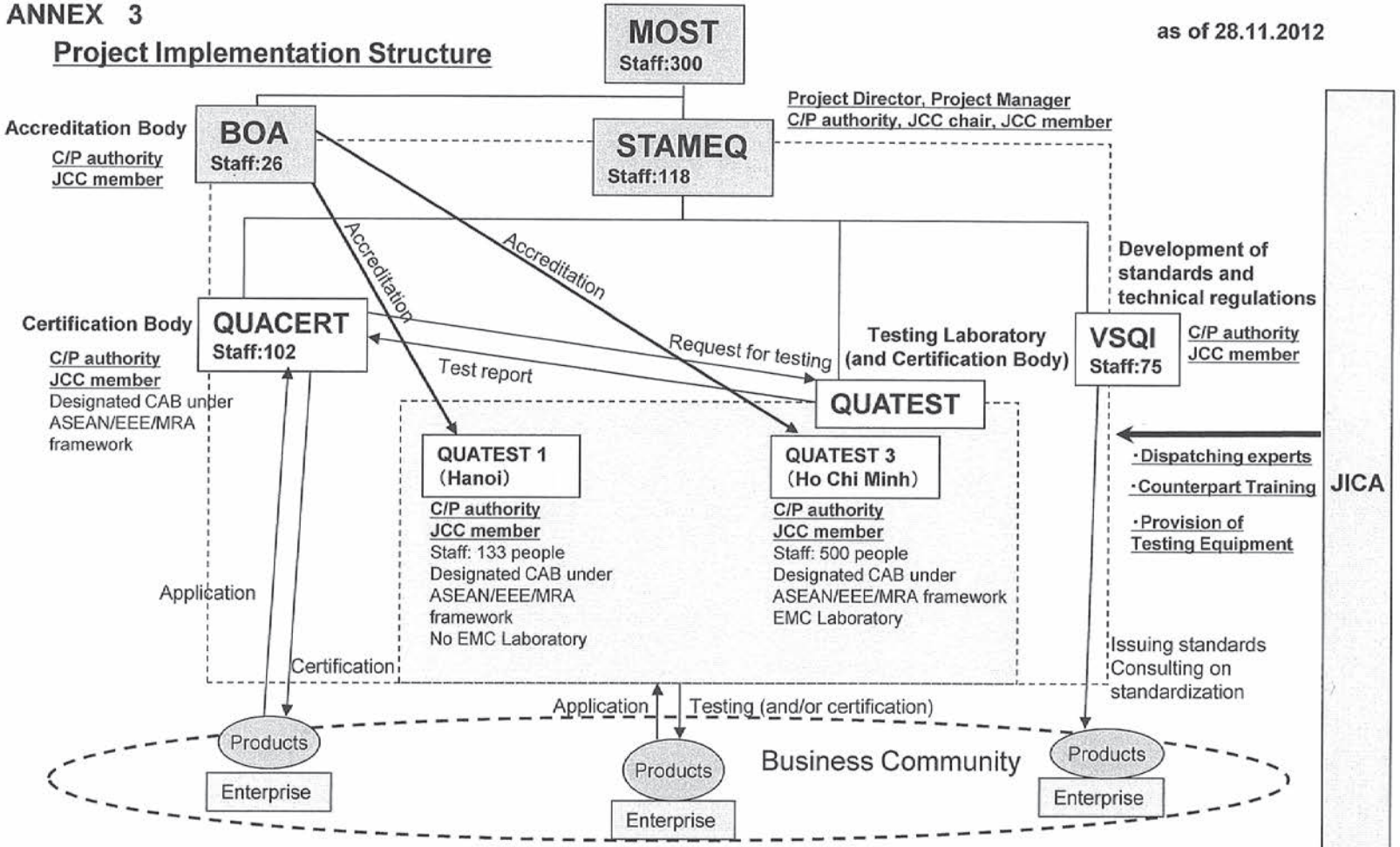
Outputs & Activities		Schedule	2009	2010				2011				2012				2013	
			Nov.-Dec.	Jan.-March	Apr.-June	July- Sep.	Oct.-Dec.	Jan.-March	Apr.-June	July- Sep.	Oct.-Dec.	Jan.-March	Apr.-June	July- Sep.	Oct.-Dec.	Jan.-March	April
Output 1	**The capacity of planning the standards and conformance policy in the field of electrical and electronic equipment is strengthened.**																
1-1 To provide training and technical advice to staff members of STAMEQ about planning the standards and conformance policy.		plan	■		■	■	■	■	■	■	■	■	■	■	■	■	■
		achieved			Long Term-experts: CA, CDN												
1-2 To hold seminars regarding the standards and conformance policy by JICA experts and ex-JICA trainees.		plan				■		■		■		■		■		■	
		achieved					Seminar on Measurment Uncertainty			Seminar on EMC			Seminar on Measurment Uncertainty				
Output 2	**The capacity of developing standards and regulations in the field of electrical and electronic equipment is improved.**																
2-1 To provide training and technical advice for developing standards and regulations in Viet Nam based on checking the terms of IEC.		plan	■			■				■				■			
		achieved	International Standards Development				International Standards Development				International Standards Development			International Standards Development			
Output 3	**The capacity of accreditation is improved.**																
3-1 To provide training and technical advice for accreditation in the field of electrical and electronic equipment including preparation for PAC MLA membership for products program.		plan	■		■	■	■	■	■	■	■	■	■	■	■	■	■
		achieved	CP: Product Certification			CP: Certification	CP: Product Certification	CP: EMC Testing	CP: Certification System in Japan	STE: EMC Consulting	CP: Product Certification	CP: Certification of EMC Lab.			CP: Product Certification CP: EE Certification Org. STE: EE Certification STE: EMC Certification		
Output 4	**The capacity of certification in the field of electrical and electronic equipment is improved.**																
4-1 To provide training and technical advice for certification in the field of electrical and electronic equipment including preparation for IECEE CB scheme membership.		plan	■			■				■			Long Term-expert: CB Scheme Application				
		achieved						STE: EE Testing STE: Cable Testing		STE: EMC Consulting				STE: EMC Testing STE: EE Certification STE: EMC Certification			
Output 5	**The capacity of testing in the field of electrical and electronic equipment is improved.**																
5-1 To provide training and technical advice for testing in the field of electrical and electronic equipment.		plan	■		■	■	■	■	■	■	■			■			
		achieved		CP: EE Testing		CP: Cable Testing		CP: EMC Testing	STE: Cable Testing STE: EE Testing					STE: EMC Testing			

STE: Short-term JICA expert, CP: Counterpart Personnel Training in Japan

ANNEX 3

Project Implementation Structure

as of 28.11.2012



MOST: Ministry of Science and Technology	QUACERT: Vietnam Certification Center
STAMEQ: Directorate for Standards, Metrology and Quality	QUATEST: Quality Assurance and Testing Center
BOA: Bureau of Accreditation	VSQI: Vietnam Standards and Quality Institute

ANNEX 4

Evaluation Grid for Final Evaluation: The Project on Strengthening the System and Operation on Standards and Conformance in Viet Nam

PERFORMANCE

1. Achievement

Evaluation Criteria	Evaluation Questions			Data sources	Remarks
	Topics		Questions		
Input	Japanese side	(1) Experts	If the Long-term experts have been dispatched as planned?	Record of the Project, Experts, C/P	(1) Long term experts have been dispatched as planned. Mr. Ishizaki as Chief Advisor (4/2010-36months) and Mr. Saito as Coordinator (4/2010-36months) have been dispatched almost throughout the project period. In addition to that, dispatch of a long-term expert, Mr. Ozaki (4/2012-12months) in the field of electrical testing and IECEE/CB Scheme is realized in response to the strong demand from the C/Ps and based on the recommendation at the Mid-term Review. Short-term experts in various areas have been also dispatched more than planned. 4 lecturers in 2010, and 2 lecturers in 2012. There will be 2 more seminars scheduled in 2013. 3 technical Advisors, electrical testing, cable testing and EMC consulting were dispatched in 2011, 7 advisors (EMC testing and Accreditation of EE products) in 2012.(The details of the dispatch of experts is attached.)
			If the Short-term experts have been dispatched as planned?		
		(2) Counterpart Personnel (C/P) training in Japan	If the C/P have been trained as planned?		(2) C/P training in Japan: The total of 45 C/P has trained as planned in Japan. 6 C/P in JFY2009, 23 C/Ps in JFY2010, 8 C/P in JFY2011and 8C/P so far in 2012. There will be three more EMC testing engineer to be trained in the 1st quarter of 2013. With a strong request from the C/P, a series of seminars on "Measurement Uncertainty" were organized with participation of JICA short-term experts as lecturers. (The detail of the C/P training is attached.)
		(3) Equipment and material provided by JICA	If the testing equipment have been provided as planned?		(3) Most of the testing equipment and material provided by JICA were delivered as planned with one minor delay on the settings of EMC equipment. (The details of the equipment provisions are attached.)
	Vietnamese side	(1) C/P and administrative personnel	If the C/P and the project administrative personnel have been allocated as planned?	Record of the Project, Experts, C/P	(1) They have been allocated almost as planned. STAMEQ has allocated Mr. Tran Van Vinh as Project Director and Dr. Ngo Tat Thang as Project Manager. After the retirement of Dr. Thang, Dr. Vu Van Hong became in charge. Project administrative personnel were set in the International Cooperation Dept, and C/P in charge in the QUATEST1, QUATEST 3, QUACERT, VSQI and BOA.
		(2) Project office	If the project office in Hanoi and Ho Chi Minh City have been prepared as planned?		(2) The project office has been set in STAMEQ building in Hanoi, and for Ho Chi Minh City set in QUATEST 3.
		(3) Necessary budget for the implementation of the project	If the necessary administrative and operational expenses were provided as planned?		(3) Necessary administrative and operational expenses have been prepared by the Vietnamese side.
		(4) Necessary installation of testing equipment	If the necessary installation of testing equipment was conducted as planned?		(4) Necessary installation of testing equipment has been conducted by the Vietnamese side.

	(1) The capacity of planning the standards and conformance policy in the field of electrical and electronic equipment is strengthened.	[Indicator:1-1] Number of seminars held by JICA experts and ex-JICA trainees	Record of the Project activities, Experts and C/P	Sufficient number of seminars have been held for internal share of ideas on standards and conformance. In total, 1 seminar was organized in Hanoi and 2 seminars in Ho Chi Minh City in 2010. 1 seminar in Ho Chi Minh City in 2011. 1 seminar in Hanoi and 2 seminars in Ho Chi Minh City in 2012. There will be 2 seminars both in Ho Chi Minh City and Hanoi scheduled in the 1st quarter of 2013. The content of the seminars is about "Measurement Uncertainty" from the basic level to the advanced level.
		[Indicator: 1-2] Degree of understanding of C/P about standards and conformance policy in the field of electrical and electronic equipment		Degree of understanding of C/P about standards and conformance policy in the field of electrical and electronic equipment is high. It was confirmed by the questionnaire and interviews that the Project has been enhancing and strengthening the capacity of planning the standards and conformance policy in the field of electrical and electronic equipment. The C/P training in Japan is functionally composed of three structural levels from the aspects of policy planning and implementation; the first level is designed especially for senior officials to acquire method of policy planning issues of the standards and conformance. After the training they could design a "Road Map" for their subordinates. The other two levels are designed to learn the method of action planning and implementation of the plans.
		How the actual achievement in terms of strengthening the capacity of planning the standards and conformance policy in the field of electrical and electronic equipment is evaluated?		STAMEQ as a whole has been making an effort for introducing their activities and responsibilities to the industries to let them understand the importance of standards and conformance. For example, STAMEQ set up their web site which includes the announcement of their policies and planning related with standards and conformance, product testing, international standards and conformance news, claims from the industries, etc. etc. They try to hear voices of the industries in the process of policy making and planning of the standards and conformance.
		If the project offers the adequate technical training and advice to the staff of STAMEQ according to the plan? And what is the achievement or gains from the C/P training in Japan?		It was highly appreciated that the Project had offered the adequate technical training and advice to the staff of STAMEQ and other related organizations in terms of strengthening the capacity of planning standards and conformance policy in the field of electrical and electronic equipment. They learned accreditation system of Japan, certification, testing etc. Some of the courses were not exactly associated with the trainees' duties, however, it was a good opportunity to understand the standards and conformance intensively.
	(2) The capacity of developing	[Indicator 2-1] Increase in the number of Viet Nam national standards (TCVN) based on the latest IEC standards	Record of TCVN	The number of TCVN has been continuously increasing. There are around 6,600 TCVN standards and among which about 492 standards are of the electric and electronics sector. 407/792 standards are based on IEC standards (accounting for 82.7%). Not all the IEC standards are the latest since the budget is limited, however, they are renewed as the necessity arises. For the year 2008, 52 TCVNs (based on IEC standards) are developed, and 51 TCVNs in 2009, 57 TCVNs in 2010 are developed, and 45 TCVNs win 2011. In 2012 92 TCVNs are being developed in 2012 and will be published in 2013. For 2013 plan, there will be 80 TCVNs being developed. Thus the indicators present proper achievement of the Output 2.

	Outputs	standards and regulations in the field of electrical and electronic equipment is improved	If the training and technical advice in the area of developing standards and regulations are provided? And if those who have been provided the training and technical advice have been using their knowledge at their actual field of work?	Records of the Project activities, Experts and C/P	The training in Japan was highly appreciated. 3 VSQI staffs were trained in 2011 and 2 were in 2012. The training program was designed to formulate plans to establish industrial driven systems in cooperation with governmental support which can properly lead international standards activities mainly done by the industrial sectors in the respective countries. They also learned how to develop a long-term action plan for the development of standards. There were some requests to learn more such as; learning how to develop actual standards (e.g.. energy efficiency standards) and planning of seminars in Vietnam to learn the development of actual standards.
				C/P interview	Vietnamese National Committee for IEC standardization are being reformed and Vietnamese standard development would become more internationalized.
		(3) The capacity of accreditation is improved	[Indicator 3-1] Increase in the number of testing items/requirements of electrical and electronic testing laboratories and EMC testing laboratories accredited by BOA	Record of BOA	The scope of accreditation has been enhanced by using the JICA provided equipment. As for EMC testing, by using the equipment provided by JICA, EMC Testing Lab is now able to expand the scope of testing to the frequency range of 1-18 GHz according to CISPR 22:2006. As for electrical and electronic testing lab, they are now fully meet the requirements for testing all 13 mandatory products and other similar products.
			[Indicator 3-2] Status of PAC MLA application preparation for product program	Record of PAC MLA	BOA had been a member of PAC MLA with a sub-scope of Management System Sector only. However, they obtained a member status with a sub-scope of Product Certification Sector as well. The application was submitted in April 2011, the assessment was conducted in November 2011 by an international evaluation team and by them BOA was accepted in June 2012.
			If the number of non-conformities of APLAC MRA evaluations is decreased?	Record of BOA	The APLAC Peer Evaluation (every 4 years) for BOA was conducted in July 2012. The number of non-conformities to BOA was NONE.
		(3) The capacity of accreditation is improved	If the training and technical advice for accreditation in the field of electrical and electronic equipment are provided adequately?	Record of the Project activities, Experts and C/P	The training and technical advice have been provided adequately. Output 3 was successful that the training and the technical advice throughout the project were not just to learn general know-how, but to focus on the actual needs of Vietnam. Especially the program of "EMC Testing Laboratory Accreditation" was very appreciated. After the training in Japan the BOA assessors and staff have been applying their knowledge.
			If the BOA has been more recognized by the industry through their accreditation activities?		The BOA has been more recognized by the industry. The industry and laboratories have been asking BOA to strengthen their accreditation activities, especially in the fields of food, electric & electronics, construction, mechanical, feed and fertilizer.
			[Indicator4-1] Accumulated number of product certificates by QUACERT		Number of product certificates have been accumulated at an accelerated pace. The trend of number of product certificates issued is as follows; total of 259 certificates (including 55 EE products) in 2009, total of 450 (88 EE products) in 2010, total of 450 (90 EE products) in 2011, and total of 621 (85 EE products) in 2012 as of Oct 2012.

	(4) The capacity of certification in the field of electrical and electronic equipment is improved	[Indicator 4-2] Status of IECEE/CB scheme application preparation	Record of the Project activities, Experts and C/P	For the preparation of applying IECEE CB Scheme, as for QUACERT the documentation is ready to submit. In order for QUACERT to become NCB and QUATESTs to be CBTLs, first STAMEQ needs to join in the National Committee member of IECEE.
		If the training and technical advice for certification in the field of electrical and electronic equipment have been provided adequately? And if those who have been provided the training and technical advice use their knowledge at their actual field?		QUACERT has been appreciating for the detailed training and technical advice for the certification procedures on standards and conformance in the field of electrical and electronics. As for training in Japan, they found that the practical part was the most effective. They experienced simulation of an actual pre-assessment in Vietnam under the short-term experts' guidance.
	(5) The capacity of testing in the field of electrical and electronic equipment is improved.	[Indicator 5-1] Execution situation of test to 13 electrical and electronic appliance	Record of the Project activities, Experts and C/P	QUATEST 1 can execute tests on all (including scope and range) of the 13 mandatory electrical and electronic appliances thanks to the equipment provided by JICA. Before the Project's start, QUATEST 1 was not fully capable of testing mandatory household products, however, their testing capability and capacity have been expanded to the similar electrical and electronic appliances from those of 13 mandatory appliances. The testing services offered by QUATEST 1 in total has increased by 30% for the last 3 years including this year. The number of sample tests for electrical and electronics products including 13 mandatory appliances has increased; about 5,774 in 2009, 8,478 in 2010, 8,798 in 2011, 13,500 at the end of October 2012. As for QUATEST 3, both the range and field of testing have been enhanced not only for 13 mandatory products but for similar products as well. At QUATEST 3, the number of sample tests for household appliances has tremendously increased; about 10 tests in 2009, 519 in 2010, 560 in 2011 and 650 in 2012 (confirmed by the time of Terminal Evaluation)
		[Indicator 5-2] Expansion of the accreditation scope for the EMC testing laboratory of QUATEST 3		As for EMC testing, with the provision of necessary testing equipment for EMC Testing Lab, QUATEST 3 has expanded the scope of testing to the frequency range of 1-18 GHz according to CISPR 22:2006, meeting the State Management Regulations as specified in the Circular No. 31:2001/BTTTT(MOIC) and the Regulation No. QCVN 09:2012/BKHCN(MOST). In addition to the fact that the EMC Lab increases the scope of testing, the knowledge of the staff become more extensive.
		If the staff who have been provided the training and technical advice share and apply their knowledge at their actual field?		According to the interview with the C/P, the long-term and short-term experts are very responsible and supportive for the Labs improving the testing capabilities. With the assistance from the long-term experts, the Electrical Testing Lab is preparing to meet the requirements to become CBTL. A series of seminars on "Measurement Uncertainty" held by JICA short-term experts was very much appreciated.

Project Purpose	Achievement of Project Purpose "The system and operation of the STAMEQ and other related organizations on standards and conformance in the field of electrical and electronic equipment are strengthened."	[Indicator 1] Improvement of capabilities of STAMEQ and other related organizations on standards and conformance as compared with international standards and recommendations	Record of the Project, Experts, C/P	STAMEQ and other related organizations show the notable improvement of their capabilities on standards and conformance as compared with international standards and recommendations. QUACERT and QUATEST1 & 3 have been operating the standards and conformance system following the international manner and they are now in the midst of preparing to participate in the IECEE/CB Scheme. By the end of the Project period, the Project Purpose will be achieved through the accomplishment of all the Outputs with consistence. The STAMEQ has been participating more in the international activities of standards and conformance. The BOA, QUACERT and VSQI have gained recognition and credibility by the Vietnam industries and by the international related organizations through the activities of the Project. The capacity of QUATEST 1 and QUATEST 3 have been enhanced as planned. The capacity of certification of the products and the credibility of testing have been improved through the adequate C/Ps training in Japan, seminars and technical advice by experts.
Overall Goal	Achievement of Overall Goal "The quality of electrical and electronic equipment manufactured in Viet Nam is improved and the consumers' safety is ensured"	Within 5 years after the completion of the Project, will the Overall Goal likely to be achieved?	Record of the Project, Experts, C/P	With the accomplishment of the Project, the system and operation on standards and conformance in Viet Nam is strengthened and this trend will continue even after the project period. The quality of EE products will be improved and thus the consumers' safety is ensured.
		[Indicator 1] If the number of claims caused by EE is decreased?	Data by MOIT	
	Achievement of Overall Goal "The quality of electrical and electronic equipment manufactured in Viet Nam is improved and the consumers' safety is ensured"	[Indicator 2] If the amount of export of domestic manufacturers in the field of EE is increased?		
		[Indicator 3] if the share of CR marked products at designated marketplaces is increased?	Records of market research	

2. Implementation Process

Evaluation Criteria	Evaluation Questions	Data sources	Means
	If the project activities are implemented as planned?		1) Implementation of Testing Equipment: At a time of Mid-term Review, there was a delay on implementing EMC testing equipment and also one of the antenna composing the equipment was broken. The delay was not very crucial to affect the project activities and the replacement of the antenna was done immediately by the Project which will not affect the activities of the project. Most of the equipment, however, have been implemented as planned and being used frequently.

Appropriateness of the Implementation Process of the Project Activities after the Mid-term Review		If there is any problems which affect the implementation process?	Record of the Project, Experts, C/P	2) Long term experts have been dispatched as planned and even more than that. Mr. Ishizaki as Chief Advisor (4/2010-36months) and Mr. Saito as Coordinator (4/2010-36months) have been dispatched almost throughout the project period. In addition to that, dispatch of a long-term expert, Mr. Ozaki (4/2012-12months) in the field of electrical testing and IECEE/CB Scheme is realized in response to the strong demand from the C/Ps and based on the recommendation at the Mid-term Review. The dispatch of the short term experts in 2012 were organized in August 2012. One of the purpose of the short-time experts was, together with the long-term expert, set the detail plan of activities to prepare for the IECEE CB Scheme. They have conducted a pre-assessment of IECEE CB Scheme application and the result of which was adopted in the long-term expert's activities and it was highly appreciated by the C/Ps.
		How did you cope with the problems concerned?		
Method of Technical Transfer		Is there any problem in the method of technical transfer?	Record of the Project, Experts, C/P	The technical transfer through C/P training in Japan, by short-term experts, and through seminars and workshops were highly appreciated and adequate. The relationship with JICA Experts and C/Ps was maintained at a good level.
		How was the relationship with JICA Experts and C/P? If there is any difficulties with the communication between JICA Experts and C/P?		
Management System of the Project	Monitoring of the Project	If the Joint Coordinating Committee (JCC) or any other meeting to monitor the Project has been organized after the Mid-term Review?	Record of the Project, Experts, C/P	The implementation process of the Project has been reviewed and discussed at the Joint Coordinating Committee. 1st JCC was set in June 22nd 2010, 2nd in June 14th 2011, 3rd in November 17th 2011, and 4th in August 15th 2012. There are many informal ad-hoc meetings between the long-term expert and C/Ps frequently. As for decision-making, the STAMEQ and BOA make every effort to allocate the Project C/P adequately and call for meetings when necessary despite of their tight human resources.
	Decision Making	Is there any communication problems in the decision-making?		
		Is there any change in the management system by the C/P including the allocation of the staff?		
		If the C/Ps have been allocated to the Project adequately?		
Feeling of Ownership of the Project		If the C/P keeps high level of consciousness toward the Project?	Record of the Project, Experts, C/P	Definitely yes, the C/P keeps high level of consciousness toward the project.
Consciousness of other organizations or institutes toward the Project		If the other organizations or institutes participate in the project?	Record of the Project, Experts, C/P	Vietnam Metrology Institute (VMI-STAMEQ) had participated in the project. 9 scientists from each sector laboratory (EE, Volume, Frequency, Chemical, Mass, Hardness...) had participated in the Seminar, "Tutorial Seminar on Measurement Uncertainty (Advance Course + Basic Course)". VMI keeps the national standards of metrology and they believe the improvement of testing capabilities of the QUATEST 1 and QUATEST 3 and improvement and expansion of accreditation scope of BOA have direct influence to VMI's responsibilities. VMI provides calibration for the testing equipment of QUATEST 1 and 3 periodically. VMI's scientists will conduct in the technical part of assessment in the process of BOA's accreditation of laboratories.

	If the other accredited laboratories and private sectors (including Japanese companies) participate in and/recognize the Project?	Experts	The long-term experts had organized a seminar targeted at Japanese companies in Viet Nam to introduce the standards and conformance in Viet Nam.
Factors that affect the implementation of the Project	If there has been any promote factors in the implementation of the project?	Record of the Project, Experts, C/P	YES, the standards and conformance related organizations and institute have been showing a great effort to introduce the necessity of standards and conformance issue to the industries through their web-site, seminars and so on. Their effort to promote their activities will increase the consciousness towards the improvement of quality of the products.
	If there has been any obstruct factors that affect the implementation of the project?		

3. Five Evaluation Criteria

3.1 Relevance

Evaluation Questions		Remarks
Topics	Questions	
Relevance with the national policy	If there is any change in accordance with the standards and conformance policy in Viet Nam?	The standards and conformance policy remains relevant in the relationship among MOST, STAMEQ and other related organizations.
	If there is any change in political and economical policy in Viet Nam?	The political and economical policy remains relevant in Viet Nam.
	How the national policy would or would not change in the next five years?	The national policy in terms of standards and conformance would not change in the next five years.
Relevance with the Japan's ODA policy	If the Project is in line with the Japanese Government's assistance policies in general and for Viet Nam?	The Project remains in line with the Japanese ODA policy in general and for Viet Nam.
Appropriateness	If there is any change observed in terms of the role of STAMEQ and other related organizations in Viet Nam during the course of the project? How the role of STAMEQ and other related organizations would or would not change in the next five years to come?	The role of STAMEQ and other related organizations in Viet Nam remains and will remain the same during the course of the project.
	If the Project target is still relevant and will be relevant in the next five years to come?	The Project target is STAMEQ and other related organizations and they are still relevant and will be expected to remain relevant in the next five years.
	Does Japan have technological and empirical advantages in strengthening the system and operation on standards and conformance in Viet Nam?	Japan has sound technological and empirical advantages in strengthening the system and operation on standards and conformance and for that the Project's appropriateness is high.
Relevance with beneficiaries' needs	If the Project approach has been in line with the target group (Staff of STAMEQ and other related organizations)?	Through the C/P training, seminars and technology transfer by the experts, the target group (staff of STAMEQ and other related organizations) have gained the meaning of the system and operation on standards and conformance, improved their standards and conformity assessment both systematically and technically. Therefore, the Project approach has remained in line with the target group.
	Are the Project Purpose and the Overall Goal relevant to the needs of the target groups?	Yes, the Project Purpose and the Overall Goal are relevant with the beneficiaries' needs.
	How do you see the relevance with needs? Would the needs change or would not change for next five years?	The needs will not change for a next few years.

3.2 Effectiveness

Evaluation Questions		Remarks
Topics	Questions	
Achievement of the Project Purpose	How do you evaluate the level of achievement in terms of Project Purpose by the end of this Project? *Project Purpose: The system and operation of the STAMEQ and other related organizations on standards and conformance in the field of electrical and electronic equipment are strengthened*	STAMEQ and other related organizations show the notable improvement of their capabilities on standards and conformance as compared with international standards and recommendations. QUACERT and QUATEST1 & 3 have been operating the standards and conformance system following the international manner and they are now in the midst of preparing to participate in the IECEE/CB Scheme. By the end of the Project period, the Project Purpose will be achieved through the accomplishment of all the Outputs with consistence. STAMEQ has been participating more in the international activities of standards and conformance. BOA, QUACERT and VSQI have gained recognition and credibility by the Vietnam industries and by the international related organizations through the activities of the Project. The capacity of QUATEST 1 and QUATEST 3 have been enhanced as planned. The capacity of certification of the products and the credibility of testing have been improved through the adequate C/Ps training in Japan, seminars and technical advice by experts.
Causal relationship with the PDM	If the successful achievements of the Outputs are sufficient enough to the achievement of the Project Purpose?	Sufficient enough.
Interfering factors in the achievement of Project Purpose	Is there any factors that particularly contributed to/impeded the achievement of the Project Purpose?	The awareness of the importance of standards and conformance in STAMEQ and other related organizations has been very high and that has contributed more to the achievement of the Project Purpose.
Is the Important Assumption for achieving the Project Purpose being met?	If the organizations related to the project remain as government bodies?	Most likely.

3.3 Efficiency

Evaluation Questions		Remarks
Topics	Questions	
Appropriateness of the Input	If the assignment of Experts (Long-term and Short-term) has been appropriate in terms of their number, expertise and capabilities, and the assignment periods and timing?	The assignment of Experts (long-term and short-term) has been appropriate in terms of their number, expertise and capabilities. In addition to the original plan, dispatch of a long-term expert in the field of electrical testing and IECEE/CB Scheme is realized in response to the strong demand from the C/Ps and based on the recommendation at the Mid-term Review. By Chief Advisor's countless effort, despite the general difficulty on securing an expert in this area, the very right person in the right position was found. The long-term and short-term experts are very responsible and support the Labs improving the testing capabilities. With the assistance from the long-term experts, the Electrical Testing Lab is preparing to meet the requirements to become CBTL. The dispatch of the short term experts in 2012 were delayed from April 2012 to August 2012 due to the personnel arrangement difficulties in Japan.
Appropriateness of the Input	If the seminars and workshops in Viet Nam and the training in Japan have been appropriate in terms of the number of participants, training contents and the training periods and timing?	It was highly appreciated that the Project had offered the adequate technical training and advice to the staff of STAMEQ in terms of strengthening the capacity of planning standards and conformance policy in the field of electrical and electronic equipment. They learned accreditation system of Japan, certification, testing etc. Some of the courses were not exactly associated with the trainees' duties, however, it was a good opportunity to understand the standards and conformance intensively. The training program was designed to formulate plans to establish industrial driven systems in cooperation with governmental support which can properly lead international standards activities mainly done by the industrial sectors in the respective countries. They also learned how to develop a long-term action plan for the development of standards.
		After the trainings, seminars and receiving technical advices, C/P has applied their newly acquired knowledge at their organizations. Besides, C/P has develop their own training program, organized the C/P led seminars and shared acquired knowledge as trainers with their colleagues, other institutes and industries. This is one of the greatest impacts from the Project point of view.

		There were some requests to learn more such as; learning how to develop actual standards (e.g.. energy efficiency standards) and planning of seminars in Viet Nam to learn the development of their original standards in new fields. As for Output 3 the training and the technical advice throughout the project were not just to learn general know-how, but to focus on the actual needs of Viet Nam. Especially the program of "EMC Testing Laboratory Accreditation" was very appreciated. After the training in Japan the BOA assessors and staff have been applying their knowledge. A series of seminars on "Measurement Uncertainty" held by JICA short-term experts was very much appreciated.
	If the budget has been sufficient and allocated appropriately?	The budget has been sufficient and allocated appropriately.
Factors that contribute to the achievement of the Project Purpose (Degree of achievement of the Outputs)	Are the activities of the project sufficient to achieve the Output?	Appropriate.
	What is the evaluation of the achievement of the Project through the Outputs so far?	Within the Project period, the Project Purpose will be achieved through the accomplishment of Outputs with consistence. The standards and conformance policy has been well notified and understood by the STAMEQ and other related organizations through the outputs of the Project. The STAMEQ has been participating more in the international activities of standards and conformance. The BOA, QUACERT and VSQI have gained recognition and credibility by the Vietnam industries and by the international related organizations through the activities of the Project. The capacity of QUATEST 1 and QUATEST 3 have been enhanced as planned. The capacity of certification of the products and the credibility of testing have been improved through the adequate C/P training in Japan, seminars, workshops, and technical advice by experts.
	Is there any other factors that contribute to the achievement of Project Purpose?	The awareness of the importance of standards and conformance in STAMEQ and other related organizations has been very high and that has contributed more to the achievement of the Project Purpose.
Factors that impede the achievement of the Outputs	If the C/Ps and the JICA experts have been able to obtain sufficient financial resources for the implementation of the Project?	The budget has been sufficient and allocated appropriately.
	If there has been any other factors that have impeded to the achievement of the Outputs?	None
Important Assumptions	Can you observe any bad influence to the Project?	None
	Have any C/Ps resigned or transferred?	STAMEQ has allocated Mr. Tran Van Vinh as Project Director and Dr. Ngo Tat Thang as Project Manager. After the retirement of Dr. Thang, Dr. Vu Van Hong became in charge. The replacement of the Project Manager did not affect the Project. In addition, the Head of EMC Lab had left QUATEST 3, however, the new Head, who had trained in Japan, was assigned without any delay.

3.4 Impact

Evaluation Questions		Remarks
Topics	Questions	
Prospects of achieving the Overall Goal	If the Overall Goal is achieved in 5 years after the completion of the Project? *Overall Goal: The quality of electrical and electronic equipment manufactured in Viet Nam is improved, and the consumers' safety is ensured*	With the accomplishment of the Project, the system and operation on standards and conformance in Viet Nam is strengthened and this trend will continue even after the project period. The quality of EE products will be improved and the thus the consumers' safety is ensured.
	If the Overall Goal and its verifiable indicators are still valid? If not, how can the Project approach to the issues? *Objectively Verifiable Indicators for Over all Goal: 1) Decrease in the number of claims caused by electrical and electronic equipment, 2) Increase in the amount of export of domestic manufacturers in the field of electrical and electronic equipment, and 3) Increase in the share of CR marked products at designated marketplaces.*	The Overall Goal is still valid. As for its verifiable indicators, they were revised in response to the discussions and recommendation at a time of Mid-term Review, and they are still valid with the condition that the survey to check the CR marked products at designated marketplaces will be conducted. In the 4th JCC Meeting held in August 15th 2012, the concerned parties were requested to start collecting the baseline data on the objectively verifiable indicators of Overall Goal of the Project.
Other aspects	If the Important Assumptions still remain the same after the completion of the Project? If not how will they change?	The Important Assumptions will remain the same after the completion of the Project.
		There is a positive impact observed to other laboratories of QUATEST 1 and QUATEST 3, they have also introdued the improved management system to their own systems in other sector than the electrical and electoronic field.
		After the trainings, seminars and receiving technical advices, C/P has applied their newly acquired knowledge at their organizations. Besides, C/P has develop their own training program, organized the C/P led seminars and shared acquired knowledge as trainers with their colleagues, other institutes and industries. This is one of the greatest impacts from the Project point of view.

	Are there any unexpected impacts? (positive and negative)	Another unexpected impact was observed in the VMI. Vietnam Metrology Institute (VMI-STAMEQ) had participated in the project. 9 scientists from each sector laboratory (E&E, Volume, Frequency, Chemical, Mass, Hardness...) had participated in the Seminar, "Tutorial Seminar on Measurement Uncertainty (Advance Course + Basic Course)". VMI keeps the national standards of metrology and they believe the improvement of testing capabilities of the QUATEST 1 and QUATEST 3 and improvement and expansion of accreditation scope of BOA have direct influence to VMI's responsibilities. VMI provides calibration for the testing equipment of QUATEST 1 and 3 periodically. VMI's scientists will conduct in the technical part of assessment in the process of BOA's accreditation of laboratories.

3.5 Sustainability

Evaluation Questions		Remarks
Topics	Questions	
Government policy and related regulations and legislations	What is the prospect of Vietnamese Government to continue to support improvement of the quality of electrical and electronic equipment manufactured in Viet Nam?	It is confirmed that Vietnamese Government will continue to support improvement of the quality of electrical and electronic equipment manufactured in Viet Nam.
Organizational aspects	If the STAMEQ and other related organizations maintain their achievement of the Project after the completion of the Project?	It is confirmed that the STAMEQ and other related organizations maintain their achievement of the Project after the completion of the Project.
	If the STAMEQ has a sense of ownership toward the Project?	Yes, at a high level.
Financial aspects	What is the prospect for STAMEQ and other related organizations that they should be financially sustainable after the completion of the Project?	The STAMEQ and other related organizations will be financially sustainable after the completion of the Project as long as budget is secured.
	If the budget regarding application and subscription of the IECEE/CB Scheme is secured?	STAMEQ will get the budget for being NC (National Committee member) of IECEE/CB Scheme. QUACERT as NCB, and both QUATEST 1 and QUATEST 3 as CBTL, application fee and annual due will be required for the sustainability of the Project.
	If the budget to maintain the testing equipment (including calibration of their testing equipment) provided in this Project is secured after the completion of the Project?	The maintenance of the testing equipment requires certain amount of the budget continuously. According to QUATEST 3, although they set 5% of their budget is for the maintenance of testing equipment, that does not include the cost of periodical calibration. As for QUATEST 1, their budget is secured both for maintenance of the testing equipment and for calibration.

Technical aspects	If the technology transferred during the Project is maintained and applied further?	Yes, at a high level. The manuals for certification and testing activities of QUACERT, QUATEST1 and QUATEST3 have been revised and maintained to meet the international requirements during the course of this Project, and as long as they are applied, technology transferred will remain sustainable.
	If the staff members who have been transferred the technology educate other staff members to maximize their knowledge?	Yes, at a high level as long as they remain at their same organizations.
Interfering factors in the sustainability of the Project	Are there any other factors which help or hinder the sustainability of the Project?	Not observed.

Response to the Recommendations of Mid-Term Review

Questions		
Have any reactions been taken to 4 recommendations from the Mid-Term Review Report?	1) Strengthening the relationships among the STAMEQ and other related organizations	STAMEQ as a whole has been making an effort for introducing their activities and responsibilities to the industries to let them understand the importance of standards and conformance. For example, STAMEQ set up their web site which includes the announcement of their policies and planning related with standards and conformance, product testing, international standards and conformance news, claims from the industries. They try to hear the voices of the industries in the process of policy making and planning of the standards and conformance. More over, BOA, QUACERT (as NCB) and QUATESTs (as CBTLs) have been cooperating at a high level in order to apply for IECEE CB Scheme.
	2) Further elaborated monitoring system by modification of the PDM and PO	The revised PDM has been implemented in the 4th JCC meeting which was held in August 2012 and monitored throughout the Project.
	3) Necessity of dispatch of a long-term expert in the field of electrical testing and IECEE/CB Scheme	A long-term expert, Mr. Ozaki (4/2012-12months) in the field of electrical testing and IECEE/CB Scheme has dispatched with a strong demand from the C/P after the Mid-term Review. In Japan the required sector of standards and conformance is in charge of government officials, therefore it was very fortunate to find a long-term expert.
	4) Holding observation measures on quality level of services	In the 4th JCC Meeting held in August 15th 2012, the concerned parties were requested to start collecting the baseline data on the objectively verifiable indicators of Overall Goal of the Project.

ANNEX 5

Project on Strengthening the System and Operation on Standards and Conformance (STAMEQ)

List of long-term Japanese experts in 2010,2011,2012 (Japanese Fiscal Year)

as of November 28.2012

Subjects	Technical Field	Duration of Dispatch	Seminar Schedule	Place of work	Name	Organization
	Chief advisor	22/4/2010- (36months)	---	Ha Noi & HCM	N. Ishizaki	
	Provision of IECEE/CB Scheme Application	30/3/2012- (12months)	---	Ha Noi & HCM	M.Ozaki	JET
	Coordinator	11/4/2010- (33months)	---	Ha Noi & HCM	M. Saito	JICE

List of short-term Japanese experts in 2010, 2011,2012 (Japanese Fiscal Year)

Subjects	Technical Field	Duration of Dispatch	Seminar Schedule	Place of work	No. of attendants	Name	Organization
Seminar Lecturer	Seminar Lecturer for "Seminar on Measurement Uncertainty"	04/11/2010-10/11/2010 (7days)	05/11/2010	HCM	243	H. Imai	
			08/11/2010	Ha Noi	215		
	Seminar Lecturer for "Seminar on Measurement Uncertainty"	04/11/2010-10/11/2010 (7days)	05/11/2010	HCM	ditto	K. Seta	AIST
			08/11/2010	Ha Noi			
	Seminar Lecturer for "Seminar on Measurement Uncertainty"	04/11/2010-14/11/2010 (11days)	05/11/2010	HCM	ditto	H. Tanaka	AIST
			08/11/2010	Ha Noi			
	Seminar Lecturer for "Tutorial Seminar on Measurement Uncertainty"(Basic Course)		09/11/2010-12/11/2010	Ha Noi	30		
	Seminar Lecturer for "Tutorial Seminar on Measurement Uncertainty"(Basic Course)	08/11/2010-14/11/2010 (7days)	09/11/2010-12/11/2010	Ha Noi	30	T. Nakamura	AIST
	Seminar Lecturer for "Tutorial Seminar on Measurement Uncertainty"(Advance Course)	09/2/2012-18/2/2012 (10days)	11/2/2012-14/2/2010	Ha Noi	29	K.Shirono	AIST
			15/2/2012-17/2/2010	HCM	33		
	Seminar Lecturer for "Tutorial Seminar on Measurement Uncertainty"(Basic Course)	18/2/2012-23/2/2012 (6days)	20/2/2012-22/2/2010	HCM	44	H.Tanaka	AIST

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Technical Advisor	Electrical testing (1)	9/5/2011-28/5/2011 (19days)	---	HCM (QUATEST3)	T. Kamisango	JET
		28/5/2011-21/6/2011 (25days)		Ha Noi (QUATEST1)		
	Cable Testing	9/5/2011-14/5/2011 (5days)	---	HCM (QUATEST3)	S. Saito	JECTEC
		14/5/2011-24/5/2011 (11days)		Ha Noi (QUATEST1)		
	EMC Consulting (1)	17/7/2011-23/7/2011 (6days)	---	HCM (QUATEST3)	T. Yamaguchi	
		23/7/2011-28/7/2011 (6days)	---	Ha Noi (QUATEST1)		
	EMC Testing (Electronic Product)	15/7/2012-21/7/2012 (7days)	---	HCM (QUATEST3)	H.Kajiwara	JQA
	EMC Testing (Electronic Product)	18/7/2012-26/7/2012 (9days)	---	HCM (QUATEST3)	E.Saegusa	JQA
	Accreditation (EE Product)	6/8/2012-11/8/2012 (6days)	---	HCM (QUATEST3)	H.Ishige	NITE
		11/8/2012-17/8/2012 (6days)	---	Ha Noi (QUATEST1)		
	Accreditation (EE Product)	6/8/2012-11/8/2012 (6days)	---	HCM (QUATEST3)	D.Sugawara	NITE
		11/8/2012-17/8/2012 (6days)	---	Ha Noi (QUATEST1)		
	Accreditation (EE Product)	6/8/2012-11/8/2012 (6days)	---	HCM (QUATEST3)	M.Sato	JET
		11/8/2012-21/8/2012 (10days)	---	Ha Noi (QUATEST1)		
	Accreditation (EMC)	29/8/2012-7/9/2012 (10days)	---	HCM (QUATEST3)	S.Kobayashi	VLAC
	Accreditation (EMC)	29/8/2012-7/9/2012 (10days)	---	HCM (QUATEST3)	K.Osabe	VLAC

ANNEX 6

List of Machinery and Equipment

1. Electrical and Electronic Equipment

as of 28.11.2012

No.	Name of Equipment	Specification	Delivery Place	Brand/Manufactrer	Quantity
1	Temperature controlled room (60335-1)	- Temperature (40 ± 2) °C - Dimensions: 3x3x3 (mxmxm)	QUATEST1 QUATEST3	none	2
2	Standard test pans (60335-2-6 Fig.101)	Flat based alminium vessel Concavity of the base: ≤0.05mm The base is not convex ①Φ110mm ②Φ145mm ③Φ180mm ④Φ220mm ⑤Φ300mm	QUATEST1 QUATEST3	none	2
3	Vessel for induction hob element (60335-2-6 Fig.102)	Low carbon steel vessel (Carbon cntent: ≤0.08%) Concavity of the base: not more than 0.006 times diameter of the flat area of the base The base is not convex ①Φ145mm ②Φ180mm ③Φ220mm ④Φ300mm	QUATEST1 QUATEST3	none	2
4	1.8kg test vessel	Cupper vessel, Ø120±10mm base, R≥10mm edge	QUATEST1 QUATEST3	none	2
5	Wooden sphere (60335-2-23)	Dull blacke-painted wooden sphere D=200mm	QUATEST1 QUATEST3	none	2
6	Wire frame (60335-2-23 Fig.101)	Ø200mmxH110mm Frame consisting of 32 equally spaced wires Ø1.5mm±0.5mm	QUATEST1 QUATEST3	none	2
7	Micro Oven Door endurance tester (60335-2-25)	AMT101	QUATEST1 QUATEST3	Anh Minh Technical JSC	2

8	HV test facilites (60335-1)	- Power (Transformer capacity) : 500VA - Output voltage gange : AC0.05kV to 5kV(100mA) - Output voltage range : DC0.05kV to 6kV(10mA) - Leakage current (Max rate current) : 100mA	QUATEST1 QUATEST3	Kikusui TOS9201	2
9	Horizontal and vertical burning test apparatus (60335-1)	- Overall height of blue flame:125±5mm (adjustable) - Height of Inner blue cone : 40mm (adjustable) - Length of burner tube:100±10mm - Inner diameter of tube : 9.5±0.5mm * Systems contruction: 1.Chamber BT-07 2.UL burner UB-095 3.UL burner stand ULD-901 4.Primary pressure controller 5.Secondary Pressure Controller 6.Gas horse 7.Horse band 8.Flame gauge 9.Temperature meter with timer 10.Copper block 11.Thermo couple	QUATEST1 QUATEST3	Excel inc	2
10	Free fall test apparatus (IEC 60068-2-32)	Number of fall: 50-1000 (adjustable) Fall haight: 500mm Fall rate: Approx. 10min Power supply AC:220V	QUATEST1	Excel inc RC-3400II	1
11	Needle flame test apparatus (IEC 60695-2-2)	- Burner size : Inner diameter 0.5±0.1mm - Burner size : Outside diameter 0.9mm max - Flame hight : 12±2mm	QUATEST3	Excel inc. ①Needle flame burner NB-005	1
12	Regulated AC power supply	- Single-phase 2 kVA to 20 kVA, Three-phase 6 kVA to 60 kVA. Single-/Three-phase switchable - AC output voltage: 0 to 150 V/0 to 300 V, Frequency: 5 Hz to 1100 Hz, DC output voltage: 0 to + 203 V / 0 to + 406 V - Measuring funtion: rms value of volatge: resolution of 0.1V, AC accuracy of ± 1%, DC accuracy of ±3% (480V range); peak value of voltage: resolution of 0.1V, AC/DC accuracy of ±3% (480V range) rms value of current: resolution of 0.01A (80A range) / 0.1A (800A range), AC accuracy of ±1%, DC accuracy of ±3%; peak value of current: resolution of 0.01A (80A range) / 0.1A (800A range), AC/DC accuracy of ±3% - Effective power: resolution of 0.1W (2kW range) / 1W (20kW range) / 10W (200kW range); accuracy of ±(1.5% rdg + 0.2%FS)	QUATEST1 QUATEST3	NF ES2000S	4

13	Temperature Recorder	- 20 ch, Expandable up to 200 ch by unit of 20 ch - Trigger or Sampling input 1ch, Logic or Pulse input 4 ch (external input) - Sampling intervel: Trigger or Sampling input 1ch, Logic or Pulse input 4 ch - Operating environment: 0 °C to 45°C, 5 % to 85 % RH (When operating with battery pack 0 °C to 40 °C, charging battery 15 °C to 35° C) - Power source: AC adapter (100 V to 240 V, 50/60 Hz); DC power (8.5 V to 24 V DC, max. 26.4 V), Battery pack - Voltage Temperature: 20, 50, 100, 200, 500 mV, 1, 2, 5, 10, 20, 50 V, and 1-5 V /F.S. Thermocouple: K, J, E, T, R, S, N, and W (WRe5-26); Resistance Temperature Detectors (RTDs): Pt100, JPt100 (JIS), Pt1000 (IEC751) - Humidity: 0 to 100% (using humidity sensor (B-530 optional), power is supplied to only one sensor) - Measurement accuracy: + Themocouble R/S: 0 °C ≦ TS ≦ 100 °C; 100 °C ≦ TS ≦ 300 °C; R: 300 °C ≦ TS ≦ 1600 °C; S: 300 °C ≦ TS ≦ 1760 °C; + Thermocouble B: 400 °C ≦ TS ≦ 600 °C; 600 °C ≦ TS ≦ 1820 °C; + Thermocouble K: -200 °C ≦ TS ≦ -100 °C; -100 °C ≦ TS ≦ 1370 °C; + Thermocouble E: -200 °C ≦ TS ≦ -100 °C; -100 °C ≦ TS ≦ 800 °C + Thermocouble T: -200 °C ≦ TS ≦ -100 °C ; -100 °C ≦ TS ≦ 400 °C + Thermocouble J: -200 °C ≦ TS ≦ -100 °C; -100 °C ≦ TS ≦ 100 °C; 100 °C ≦ TS ≦ 1100 °C + Thermocouble N: 0 °C ≦ TS ≦ 1300 °C + Thermocouble W: 0 °C ≦ TS ≦ 2000 °C + Pt100: -200 °C to 850 °C + JPt100: -200 °C to 500 °C + Pt1000: -200 °C to 500 °C	QUATEST1 QUATEST3	Graptec Corporation GL820	8
14	Plug pin Abrasion resistance test machine (IEC 60335-1, IEC 60884-1)	- Abrasion length : Adjustable - Operation speed : 30 movement per minute - Power supply : AC 220V 1A	QUATEST1	Yasuda Seiki	1
15	Protection against access to live parts (Fig. 8 of IEC 61032)	- Cylindrical pin Φ4 length 50mm	QUATEST1 QUATEST3	Excel inc. Test probe P-050/40	2
16	Probe for measurement of surface temperature (Fig. 104 of IEC 61032)	- Thermocouple wire : 0.3mm Type K - Contact force : 4N ± 1N - Polycarbonate tube: 3mm outside diameter 5mm	QUATEST1 QUATEST3	Anritsu keiki Basic SW0350 model	2
17	Test Probe 18 of IEC 61032	- Small finger probe Φ8.6	QUATEST1 QUATEST3	Excel inc.	2

18	High voltage probe	- High voltage probe - Voltage renge : 1.5kV to 20kV - Bandwidth : DC to 75MHz	QUATEST1 QUATEST3	Tektronix P6015A	2
19	Microwave Survey meter	- Frquency : 2450MHz - Range (mw/ c ㎡) : 0-2,0-10,0-100 - Max input level : 200mw/ c ㎡ - Power supply : Battery operation (9V × 2)	QUATEST1 QUATEST3	ETS · LINDGREN HI-1501	2
20	Torque levels with test holders according fig 2 and 3	- Capacity:10～100cN.m/1～10kgf.cm (0.1N · m～1N · m) With memory pointer type	QUATEST1 QUATEST3	Tonichi 2TM100CN-S	2
21	Angle measuring device, torque tester, heating cabinet, equipment to apply axial pull and bending moment	- Capacity 10～100cN.m/1～10kgf.cm (0.1N · m～1N · m) With memory pointer type	QUATEST1 QUATEST3	Tonichi 2TM100CN-S	2
22	High frequency power supply	- Input voltage : 3p 380V - Input frequency : 47～63Hz - Output capacity : 3kVA/2.4kW - Output phase : Single - Output voltage : 10～500V - Output max current : 6A - Output frequency : 50/60Hz or 100～120Hz Variable - Size: W700 D800 H1200; Weight : 300kg (Approx.)	QUATEST1 QUATEST3	Yamabishi SYN-3KHRX	2
23	Flexing appartatus, pulleys made of metal with different diameters	- DUT size : 0.5～4㎟ - Trailer speed: 0.33m/sec - Trailer distance : More than 1.0m - Weight : 500g (with stopper) ×2、1Kg×2、500g×2 - Roller size (mm Φ) : 60、80、120、200 - Pully size : 8Type 32pcs - Drive motor : H2LB-32R30-075 (Include magnet brake) - Electric load : 0.1～30A (each phase) - Power supply : AC380V 3P 20kVA (star connection)	QUATEST1	Yasuda seiki No.262	1
24	Bending test apparatus moving through 180° Angel and flexing rate of 60 per minute, - weight 0,5kg, current load 0,1 A.	- Moving angle : 120°、180° (Selectable) - Flexing rate : 60cycle/min - Current load : 0.1A - Cycle counter : 6 digit preset type counter - Power supply : AC220V 10A - Weight : 0.5kg	QUATEST1	Yasuda Seiki CORD FLEXING TESTER No.254	1

25	Tensile machine, equipment for punching dumb-bell test pieces and equipment for cutting or qrinding the insulation or/and sheath to obtain 2 parallel surfaces.	- Working width(mm):320 - Minimum splitting thickness (mm) : 0.5 - Maximum splitting thickness (mm) : 8.0、20 (optional) - Power supply : 380V 3P 3.8kVA - Dimensions (cm) : L140、W100、H130 - Net weight (kg) : 510 - ZL696G Sound absorber for scrap suction. - ZL696/G2 Suction device for grinding dust. - ZL696/A Lubrication device. - ZL696/K14 Increased thickness clearance 20mm,Teflon coated table. without rear protection cover 696-K5	QUATEST1 QUATEST3	Fortuna AB320G	2
26	Air oven with natural air flow, airflow rate: 8...20 complete air changes per hour. A fan shall not be used insde the oven	- Maximum temperature:250℃ - Air flow late : 8-20cycle per hour - Inside dimension(mm) : W610、L525、H455 - Include air change meter	QUATEST1 QUATEST3	Yasuda Seiki No. 102	2
27	Cold bend test apparatus consisting essentially of a revolving mandrel and guiding devices for the test pieces. (IEC 60811-1-4 Sub Clause 8.3)	- Speed: 25±5mm/m - Temperature: <-15ºC - Only jig unit	QUATEST1	Yasuda Seiki No. 273	1
28	Tensile machine with a cooling device or elongation machine installed in a cooling chamber (IEC 60811-1-4 Sub Clause 8.3)	- Max load: 200kgf (2kN) - Test speed: 0.1 to 600mm/min - Stroke: 700mm - Display resolution: 0.01mm - Display accuracy: 0.1mm - Max display: 700mm - Column interval: 350mm - Table diameter: 300mm - Size: 600Wx1340Hx540D mm - Weight: Approx 125 kg - 100V AC, 1phase, 5A	QUATEST1 QUATEST3	Aikoh Eng. 1840VT/200	2
29	Impact test apparatus, hammers, pad of sponge rubber. (IEC 60811-1-4 Sub Clause 8.5, Fig. 2)	- Initial 3kg～Max.40kg - 300～1,300mm (Pitch 100mm) - Double impact protecting: Ratchet-operated - AC220V 1-phase 5A 50/60Hz - Dim: W820xD550xH2,000mm - Weight: 150kg	QUATEST1	Yasuda Seiki No.124	1
30	Thermostatically controlled heater for 200±0,5°C. (IEC 60811-3-2 Sub Clause 9)	- According IEC 60811-3-2	QUATEST1 QUATEST3	Yasuda Seiki No. 9000	2
31	Gauges according to IEC 60061-1 and IEC 60061-3	Gauges for E27 type receptacle inspection	QUATEST1 QUATEST3	Excel inc. E-27	2
32	Gauges according IEC 60061-1 and 60061-3	Gauges for G13 type fluorescent lamps inspection	QUATEST1 QUATEST3	Excel inc. G13	2
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2. Equipment for EMC Testing

1) 1-18GHz Radiated Emission Measurement - Hệ thống đo nhiễu phát xạ

Item Hạng mục	Model No. Số hiệu mẫu mã	Spec Yêu cầu kỹ thuật	maker Nhà sản xuất	set Số lượng
EMI Test Receiver Máy thu nhiễu	ESU26	20Hz-40GHz	JAPAN Nhật Bản	1
Tracking generator Máy phát dò kênh	FSU-B9	100kHz-3.6GHz	JAPAN Nhật Bản	1
Attenuator of Tracking generator Chỉnh lưu máy phát dò kênh	FSU-B12		JAPAN Nhật Bản	1
Pre-amplifier Bộ tiền khuếch đại	TPA0118-36	1-18GHz, Gain 36dB, NF 2.8dB	JAPAN Nhật Bản	1
Double ridge Horn Antenna Ăng ten cao tần đôi ridge horn	3115	1-18GHz	JAPAN Nhật Bản	1
RF Selector Bộ chọn lọc tần số rađiô	NS4905N	5 channel	JAPAN Nhật Bản	1
Radiated emission automatic operation measurement software	EP5/RE		JAPAN Nhật Bản	1
System Cable Cáp hệ thống	-		JAPAN Nhật Bản	1
GPIB Interface Cạc giao diện máy tính GPIB	GPIB-USBHS		JAPAN Nhật Bản	1
System Controller Máy tính điều khiển hệ thống	-	19inch LCD, Printer	JAPAN Nhật Bản	1
CAL ESU26 Tài liệu hiệu chuẩn ESU26	CAL11-ESU26	CAL ISO17025	JAPAN Nhật Bản	1
CAL TPA0118 Tài liệu hiệu chuẩn TPA0118	CAL11-TPA0118	CAL ISO17025	JAPAN Nhật Bản	1
CAL 3115 Tài liệu hiệu chuẩn 3115	CAL-3115	CAL ISO17025	JAPAN Nhật Bản	1

2) SVSWR Measurement System - Hệ thống đo tỉ lệ truyền sóng

Item Hạng mục	Model No. Số hiệu mẫu mã	Spec Yêu cầu kỹ thuật	maker Nhà sản xuất	set Số lượng
Network Analyzer Bộ phân tích mạng	E5071C		JAPAN Nhật Bản	1

2port test set Bộ thử 02 cổng	E5071C-2K5	300kHz-20GHz	JAPAN Nhật Bản	1
3.5mm Economy Calibration Kit Bộ Kit hiệu chuẩn 3.5 mm	85052D	26.5GHz	JAPAN Nhật Bản	1
POD16,POD618 Bộ phụ kiện đo	SVSWR-SET	1-6, 6-18GHz	JAPAN Nhật Bản	1
Phụ kiện	MP-6G-W		JAPAN Nhật Bản	1
Antenna Positioner Soft Phần mềm điều khiển vị trí ăng ten	PP700		JAPAN Nhật Bản	1
System cable Cáp hệ thống	-		JAPAN Nhật Bản	1
GPIB Interface Cạc giao diện máy tính GPIB	GPIB-USBHS		JAPAN Nhật Bản	1
System Controller Máy tính điều khiển hệ thống	-	19inch LCD, Printer	JAPAN Nhật Bản	1
Radio Wave Absorbers Vật liệu hấp thụ sóng rađiô	-		JAPAN Nhật Bản	20
CAL E5071C Tài liệu hiệu chuẩn CAL E5071C	E5071C-1A7	CAL ISO17025	JAPAN Nhật Bản	1

3) ISN and Current Probe - Mạng ổn định trở kháng và đầu dò cường độ

Item Hạng mục	Model No. Số hiệu mẫu mã	Spec Yêu cầu kỹ thuật	maker Nhà sản xuất	set Số lượng
Impedance stabilization network Mạng ổn định trở kháng	ISN T2A		JAPAN Nhật Bản	1
Impedance stabilization network Mạng ổn định trở kháng	ISN T4A		JAPAN Nhật Bản	1
Impedance stabilization network Mạng ổn định trở kháng	ISN T8		JAPAN Nhật Bản	1
Impedance stabilization network Mạng ổn định trở kháng	ISN T8 Cat 6		JAPAN Nhật Bản	1
Impedance stabilization network Mạng ổn định trở kháng	ISN ST08		JAPAN Nhật Bản	1
EZ-17/02 Đầu dò cường độ EZ-17/02	EZ-17/02		JAPAN Nhật Bản	1

Conducted emission automatic operation measurement software	EP/CE		JAPAN Nhật Bản	1
Conducted emission automatic operation measurement software	EP5/ME		JAPAN Nhật Bản	1
System Cable Cáp hệ thống	-		JAPAN Nhật Bản	1
GPIB Interface Cạc giao diện máy tính GPIB	GPIB-USBHS		JAPAN Nhật Bản	1
System Controller Máy tính điều khiển hệ thống	-	19inch LCD, Printer	JAPAN Nhật Bản	1
CAL Impedance stabilization network Tài liệu hiệu chuẩn	ISN T2A	CAL ISO17025	JAPAN Nhật Bản	1
CAL Impedance stabilization network Tài liệu hiệu chuẩn	ISN T4A	CAL ISO17025	JAPAN Nhật Bản	1
CAL Impedance stabilization network Tài liệu hiệu chuẩn	ISN T8	CAL ISO17025	JAPAN Nhật Bản	1
CAL Impedance stabilization network Tài liệu hiệu chuẩn	ISN T8 Cat 6	CAL ISO17025	JAPAN Nhật Bản	1
CAL Impedance stabilization network Tài liệu hiệu chuẩn	ISN ST08	CAL ISO17025	JAPAN Nhật Bản	1
CAL-EZ17 Tài liệu hiệu chuẩn đầu dò EZ17	-	CAL ISO17025	JAPAN Nhật Bản	1

4) Dipole Antenna and Sweep Antenna - Ăng ten lưỡng cực và ăng ten quét

Item Hạng mục	Model No. Số hiệu mẫu mã	Spec Yêu cầu kỹ thuật	maker Nhà sản xuất	set Số lượng
Dipole Antenna Ăng ten lưỡng cực	VHAP	30-300MHz	JAPAN Nhật Bản	1
Dipole Antenna Ăng ten lưỡng cực	UHAP	300-1000MHz	JAPAN Nhật Bản	1
Signal Generator Máy phát tín hiệu	N5183A		JAPAN Nhật Bản	1
Frequency Range Dải tần số	N5183A-520	100kHz-20GHz	JAPAN Nhật Bản	1
Step Attenuator Bộ chỉnh lưu bước tần số	N5183A-1E1		JAPAN Nhật Bản	1

AM/FM/PM Bộ AM/FM/PM (sóng rađiô)	N5183A-UNT		JAPAN Nhật Bản	1
Pulse Modulator Bộ tạo xung	N5183A-UNU		JAPAN Nhật Bản	1
Antenna holder/Balun Giá đỡ ăng ten	VHBB 9124		JAPAN Nhật Bản	2
Biconical Antenna Ăng ten Biconical	BBA 9106	30-300MHz	JAPAN Nhật Bản	2
Logperiodic Ăn ten tuần hoàn logperiodic	UHLP 9108A	250-2400MHz	JAPAN Nhật Bản	2
Software for Site Attenuation Phần mềm đo hấp thụ buồng thử	EP5/NSA		JAPAN Nhật Bản	1
System Cable Cáp hệ thống	-		JAPAN Nhật Bản	1
GPIB Interface Cạc giao diện máy tính GPIB	GPIB-USBHS		JAPAN Nhật Bản	1
System Controller Máy tính điều khiển hệ thống	-	19inch LCD, Printer	JAPAN Nhật Bản	1
CAL 11-N5183A Tài liệu hiệu chuẩn	CAL11-N5183A	CAL ISO17025	JAPAN Nhật Bản	1
CAL-VHBB9124/BB9106 Tài liệu hiệu chuẩn	CAL-VHBB9124/BBA9106	CAL ISO17025	JAPAN Nhật Bản	2
CAL-UHALP9108A Tài liệu hiệu chuẩn	CAL-UHALP9108A	CAL ISO17025	JAPAN Nhật Bản	2

5) Synthetic resin table

Synthetic resin table Measurement table for EMC testing	Material: SEKISUI PLASTIC CO.,LTD. "PIOCELAN"	size: table top W1500xD1000xH400mm stand: W500xD1000xH400mm	JAPAN Nhật Bản	1

ANNEX 7

Project on Strengthening the System and Operation on Standards and Conformance (STAMEQ)

List of training in Japan:

as of 28.11.2012

Year	Technical Field or Course Title 研修コース名	Course Contents 研修概要	Course Schedule 開始日、終了日	name of participants 研修員氏名	Position 研修員職位	Department/Division 研修員所属部署
2009	ASEAN International Standards Development 国別研修「アセアン国際標準開発」	In the three-year training program, participants are expected to formulate plans to establish governmental support systems which can properly lead international standardization activities mainly done by industrial sectors in respective countries.	28/11/2009-10/12/2009	Mr. Tran Van Vinh	Deputy Director General	STAMEQ
				Mr. Ngo Tat Thang	Acting Director	International Cooperation Department, STAMEQ
				Mr. Luong Van Phan	Deputy Director	Vietnam Standards and Quality Center(VSQC), STAMEQ
	ASEAN Product Certification (IECEE/CB Scheme) 国別研修「製品認証 (IECEE/CBスキーム) 実践コース」	The participating organizations are expected to establish or acquire management system and the proficiancy testing and audit techniques needed for the IECEE/CB scheme and its stable management.	28/11/2009-6/12/2009	Mr. Nguyen Nam Hai	Director	QUACERT, STAMEQ
				Mr. Nghiem Hai Thanh	Specialist	Conformity Assesment Dept., STAMEQ
				Mr. Nguyen Vu	Deputy Director	Audit and Management Dept., QUATEST 1, STAMEQ
		Total 6 CPs in JFY2009 平成21年度合計6名				
2010	Testing on electrical and electronic equipment 国別研修「家電試験」	Testing techniques on 12 household electrical appliances regulated in Vietnam according to relevant IEC standards	13/6/2010-31/7/2010	Mr. Bui Anh Tuan	Testing Engineer	Electric and Electronic Testing Laboratory, QUATEST 1, STAMEQ
				Mr. Nguyen Danh Hoa	Chief, maneger	Electric and Electronic Testing Laboratory, QUATEST 1, STAMEQ
				Mr. Nguyen Van Loi	Testing Engineer	Electric and Electronic Testing Laboratory, QUATEST 1, STAMEQ
				Ms. Ho Nguyen Thuy Tram	Staff	Electrical Testing Laboratory, QUATEST 3, STAMEQ
				Mr. Huynh Huynh Hong Phuong	Staff	Electrical Testing Laboratory, QUATEST 3, STAMEQ
				Mr. Luong Trong Si	Staff	Electrical Testing Laboratory, QUATEST 3, STAMEQ
	Certification for Viet Nam 国別研修「認証」	Study of EE product certification procedures including observing factory audit.	17/10/2010-30/10/2010	Mr. Giang Minh Duc	Head of certification accreditation scheme	Certification Accreditation Scheme, BOA
				Mr. Nguyen Trong Hien	Manager Department	Product Certification Department, QUATEST 1, STAMEQ
				Mr. Nguyen Van Quyen	Staff/ Lead Auditor	Product Certification, QUACERT, STAMEQ

2010	ASEAN International Standards Development 課題別研修「アセアン国際標準開発」	In the three-year training program, participants are expected to formulate plans to establish governmental support systems which can properly lead international standardization activities mainly done by industrial sectors in respective countries.	17/10/2010-6/11/2010	Ms. Vu Thi Hong Hanh	Senior Officer	Department of Standards, STAMEQ
				Ms. Ngo Thi Ngoc Ha	Deputy Director of Institute	Vietnam Standards and Quality Institute (VSQI), STAMEQ
				Ms. Nguyen Thi Mai Sinh	Senior Official	International Cooperation Department, STAMEQ
	Product Certification (IECEE/CB Scheme) for ASEAN Countries (For Trade Facilitation) 国別研修「アセアン製品認証(IECEE/CBスキーム) 実践コース」	The participating organizations are expected to establish or acquire management system and the proficiancy testing and audit techniques needed for the IECEE/CB scheme and its stable management.	7/11/2010-27/11/2010	Mr.Tran Quoc Dung	Head of Department	System Certifcation Department, QUACERT, STAMEQ
				Ms. Nguyen Thi Mai Huong	Senior Officer	Conformity Assesment Department, STAMEQ
				Mr. Dang Thanh Tung	Electric - Electronic Testing Engineer - Quality manager	Electric and Electronic Testing Laboratory, QUATEST 1, STAMEQ
				Mr. Truong Van Thach	Techincal Manager	EE & Telecom Inspection Department, QUATEST 3, STAMEQ
	Electric Cable Testing for Viet Nam 国別研修「電線・ケーブル試験」	This program intended to study testing methods according to relevant IEC standards for wire and cable to acquire testing skill.	28/11/2010-18/12/2010	Mr. Nguyen Mung	Staff	Electrical Testing Lab, QUATEST3, STAMEQ
				Mr. Bui Anh Tuan	Testing Engineer	Electric and Electronic Testing Laboratory, QUATEST 1, STAMEQ
	EMC Testing for Viet Nam 国別研修「EMC試験」	This program is intended to study EMC testing methods to acquire testing skill.	23/1/2011-26/2/2011	Mr. Luong Trong Si	staff	EMC Testing Laboratory, QUATEST3, STAMEQ
				Mr. Le Phung Vinh Phuc	staff	EMC Testing Laboratory, QUATEST3, STAMEQ
	Electric and Electronic Product Certification Systems in Japan 国別研修「日本の電気電子製品認証制度」	This program is intended to study a various kinds of certification systems relating to the electrical and electronic products established to assure their safety, quality and performance in Japan.	6/3/2011-16/3/2011	Mr. Vu Xuan Thuy	Director	BOA
				Mr. Hoang Lam	Vice Director	Directory Board, QUATEST3, STAMEQ
				Mr. Kim Duc Thu	Deputy Director	QUATEST1, STAMEQ

Total 23 CPs in JFY2010
平成22年度合計23名

2011	ASEAN International Standards Development 課題別研修「アセアン国際標準開発」	In this training program, the participating organizations are expected to formulate plans to establish industrial driven systems in cooperation with governmental support which can properly lead international standards activities mainly done by the industrial sectors in the respective countries.	16/10/2011-5/11/2011	Mr. Nguyen Hai Anh	Head of division	Standards and Quality Division on Information and Communication Technology (ICT), VSQI, STAMEQ
				Ms. Pham Thi Thanh Tam	Staff	Consultancy and Scientific and Technological Services Division, VSQI, STAMEQ
				Ms. Nguyen Thi Thu Thuy	Staff	Standards and Quality Division on Consumer Products, VSQI, STAMEQ
	Product Certification (IECEE/CB Scheme) for ASEAN Countries (For Trade Facilitation) 課題別研修「アセアン製品認証 (IECEE/CBスキーム) 実践コース」	The participating organizations are expected to establish or acquire management system and the proficiancy testing and audit techniques needed for the IECEE/CB scheme and its stable management.	6/11/2011-23/11/2011	Mr. Dinh Ngoc Long	Lead Auditor	Product Certification Department, QUACERT, STAMEQ
	EMC Testing Laboratory Accreditation 国別研修「EMC試験所認定」	This program is intended to study how to apply ISO/IEC 17025 to EMC testing laboratories.	8/2/2012-16/2/2012	Mr.Nguyen Van Khan	Chief	RF Testing and Measurement Division, Authority of Radio Frequency Directorate, BOA
				Mr.Dang Quoc Quan	Assessor	Head of Laboratory Group, BOA
				Mr.Le Manh Hong	Assessor	BOA
				Mr.Luong Trong Si	Manager	EMC Testing Laboratory, QUATEST3, STAMEQ

Total 8 CPs in JFY2011
平成23年度合計8名

2012	International Standards Development (A) (ASEAN) 課題別研修「国際標準開発(A)(アセアン)」	In this training program, the participating organizations are expected to formulate plans to establish industrial driven systems in cooperation with governmental support which can properly lead international standards activities mainly done by the industrial sectors in the respective countries.	1/7/2012- 14/7/2012	Ms. Sang Thi Pham	Chief	Section on Food and Agricultural Products, VSQI, STAMEQ
				Mr.Hung Thanh Le	Staff	Section on Food and Agricultural Products, VSQI, STAMEQ
	ASEAN Conformity Assesment of Electrical and Elrctronic Equipment (IECEE CB Scheme) 課題別研修「アセアン電気・電子製品適合性評価(IECEE CBスキーム)」	In this training program, the participating organizations are expected to build foundations for promoting and expanding the conformity assessment (CA) activities of electrical and electronic (EE) products in conformity assessment bodies (CABs) and laboratories by, 1.Understanding the knowledge of accreditation and certification system necessary to ensure compliance with international standards for EE products, 2.understandimg testing, assessing QMS and factory audit/inspection, 3.recognizing the importance of the IECEE CB Scheme, 4.and acquiring the necessary knowledge to participate the IECEE CB Scheme and ensure stable business operations.	26/8/2012- 8/9/2012	Mr.Truong Van Thach	Technical Manager	EE & Telecom Inspection Department, QUATEST3, STAMEQ
				Mr.Tung Thanh Do	Official	Conformity Assesment Department, STAMEQ
				Mr.Cuong Manh Pham	Lead Auditor	Training Department, QUACERT, STAMEQ
	Accreditation of EE Product Certification Body 国別研修「電気関係製品認証機関」	This program is intended to study the accreditation activities for EE product certification bodies under compulsory and voluntary EE product certification system such as "Electrical Appliances and Material Law" and "Industrial Standardization Law", managed according to the related IEC/ISO standards and guides such as ISO/IEC G65, G67, 17025 and so on, in the field of conformity assessment in Japan.	26/8/2012- 5/9/2012	Ms.Tran Thi Thu Ha	Deputy Director	Management Board, BOA
				Ms.Hoang Thanh Duong	Lead Assessor	Vietnam Certification Board(VICAS), BOA
				Mr.Nguyen Dinh Quyen	Official	Conformity Assesment Department, STAMEQ

Total 8 CPs in JFY2012
平成23年度合計8名

Total 45 CPs
総合計45名

ANNEX 8

Schedule of the Terminal Evaluation Survey

Date	Time	Activities	
		Ms. Shindo (Monitoring & Evaluation)	**Mr. Homma (Mission Leader), Mr. Nishimoto (Standards and conformance policy), Mr. Maezaki (Cooperation planning)**
15-Nov (Thu)	14:30	Arriving at Hanoi (VN 311)	
16-Nov (Fri)	8:30-10:00 10:00-11:30	Meeting with Project Meeting with BOA	
17-Nov (Sat)		Organizing Data and Materials	
18-Nov (Sun)		Organizing Data and Materials	
19-Nov (Mon)	9:00-10:00 10:00-11:00 11:00-12:00 13:00-13:45 13:50-14:30 14:30-15:30 15:30-16:40	Meeting with STAMEQ International Dept. Meeting with QUATEST1 Meeting with VSQI ex-JICA trainees Meeting with Chief Advisor of Project Meeting with QUACERT Meeting with QUATEST1 Meeting with VSQI	
20-Nov (Tue)	8:30-10:00 10:10-11:00 13:30-15:00	Meeting with STAMEQ Standard Dept. Meeting with STAMEQ Conformity Assessment Dept. Meeting with VMI	
21-Nov (Wed)	9:00-10:30 13:00-14:00	Meeting at PANASONIC Ferroli Indochina Co., Ltd. Transport Hanoi(17:00) to HO CHI MINH(19:00) (VN1155)	
22-Nov (Thu)	8:30-10:30 13:30-15:00	Meeting at QUATEST3 HQ Meeting at QUATEST3 Lab.	Arriving at HO CHI MINH 14:25 (VN 301)
23-Nov (Fri)	8:30-11:00 12:00-15:30 14:30-18:00	Meeting at QUATEST3 Observation QUATEST 3 Lab. Visit JICA HCM office	
24-Nov (Sat)	14:00-17:00	Team Meeting	
25-Nov (Sun)		Transport HO CHI MINH(11:30) to Hanoi (13:30) (VN1136) Team Meeting	

26-Nov (Mon)	9:00-11:30	Kick off Meeting -Discussion with STAMEQ, VSQI, QUATEST1, QUACERT and BOA -Discussion on Minutes of Meeting
27-Nov (Tue)	10:30-11:30	Courtesy call on Vice Minister of MOST
28-Nov (Wed)	8:30-10:30 17:00-18:00	JCC/Signing Minutes of Meeting with STAMEQ and BOA Meeting at JETRO Hanoi
29-Nov (Thu)	am 13:30 15:00	Visit Hoa Lach Hightech Park Report to Embassy of Japan Report to JICA Viet Nam office
30-Nov (Fri)		Leaving Hanoi (00:10) to Narita (07:00) (VN310)

ANNEX 9

List of Attendants

Organization	Name	Position	Position for Project
JICA Mid-Term Review Team	Mr. Toru Homma	Mission Leader	
JICA Mid-Term Review Team	Mr. Mitsunori Nishimoto	Member (Standards and conformance policy)	
JICA Mid-Term Review Team	Ms. Yumi Shindo	Member (Review Analysis)	
JICA Mid-Term Review Team	Mr. Wataru Maezaki	Member (Review planning)	
JICA Viet Nam Office	Mr. Toshio Nagase	Senior Representative	
JICA Viet Nam Office	Mr. Naomichi Murooka	Representative	
JICA-STAMEQ Project	Mr.Norio Ishizaki	Chief Advisor	
JICA-STAMEQ Project	Mr.Masahiko Ozaki	Long-term Expert	
JICA-STAMEQ Project	Mr. Masafumi Saito	Coordinator	
Ministry of Science and Technology (MOST)	Mr.Tran Viet Thanh	Deputy-Minister	
Ministry of Science and Technology (MOST)	Ms. Trieu Thi Bao Hoa	Deputy Head, Asia Africa Division, International Cooperation Department	Co-reviewer
Directorate for Standards Metrology and Quality (STAMEQ)	Dr. Ngo Quy Viet	Director General	JCC Chairman, R/D signer
STAMEQ	Mr. Tran Van Vinh	Deputy Director General	Project Director
International Cooperation Department, STAMEQ	Dr. Vu Van Hong	Deputy Director (in charge)	Project Manager
International Cooperation Department, STAMEQ	Ms. Nguyen Mai Sinh	Senior officer	Support staff
International Cooperation Department, STAMEQ	Ms. Vu Thi Tu Quyen	Senior officer	Support staff
Conformity Assessment Department, STAMEQ	Mr. Do Thanh Tung	Senior officer	
Conformity Assessment Department, STAMEQ	Mr. Nguyen Dinh Quyen	Officer	
Standard Department, STAMEQ	Ms. Vu Thi Hong Hanh	Senior officer	
STAMEQ/QUATEST1	Mr. Kim Duc Thu	Deputy Director	
STAMEQ/QUATEST1	Mr. Nguyen Danh Hoa	Manager	
STAMEQ/QUATEST1	Mr. Bui Anh Tuan	Testing Engineer	
STAMEQ/QUATEST1	Mr. Bui Anh Tuan	Testing Engineer	
STAMEQ/QUATEST1	Mr. Nguyen Van Loi	Testing Engineer	
STAMEQ/QUATEST1	Mr. Nguyen Danh Hoa	Testing Engineer	
STAMEQ/QUATEST1	Mr. Nguyen Trong Hien	Manager	
STAMEQ/QUATEST1	Mr. Dang Thanh Tung	Quality Manager	
STAMEQ/QUATEST1	Ms. Bui Thi Huong	Quality Manager	
STAMEQ/QUATEST3 Head Quarters	Mr. Tran Van Dung	Director	

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STAMEQ/QUATEST3 Head Quarters	Mr. Pham Phuong Khanh	Promoton Executive	
STAMEQ/QUATEST3 Head Quarters	Ms. Dao Thi Nga	Promoton Executive	
STAMEQ/QUATEST3 Head Quarters	Mr. Truong Thanh Son	Mech.-Elec. Division Manager	
STAMEQ/QUATEST3 Laboratory	Mr. Dinh Van Tru	Deputy Director	
STAMEQ/QUATEST3 Laboratory	Mr. Nguyen Tan Tung	Head	
STAMEQ/QUATEST3 Laboratory	Ms. Linh	Head of Quality Manager	
STAMEQ/QUATEST3 Laboratory	Mr. Luong Trong Si	Head of EMC Lab.	
STAMEQ/QUACERT	Mr. Nguyen Nam Hai	Director	JCC Member
STAMEQ/QUACERT	Pham Manh Cuong	Lead Auditor	
STAMEQ/QUACERT	Mr. Tran Quoc Dung	Head of Dept.	
STAMEQ/QUACERT	Mr. Dinh Ngoc Long	Lead Auditor	
STAMEQ/QUACERT	Ms. Nguyen Thi Lan Anh	Staff	
STAMEQ/VSQI	Ms. Ngo Thi Ngoc Ha	Deputy Director	JCC Member
STAMEQ/VSQI	Ms. Bui Ngoc Bich	Head of Methodology Div.	
STAMEQ/VSQI	Mr. Nguyen Hai Anh	Head of Standards and Quality Division No. 7	
STAMEQ/VSQI	Mr. Le Thanh Hung	Staff	
STAMEQ/VSQI	Ms. Pham Thi Thanh Tam	Staff	
STAMEQ/VSQI	Ms. Pham Thi Sang	Head of Standards and Quality Division No. 4	
STAMEQ/VSQI	Ms. Nguyen Thi Thu Thuy	Staff	
BUREAU OF ACCREDITATION(BOA)	Mr. Vu Xuan Thuy	Director	JCC Member, R/D signer
BUREAU OF ACCREDITATION(BOA)	Dr. Tran Thu Ha	Deputy Director	JCC M/M signer
BUREAU OF ACCREDITATION(BOA)	Mr. Le Manh Hong	Assessor	
VIETNAM METOROLOGY INSTITUTE(VMI)	Mr. Duong Quoc Thao	Head of R&D Management Division	
VIETNAM METOROLOGY INSTITUTE(VMI)	Mr. Nguyen Ngoc Linh	Staff	
VIETNAM METOROLOGY INSTITUTE(VMI)	Ms. Nguyen Thi Ly	Staff	
VIETNAM METOROLOGY INSTITUTE(VMI)	Mr. Nguyen Duy Tam	Staff	
VIETNAM METOROLOGY INSTITUTE(VMI)	Mr. Trinh Minh Hoan	Staff	
VIETNAM METOROLOGY INSTITUTE(VMI)	Mr. Ngo Ngoc Anh	Staff	
VIETNAM METOROLOGY INSTITUTE(VMI)	Mrs. Phung Thi Kieu Linh	Staff	
VIETNAM METOROLOGY INSTITUTE(VMI)	Mr. Do Thanh Trung	Staff	

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ANNEX 10

Abbreviations

	English
APEC	Asia-Pacific Economic Cooperation
APLAC	Asia Pacific Laboratory Accreditation Cooperation
APLAC MRA	Asia Pacific Laboratory Accreditation Cooperation Mutual Recognition Arrangement
ASEAN EE MRA	ASEAN Sectoral Mutual Recognition Arrangement for Electrical and Electronic Equipment
BOA	Bureau of Accreditation
CB	Certification Body
CBTL(s)	CB Testing Laboratory
C/P	Counterpart Personnel
EMC	Electro-Magnetic Compatibility
EPA	Economic Partnership Agreement
IEC	International Electrotechnical Commission
ILAC	International Laboratory Accreditation Cooperation
ISO	International Organization for Standardization
JICA	Japan International Cooperation Agency
JCC	Joint Coordinating Committee
M/M	Minutes of Meetings
MOST	Ministry of Science and Technology
NCB	National Certification Body
PDM	Project Design Matrix
PO	Plan of Operation
QUACERT	Vietnam Certification Center
QUATEST	Quality Assurance and Testing Center
R/D	Record of Discussions
STAMEQ	Directorate for Standards, Metrology and Quality
TBT	Technical Barriers to Trade
TCVN	Viet Nam Standards (Tieu Chuan Viet Nam)
VSQI	Vietnam Standards and Quality Institute
WTO	World Trade Organization

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