



INTERNATIONAL SOLUTIONS GROUP
...local strategies, global reach...

FINAL COMPREHENSIVE REPORT

International Solutions Group's

**Evaluation of Iraqi Networking
Academies Project (INA)**

For UNESCWA
June - July 2008;
Revisions and Updates in October, 2008

Prepared by:
Stephen LeCompte, ISG Senior Associate
Eric Nigh, ISG Evaluation Overseer
Qabas Al-Khaledy, ISG Main Assessor

August 8, 2008
Revision – October 10, 2008

EXECUTIVE SUMMARY

The Iraqi Networking Academies Project (INA) in Iraq, which falls under the Unit on Emerging and Conflict Related Issues (ECRI), has been underway since 2004, made possible through ESCWA funding and coordinating personnel and resources. This type of initiative is generally a private-sector one, but the circumstances in Iraq (including security problems and under-developed IT culture) have precluded the program from taking flight without the assistance of ESCWA.

Now that ESCWA funding has ended, it is the task of Cisco and the administration of the RNAs in Iraq to ensure the continued and improved success and expansion of the program.

ISG has conducted site visits to all of the RNAs in Iraq, attended the INA end-of-project conference, and has met personally with a variety of key project stakeholders. The result of these meetings has been the identification of several issues that have impeded the full accomplishment of the goals of the project in terms of progress in the establishment of LNAs and numbers of students graduated.

The nature of the INA work up to now has been predominantly focused on the public sector for a variety of reasons. Had the project relied on private sector institutions, it would not have reached the degree of success it has reached today. However, now that the basic foundation has been laid, the project must adapt a more innovative approach to expanding further.

Most of the negative issues that have affected the project and slowed the growth of the program have been related to the fact that the INA centers are a new concept for the Iraqi public sector officials, who are unsure where the centers fit in their administrative and budgetary structures.

All of the four public-sector RNA's cited difficulties in the administration of the centers due to lack of a clearly defined Iraqi Government policy regarding such administration. There is some confusion as to how the centers should be treated as legal entities and which accounting policies should be applied. Thus, there are frequent and recurring problems having to do with the non-provision of certain needed resources in a timely manner.

Despite these challenges, the INA project overall has seen substantially successful in the creation of awareness of the importance of the project for the education of the upcoming generations. Most of the participating universities have integrated the Cisco curriculum into their requirements for computer science degrees. Baghdad University has gone further and made it a requirement for all students in all of its colleges to take the IT course.

ISG findings and recommendations are detailed below in sections 5 and 6, including general observations that apply to the program as a whole, along with specific points regarding each RNA and corresponding LNAs.

TABLE OF CONTENTS

EXECUTIVE SUMMARY	1
LIST OF ACRONYMS.....	4
FINAL COMPREHENSIVE REPORT	5
1. BACKGROUND	5
2. OBJECTIVES	5
3. METHODOLOGY	6
4. LIMITATIONS	7
5. FINDINGS.....	8
5.1 General Overview	8
5.2 General Challenges	10
5.3 Baghdad University RNA	12
5.4 Mansour University College RNA	18
5.5 Salahaddin (Erbil) University RNA	22
5.6 Mosul University RNA	28
5.7 Basra University RNA	34
6. RECOMMENDATIONS	39
6.1 General Overview	39
6.2 General Recommendations	40
6.2 Baghdad University RNA Recommendations.....	43
6.3 Mansour University RNA Recommendations	44
6.4 Salahaddin (Erbil) University RNA Recommendations	44
6.5 Mosul University RNA Recommendations.....	44
6.6 Basra University RNA Recommendations	45

Electronic Annexes

ANNEX 1: CISCO DATABASE REPORT – Wadih Zaatar – July 21, 2008

ANNEX 2: ISG RNA Survey Results and Data

LIST OF ACRONYMS

CATC – Cisco Academic Training Center

CCNA – Cisco Certified Network Associate

CCNP – Cisco Certified Network Professional

CNAP – Cisco Networking Academy Program

ESCWA – see UNESCWA

INA – Iraqi Networking Academies (project)

ISG – International Solutions Group

IT – Information Technology

LMC – Legal Main Contact, refers to the person administratively responsible for an academy

LNA – Local Networking Academy

RNA – Regional Networking Academy

UNESCWA – United Nations Economic and Social Commission for Western Asia

FINAL COMPREHENSIVE REPORT

International Solutions Group's

Evaluation of Iraqi Networking Academies Project

(June - July 2008)

1. BACKGROUND

The Iraqi Networking Academies (INA) project started in 2004 and was scheduled to conclude in December 2007. During this period the project was responsible for establishing five regional networking academies (RNAs) in different locations in Iraq, each of which was responsible for setting up a set of local networking academies (LNAs), for a total of 39 LNAs.

The networking academies are learning centers for Cisco educational courses, providing graduates with internationally recognized certification. The project was managed by the Beirut-based ESCWA Regional Advisor on Information and Communication Technology (ICT), assisted by a National Project Coordinator based in Baghdad and an ICT Specialist based in ESCWA. After the full establishment of all Academies, they were supposed to train and certify 50 instructors and 1500 students every year. To date, equipment has been purchased and shipped to Iraq, instructor training has taken place outside Iraq, and instructor and student trainings have been conducted at the RNAs and a portion of the LNAs.

International Solutions Group (ISG) was contracted by ESCWA to perform an assessment of the INA project. The main purpose of this evaluation of the INA project is to assess the performance and achievements of the project stakeholders and partners from August 2004 project inception up to the June 2008 date of evaluation. This assessment will also serve as a new starting point for the next phase of ICT projects in Iraq, whereby lessons learned from this project will directly affect the performance of future projects in Iraq.

2. OBJECTIVES

The objectives of this evaluation were established as follows:

- Evaluate academy equipment layout at all RNAs and selected LNAs
- Appraise the plan for complete setup of remaining LNAs
- Assess instructor and student classes at RNAs and LNAs
- Gather feedback from instructors and students from different academies regarding the program
- Evaluate the future plan of RNAs for providing more students with Cisco training
- Evaluate the performance of UNESCWA project team, and the five RNA focal points regarding the project implementation, operation, and monitoring
- Provide concrete recommendation on best practices and improvements of the system

- Participate in an end-of-project workshop for three days in Beirut

3. METHODOLOGY

Following a visit with the ESCWA Project Coordinator in Iraq, the ISG Main and Baghdad Assessors proceeded to coordinate the first visit to an RNA with the Legal Main Contact (LMC) for the Baghdad University RNA. This visit took place on June 22nd and 23rd. Following the Baghdad University RNA visit, the ISG evaluation team travelled to Lebanon for the end-of-project conference. Visits to the remaining RNAs resumed subsequently. ISG assessors visited Salahaddin RNA on July 6th and 7th, Mosul University RNA on July 8th and 9th, Mansour University College RNA on July 13th, and Basra University RNA on July 19th and 20th.

The assessors collected data regarding both instructor and student classes through discussions with all of the RNA directors and a selection of instructors and students themselves, and through collection of relevant documentation at the RNA itself. Copies of all relevant training materials, records, and planning documents were collected for examination. Information from discussions with ESCWA management and staff, instructors and students, and the RNA focal points themselves were helpful in enabling ISG evaluators to assess the performance of the ESCWA team and the RNAs/LNAs overall.

In all cases, except the Mosul University RNA, the RNAs were visited by the ISG Main Assessor, and one other ISG assessor who was local to the city in which the assessment was being conducted. Mosul RNA was the exception due to the security situation and associated travel restrictions.

During each site visit, specific surveying tools were used, in the form of three written questionnaires. One questionnaire was given to the LMC, usually prior to the visit itself, another was given to a sample of instructors, and a third was given to as large a sample of students as could be obtained on the day of the site visit. The results of these surveys have been aggregated into an excel database for analysis, which is provided in electronic form as Annex 2 to this report.

During the end of project conference on June 27th and 28th, ISG evaluators were able to hold lengthy discussions with major stakeholders in the outcome of the project, including members of the ESCWA INA project management, Cisco, the administration team of the Baghdad University RNA, the Ministry of Higher Education, and Lebanese American University. Through discussions with these individuals, the ISG evaluation team was able to gain an ample understanding of the nature of the project and a sample of the kinds of major challenges that were faced. ISG led a brief brainstorming session on the second day during which various points concerning the future direction of the project were raised for the consideration of the representatives of the Iraqi Government as well as the Cisco and LAU teams present.

In addition to the RNA site visits and the end-of-project conference discussions in Lebanon, ISG obtained valuable data from the Cisco database through the gracious assistance of the technical lead from Cisco who was in attendance at the conference in Lebanon. This database is provided as electronic Annex 1.

ISG met twice, both during the end of project conference and later in Baghdad, with Dr. Abdul Salam Al-Jamas from the Ministry of Higher Education in Iraq who has been the main coordinating agent within the ministry for this project throughout its duration. Several points were discussed during these meetings, the outcome of which is mentioned in the recommendations section below.

Based upon the synthesis of all key data, ISG offers the following findings and recommendations, detailed below.

4. LIMITATIONS

The security situation in Iraq was a constraining factor, to a limited extent. The visit to the Mosul RNA, in particular, was troubled by explosions that were occurring reportedly directly outside the university. Regardless of this, the assessment was completed by the ISG Main Assessor, Ms. Qabas, who completed the assessment visit in Mosul and returned to Erbil just before a multi-day curfew was imposed. ISG, thanks to the dedication and resourcefulness of Ms. Qabas and the support of the Mosul University administration and RNA leadership, was able to overcome the difficulties posed by the restrictive security environment.

A broader limitation was the inability of ISG to visit all of the relevant LNAs. Limited evaluation project time and resources did not permit visitation of all of the LNAs. Regardless, the central issues pertinent for this assessment have been identified by the team through interaction with personnel and students at the RNAs and other key stakeholders.

Due to evaluation time constraints the number of RNA staff and students interviewed by ISG assessors was limited, constraining the volume of data gathered through survey. While only a relatively small sample of students and instructors was questioned at each RNA, the information gathered displayed instructive patterns of notable problems and recommendations, and generally was a useful supplement to the data provided by Cisco, the information gathered at the end of project workshop, and through other interviews.

5. FINDINGS

The assessment findings section begins with a general overview (5.1) of the project and general challenges (5.2) to achievement of goals. This is followed by sections that examine each of the five RNAs individually.

5.1 General Overview

The INA project's goals were to establish five RNAs and 39 associated LNAs. The original scope of the project included only 4 RNAs in Mosul, Baghdad, and Basra. Salahaddin University RNA in Erbil was added later, in 2006. The original goals for the number of trainees included 1500 students and 50 trainers per year.

Of the 39 target LNAs, only 24 LNAs have been established (according to ESCWA), of which only 16 have held classes and/or graduated students, according to CISCO data, as of July 21, 2008.

Regarding numbers of instructors trained, the project achieved its goals. The first group of instructors from the original four universities were trained at the Lebanese American University in the Summer of 2004. Another group was trained in 2006, attended by all except the Mansour University College RNA. Training for the advanced courses was given in the summer of 2007. It was attended by groups from Universities of Baghdad, Mosul, Basra and Salahaddin. To the end of the project, the total number of instructors trained was approximately 400 (noted in the ESCWA end-of-project presentation). Training included TOT techniques for IT Essentials, CCNA, Fundamentals of Wireless LANs, and Network Security. The instructors were all trained in the instruction of the CCNA courses to various degrees, not all of them fully completing all of the levels.

Regarding the numbers of students trained, the project fell considerably short of its ability to achieve 1500 student graduates per year. Figure 5.1.1 below represents the breakdown of the total number of student trainees in all of the LNAs since the beginning of the project up through July 21, 2008, according to the CISCO database. Over the course of 3.5 years, a total of only 1,260 students were fully trained in one of the CCNA, CCNA Exploration, or IT Essentials components; this after an average 27% drop-out rate from a 1,732-student enrollment.

Figure 5.1.1: Enrollment and Graduation
Statistics for all LNAs in Iraq

TOTAL FEMALE ENROLLED	321
TOTAL FEMALE GRADUATED	248
TOTAL MALE ENROLLED	1409
TOTAL MALE GRADUATED	1011
GRAND TOTAL ENROLLED	1732
GRAND TOTAL GRADUATED	1260
PERCENTAGE DROP-OUT	27%

PERCENTAGE OF FEMALE ENROLLED	19%
PERCENTAGE OF FEMALE GRADUATES	20%

SOURCE: CISCO Database – Wadih Zaatar, Jul. 21, 2008

The following chart (figure 5.1.2), taken from the CISCO presentation at the INA end-of-project conference in Lebanon, represents the growth of the numbers of active students since August, 2005 that have been enrolled in the program. The number peaked in the spring of 2007 and has dropped since then.

The reason for the non-increasing enrollment has had to do with the inability of Basra and even Baghdad and Mansour University College to open all of their LNAs in addition to the fact that the Salahaddin LNAs have not yet become active, although they have been opened.

Figure 5.1.2: Progression of Numbers of Active Students in CISCO Courses in Iraq

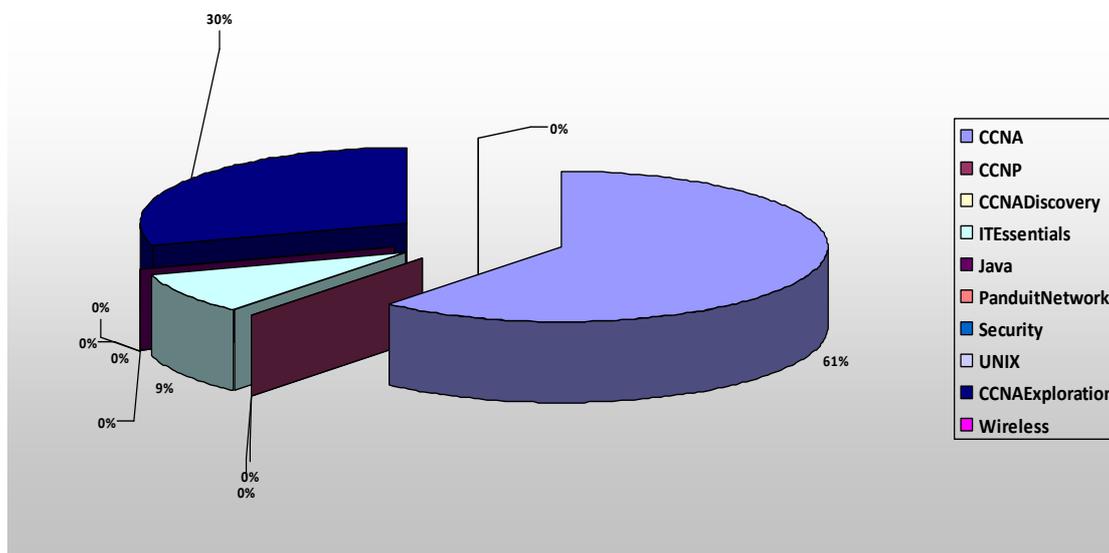


SOURCE: Wadih Zaatar (CISCO) presentation for INA End-of-Project Conference in Lebanon, June 28, 2008

All of the RNAs have held within their respective LNAs the CCNA 1 and CCNA 2 courses, with the exception of Salahaddin University, which was only recently incorporated into the program and opened for course enrollment. Only Mansour University College has given CCNA 3 and CCNA 4 courses to complete the full CCNA curriculum, although Mosul RNA reports to be currently offering the courses as well in five of its LNAs, although it has not enrolled or graduated any students in the upper courses as of July 21, 2008. There is somewhat of a discrepancy here between info from Mosul and info from Cisco.

All LNAs have given “CCNA Exploration” courses, which include “Network Fundamentals” (all) and “Routing Protocols and Concepts” (only Baghdad, Mansour, and Basra). Only Mansour University College and Mosul University have given “IT Essentials” courses. The equipment for the advanced courses was delivered only as late as June 2008.

The following figure (5.1.3) shows the percentage breakdowns for each kind of curricula that CISCO offers according to how it has been offered and produced graduates in Iraq.

Figure 5.1.3: Breakdown of Students by Kind of Course as of Feb, 2008 in Iraq

SOURCE: Wadih Zaatar (CISCO) presentation for INA End-of-Project Conference in Lebanon, June 28, 2008

5.2 General Challenges

The INA program has relied heavily on the public sector to create a culture in Iraq that supports the establishment and operation of the Cisco Networking Academies. Various reasons account for this, all of which are credible. Even the private sector institution that was approached failed to achieve its original goals of establishing four LNAs and thus did not bear effective witness for the vital role that the private sector in Iraq can play in such an endeavor as the establishment of these important centers of education that will shape the knowledge of future generations of Iraqi professionals.

The issues that the public sector centers faced during INA project implementation differ to some degree with the issues that private sector centers did/would face. All of the RNAs and LNAs tied to public universities complained about lack of support from their university administration. Common challenges that many of the centers face usually begin with and are directly related to the fact that the center does not have adequate financial and administrative support. Often the centers fall directly under the authority of the specific university and if the university administration is not supportive, the center is unable to perform its work effectively.

During the end-of-project conference in Lebanon this issue was raised repeatedly. It was noted that the legal framework within which the centers operate is somewhat ambiguous. Because they are fairly unique entities, there is a confusion as to where to assign them in the legal, administrative and budgetary structures, and they are often considered as consulting offices or other kinds of legally designated entities which do not exactly fit the description of the center.

The lack of clarity of the legal status of the centers generally puts the centers at the whim of the university administration. If the university administration does not understand the value of the education that is offered at the centers, then the center's ability to perform suffers. All of the RNAs complain to varying degrees about electricity and internet problems, a result of a lack of adequate resources to pay for the operation of the centers, while the situation is particularly acute in the cases of Salahaddin and Basra. These two RNAs do not have electricity and internet as a result of university administration neglect and marginalization. The Basra RNA is not able to even accomplish the release of equipment that is dedicated to the LNAs due to university administration obstruction, and therefore has not been able to establish the LNAs. In the case of Salahaddin, funds for the center that have been collected from the LNAs have reportedly been diverted, preventing establishment of internet connection.

Even Mosul cited lack of university administrative support as a main challenge. This is surprising since the university administration has apparently done a great deal to support the center, which is evident in the allocation of resources to the center. The university president's support can only go so far, however, without the backing of a strong policy that prioritizes the work of these centers.

The issues faced by the private sector university RNA (Mansour University College) were vastly different from those of its public sector counterparts. The presidency and administration of the university fully understood the value of the networking academy, and therefore allocated necessary resources. The problems that this RNA faced related to the security situation and threats upon the leadership that reduced the effectiveness of their role in establishing the RNA and its LNAs to the degree that should have been accomplished.

Had the administrative leadership been present in Iraq, the initiative would have been significantly stronger than it was. The potential of the private sector in Iraq to contribute to the Cisco networking program going forward is great, being more flexible and in tune with the directions in which the market and the job market is developing, thus better able to assess the importance of such centers. The poor results of the program at Mansour University College should not obscure the important role that the private sector in Iraq can play in this type of endeavor.

The focus on the public sector for the establishment of the Cisco centers has led to a highly homogeneous make-up of the kinds of students that are taking classes at the centers. More than 80% (estimated) of all of the students at all of the centers (except at the Mansour University Colleges) are either current employees of government institutions or are likely heading in that direction. All advertising was done in public sector circles; letters were sent to public sector ministries, offices, and institutions to recruit students. No effort was made to reach out to any private sector companies or candidates. As a result, there is an extreme lack of awareness of the centers among the private sector business community, whose members are more on the leading edge of development in the areas of networking and computing than their public sector counterparts.

The result of this lack of awareness is doubly negative. Not only does the Iraqi private sector not benefit from the instruction of the program that the Cisco centers provide, the program itself is not enjoying the expansion that it could be experiencing nor are the RNAs obtaining the

resources needed that could be obtained through expansion to private sector LNAs oriented towards the private sector business community and job market.

Other challenges that the program has faced are relatively minor compared to these two main points discussed above, regarding 1) lack of adequate administrative support from universities and colleges where the RNAs and LNAs have been established, and 2) lack of proper involvement of the private sector.

Other problems cited by the ESCWA coordinator in Iraq included the following:

- Shipping to and delivery in Iraq: Multiple companies carry out the shipping, with no retained knowledge or continuous relationship; difficulty in obtaining customs exemption letters; and inexperienced shippers;
- Lack of ability on the part of Cisco to provide adequate monitoring teams; and
- Difficulty in gathering statistics (legally, with Cisco restrictions, for example)

An ongoing concern, as the program proceeds apart from ESCWA oversight, will be Cisco's ability to work in Iraq due to the security situation that exists there. Currently there is no representative who works directly for Cisco or is contracted to Cisco that is able to directly monitor the work of the centers. This is an important piece missing from the program that must be addressed moving forward, especially since ESCWA will no longer be able to provide support.

Specific RNA/LNA Findings

More specific issues related to each of the five individual RNAs will be discussed in the sections below. Each section that examines individual RNAs contains the following subsections:

- Overview regarding individual RNA and associated LNAs
- ISG survey results
 - Equipment inventory
 - Instructor Survey
 - Student Survey
- Challenges

Findings of the ISG surveys are summarized in the sections on each RNA. For the compiled data results of the survey, see electronic **ANNEX 2: ISG RNA Survey Results and Data**.

5.3 Baghdad University RNA

5.3.1 Overview

Baghdad University RNA has established 11 LNAs in addition to its RNA. Courses first started at the University of Baghdad in September 2005. The LNAs that are overseen by the Baghdad RNA include the following:

Figure 5.3.1: Baghdad University LNAs

Acad Id	Academy Name	Status
3014181	University of Baghdad (RNA)	Active
3018104	College of Engineering	Active
3020824	University of Technology	Active
3020942	Computer Center	Active
3023609	Found_Tech_Education	Active
3043463	Al-Nahrain	Active
3023607	College of Science	Inactive
3023608	Al-Mustansiriya Univ.	Inactive
3043143	Al_Anbar	Inactive
3043464	Diyala University	Inactive
3043465	Babylon University	Inactive
3050344	Iraqi Commission for Computer and Informatics	Inactive

SOURCE: CISCO Database – Wadih Zatar, Jul. 21, 2008

Inactive LNAs are on record with CISCO as being opened, but these centers have not held nor graduated any classes as of July 21, 2008. In the case of the Baghdad RNA, students have been attributed to the RNA (where they have not in the case of all of the other RNAs) most likely because the Baghdad University RNA trains both instructors and students.

The LNAs belonging to Baghdad University have held a total of 67 courses, graduating a total of 678 students with only a 17% drop-out rate (see Figure 5.3.2 below), according to CISCO data. Baghdad University RNA reported directly a much higher number of 888 graduates (in 76 courses), obviously 210 of which CISCO is not aware of, nor are registered in CISCO's database and have therefore not received accreditation. The reason for the discrepancy is unknown.

Figure 5.3.2: Enrollment and Graduation Statistics for LNAs under Baghdad University RNA Supervision

TOTAL FEMALE ENROLLED	166
TOTAL FEMALE GRADUATED	146
TOTAL MALE ENROLLED	647
TOTAL MALE GRADUATED	531
TOTAL UNSPECIFIED ENROLLED	2
TOTAL UNSPECIFIED GRADUATED	1

GRAND TOTAL ENROLLED	815
GRAND TOTAL GRADUATED	678

PERCENTAGE DROP-OUT	17%
---------------------	-----

PERCENTAGE OF FEMALE ENROLLED	20%
PERCENTAGE OF FEMALE GRADUATES	22%

SOURCE: CISCO Database – Wadih Zatar, Jul. 21, 2008

Baghdad University has incorporated the CCNA into its own curriculum for Computer Science colleges and the IT1 curricula into its own curricula for ALL students.

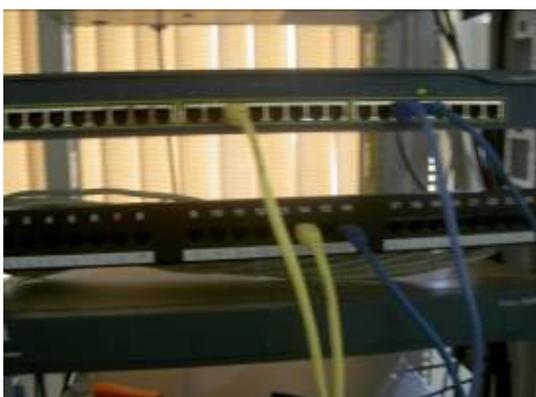
5.3.2 ISG Survey Findings

When ISG visited this center the team noticed several positive points in favor of the center administration and staff. The supervisors and instructors are working with dedication in their task to raise the competence levels and quality of education. The staff of the center go beyond their duties to encourage and support students in completing their courses despite the difficult circumstances experienced in Baghdad.

ISG witnessed the trainers walking in the footsteps of the head of the center in their dedication and campaign to raise the efficiency of the center and expand. They, like their students, desire the latest tools and equipment and to understand and explore higher levels in knowledge of networking. They take the success of this project very seriously and work with apparent pride.

5.3.2.1 Equipment Inventory:

ISG took the following photos of the equipment present in the Baghdad University RNA on June 22, 2008:



Equipment in use at the Baghdad University RNA including Cisco Bundles, projector, and UPS

Of the equipment that has been received by the RNA from Cisco as a part of the INA grant for distribution to all of the LNA's, the RNA reported at the end of September, 2008, that all equipment has been received and distributed according to the following table:

Figure 5.3.3: Distribution of Received Equipment

Item	Required Minimum for Each RNA/LNA	Number of Pieces of Equipment Delivered or in Use and to Which LNA/RNA												
		3014181 University of Baghdad (RNA)	3018104 College of Engineering	3020824 University of Technology	3020942 Computer Center	3023609 Found. Tech. Education	3043463 Al-Nahrain	3023607 College of Science	3023608 Al-Mustansiriyah Univ.	3043143 Al-Anbar	3043464 Diyala University	3043465 Babylon University	3050344 Iraqi Commission for Computer and Informatics	OTHER??
Computers	15	15	15	15	15	15	15	15	15	15	15	15	15	0
Scanner	1	1	1	1	1	1	1	1	1	1	1	1	1	0
Server	1	1	1	1	1	1	1	1	1	1	1	1	1	0
Printers	3	3	3	3	3	3	3	3	3	3	3	3	3	0
Photocopier	1	1	1	1	1	1	1	1	1	1	1	1	1	0
UPS	1	1	2	1	1	1	1	1	1	1	1	1	1	0
Data Projector	1	1	1	1	1	1	1	1	1	1	1	1	1	0
Lab Bundles		ok	ok	ok	ok	ok	ok	ok	ok	ok	ok	ok	ok	0

The RNA reported, moreover, that there was no equipment that has been received from the INA grant that is in storage, all has been distributed to the LNA's and/or is in use.

5.3.2.2 Instructor Survey:

Two instructors were interviewed by ISG assessors on June 22nd, 2008 in Baghdad.

In summary, instructors agreed that there was a lack of equipment to properly teach the program. They remarked that specifically, ISDN and ATM Router were old and the wireless and switches did not function properly. Their remarks, however, may be without foundation as these pieces of equipment are not currently required for the new version of CCNA.

Additionally, both agreed that more training for instructors was necessary. Specifically, one noted that certificates in CCNA, CCNP and UNIX would be appropriate. Likewise more curriculum material would be beneficial.

Both were of the opinion that the length of the courses was proper, and that the program is a major improvement over alternatives available in the past. On the other hand, more centers should not be added until improvements are made in the existing centers, one instructor believed.

5.3.2.3 Student Survey:

Seventeen students were interviewed. In summary, students were overall pleased with the course in terms of the knowledge gained as well as the certificate they would attain. Some students desired more focus on practical learning as opposed to theory and lecture. Most students were happy with the number of hours as well as number of students per class. Contrary to the instructors' comments, students noted that the equipment was amply supplied and available. Notable suggestions for locations of additional LNAs in Iraq included Kufa University in Najaf.

5.3.3 Challenges

Priority issues that need to be addressed in this center in particular include allocation of ample funding for LNAs as well as dedicated LMCs for each LNA who are able to navigate the bureaucratic terrain effectively, to ensure the establishment of the centers with the resources that are needed to train, provide electricity, internet access, and instructors' salaries.

The Baghdad RNA reported:

- Local academies need financial support in order to provide reliable internet access required for assessments;
- Many instructors are leaving their academies after attaining CISCO certification;
- Some LMCs are loaded with many duties in addition to their core responsibilities and thus fail to satisfactorily establish and manage their LNAs.

ISG's assessment team has identified the following issues:

- Some equipment is out-dated and old.

Most trainers complained of frequent embarrassment when being questioned by students who are more familiar with more advanced versions of the equipment than they are working on in the center.

The instructors expressed their desire to be trained in higher level courses, but for lack of materials and equipment such courses have failed to open. They confirmed that some equipment sent by CISCO, such as the wireless, is not present, as well as a lack of modern switching equipment, as the ones provided are outdated compared to those available in the Iraqi market. Some of the equipment used in training has even been

discontinued by CISCO: for example, the router provided is model 2600, while model 3600 is the lowest model found in the Iraqi local markets, with CISCO router models going up to 5000.

It must be noted that “some of the equipment was purchased in 2004/2005 (for example the 2600 series routers), and equipment that was purchased in 2006 contained the 2800 series routers.” It is not the case that the equipment is old, as much as it is a lack of understanding and comprehension on the part of the instructors in some instances with how to update the equipment and how the various models and pieces relate to one another. The 2600 routers, for example, can fully operate in the new version of CCNA, but require the instructor to download the appropriate IOS (the operating system) and the routers will work just fine.

Cisco equipment has several families. Among which are the following:

- 2600 series which were recently replaced by the 2800 series
- 3600 series which were replaced in 2002 by 3700 and later by 3800 series routers

One cannot compare 2600 to 3600 to 5000 series routers: for instance, the 7200 series is older than the 1800 or 2800 or 3800 series. It may be the case that the instructors need more familiarization with the equipment, which is something that is mainly their responsibility in keeping up with changes, information about which is found on the cisco website.

- The trainers requested more training and courses outside and inside the country to familiarize themselves more with the different advanced subjects in the CISCO curricula.
- Easily accessible and repetitive exam questions promote cheating.

This has been raised as an important point several times in this center as well as the other centers: namely, the repetition of the exam questions and use of the same test format and questions over and over. These questions are also found on the internet and are easy to access. This affects the level of the testing and unfair results that some of the students suffer as a result of not cheating.

To counter this, ESCWA has recommended instructors stress the lab exams, known as the skills exam, in order to ensure that students are tested accurately. The procedure for these exams was given to the instructors during the training sessions in Lebanon.

- Some trainees complain that the time of the course is not enough for the subject to be covered in full.
- Trainers have requested ID badges or IDs provided by CISCO to wear to courses.

This point may seem somewhat strange outside the Iraq context, however the ID badge in the Iraqi culture is an important status symbol. Such a simple item at a very low cost could boost morale of instructors significantly, and contribute much to the creation of a “CISCO culture” among the instructors and students of the program. This point was raised in almost every center.

If Cisco cannot provide this, perhaps the LMC should pursue the provision of such ID's in coordination with Cisco.

- There are discrepancies in the curricula and a delay in the shift to updated versions.

For example the IT-1 course subject material contains 16 chapters. Only 10 have been updated. The exam also only tests these 10 chapters. There is confusion as to why the remaining six chapters are not included in the exam, have not been updated, but are still a part of the course.

Course IT-2, on the other hand, has not been opened because the new course material has not been updated yet and the necessary materials have not yet been received.

5.4 Mansour University College RNA

5.4.1 Overview

This college is a private institute and among the successful private colleges in Iraq. It is to be noted that the president of this university more than any other involved in the INA project understands the importance of the center and is open to accept any new system that improves the instruction of the college, and has strongly supported the Cisco Academy.

The current stand-in Director of the center is very diligent in her work and dedicated to the development and the viability of the center. The center has, however, been unable to establish any of its LNAs to any state of viability at the time of this report, with the exception of the LNA that is in the University itself.

Mansour University College RNA has opened up two LNAs in addition to its RNA. Courses first started at the Mansour University College in February 2005, over half a year before courses started at the University of Baghdad and the University of Mosul. The LNAs that are overseen by the Mansour University College RNA include the following:

Figure 5.4.1: Mansour University College LNAs

Acad Id	Academy Name	Status
3012006	MUC Networking Academy	Active
3011910	Al-Mansour University College (RNA)	Inactive
3020320	Institute of Telecommunication	Inactive

SOURCE: CISCO Database – Wadih Zaatar, Jul. 21, 2008

Again, inactive LNAs are on record with CISCO as being opened, but these centers have not held nor graduated any classes for students as of July 21, 2008. Please note also, that no students have been attributed to the Mansour University College RNA, although Mansour RNA reports graduating a number of trainees. ISG has contacted Cisco (Wadih Zaatar) in order to discover the purpose for the discrepancy and is awaiting response from Cisco on this matter.

The MUC Networking Academy belonging to Mansour University College has held a total of 29 courses, graduating a total of 219 students with a fairly high drop-out rate of 33% (see Figure 5.4.2 below).

Figure 5.4.2: Enrollment and Graduation Statistics for LNAs under Mansour University Coll. RNA Supervision

TOTAL FEMALE ENROLLED	55
TOTAL FEMALE GRADUATED	32
TOTAL MALE ENROLLED	274
TOTAL MALE GRADUATED	187

GRAND TOTAL ENROLLED	329
GRAND TOTAL GRADUATED	219

PERCENTAGE DROP-OUT	33%
---------------------	-----

PERCENTAGE OF FEMALE ENROLLED	17%
PERCENTAGE OF FEMALE GRADUATES	15%

SOURCE: CISCO Database – Wadih Zaatar, Jul. 21, 2008

5.4.2 ISG Survey Findings

5.4.2.1 Equipment Inventory:

ISG took the following photos of the equipment in use at the Mansour University RNA on July 13, 2008.



Copy machine (UL), Cisco bundles (LR), computers (LL), and UPS (UR) equipment being used in the Mansour University RNA.

Of the equipment that has been received by the RNA from Cisco as a part of the INA grant for distribution to all of the LNA's, the RNA reported at the end of September, 2008, that all equipment has been received and distributed according to the following table:

Figure 5.4.3: Distribution of Received Equipment

Item	Required Minimum for Each RNA/LNA	Number of Pieces of Equipment Delivered or in Use and to Which LNA/RNA			
		3012006 MUC Networking Academy	3011910 Al-Mansour University College (RNA)	3020320 Institute of Telecommunication	Al_Qudss School
Computers	15	15	15	15	15
Scanner	1	1	1	1	1
Server	1	1	1	1	1
Printers	3	3	3	3	3
Photocopier	1	1	1	1	1
UPS	1	1	1	1	1
Data Projector	1	1	1	1	1
Lab Bundles		Ok	Ok	Ok	Ok

The RNA reported, moreover, that there was no equipment that has been received from the INA grant that is in storage, all has been distributed to the LNA's and/or is in use with the exception of security and wireless lab bundles only as of the end of September, 2008. Seen below in section 5.4.3 are pictures of equipment that had not been distributed at the time of ISG's visit on July 13th, 2008 which the RNA acting LMC (Dr. Aseel Adnan) confirmed has indeed been since distributed.

5.4.2.2 Instructor Survey:

Two instructors were interviewed by ISG assessors. Both instructor respondents found the equipment provided was adequate for proper instruction. Both instructors also agree that

trainee benefits are “excellent” and that the length of the course and class sessions is appropriate. Both instructors agreed that the number of students enrolled should be targeted at twelve.

Both instructors found the curriculum to be “good and integrated.” They also agreed that there should be more centers added at all universities and colleges to create additional job opportunities, increase expertise for participants and help serve the country of Iraq.

5.4.2.3 Student Survey:

Sixteen students were interviewed. In summary, students were mostly pleased with the course, only 25% indicating that they regarded the courses on only a “medium” level of quality. A large percentage (81%) indicated that the course instruction was too theoretical, and the students desired more focus on practical learning as opposed to lecture. Most students were happy with the number of hours as well as number of classmates they had with them. 81% of those surveyed, however, thought that the number of days the course was taught was too few. They indicated that the ideal number of days should 20 to 40. Equipment was amply supplied and available.



Students being surveyed by ISG Main Assessor during ISG site visit

All of the students noted that they felt that they were qualified in their field after taking the course, even qualified to instruct others. Notable suggestions for locations of additional LNAs in Iraq included Hadbaa University. All students believed the instructor to be qualified. All students reported paying 300,000 ID for the course.

5.4.3 Challenges

This center could more effectively take advantage of significant opportunities to expand into the private sector, being itself an example of private sector initiative. Priority issues that need to be addressed in this center in particular include the need for adequate attention given to the selection and securing of future LNAs.

The Mansour University College RNA did not attend the conference nor did they send a presentation to the end of project conference in Lebanon.

ISG’s assessment team has identified the following issues:

- Apparently entire courses are sometimes compressed into inadequate amounts of time.

Many of the students complain about excessive intensity of their courses that are being taught in one week as opposed to the full amount of time, and their lack of ability to absorb the material. The reason for these specific cases was apparently that the instructor had other commitments resulting in the need to rush the course.

- Lack of enough dedicated instructors.

There is an issue with regard to the dedication of the instructors. There is not an ample number of full-time instructors at the center. Course instructors that are part-time many times show up late for the course, or sometimes cancel the course altogether due to other commitments taking precedence over their responsibilities to the center.

- A major problem in the past was that this university faced some difficult security circumstances that retarded the expansion of the LNAs. Accordingly, equipment received for LNAs had, as of July, 2008, in some cases not yet been disbursed, although the RNA reports that it has completed distribution since.



Stockpiled computer equipment and Cisco bundles at the Mansour University College RNA, awaiting allocation to the Qudus LNA that had not been established in July – photo taken by ISG team in July, 2008. The RNA reports that as of September, 2008, the equipment has been distributed and the academy has been established.

5.5 Salahaddin (Erbil) University RNA

5.5.1 Overview

Salahaddin University RNA is a relatively new center, opened recently just this year in 2008. The center was opened later than originally projected, in part because the shipment of tools was delayed by five months. The first session was opened in April 2008.

The director of the center and trainers are all dedicated and positive about their work, aware of its value.



Lecture hall at the Salahaddin University RNA in Erbil.

The Salahaddin RNA has opened six LNAs in addition to its RNA, only one of which has held any courses. The Salahaddin RNA was not a part of the original scope of work for the INA project. It was added on only in 2007 when the need to incorporate more universities in the Kurdistan Region was identified and addressed.

The LNAs that are overseen by the Salahaddin University RNA include the following:

Figure 5.5.1: Salahaddin University LNAs

Acad Id	Academy Name	Status
3033263	Engineering College Local Academy	Active
3031863	Salahaddin University (RNA)	Inactive
3051343	Sulaimani University Local Academy	Inactive
3051344	KOYA University Local Academy	Inactive
3051345	Computer Science Institution Local Academy	Inactive
3051346	Local Academy of KOYA University	Inactive
3051347	Erbil Technical Institute local academy	Inactive
3051423	Kirkuk university local academy	Inactive

SOURCE: CISCO Database – Wadih Zaatar, Jul. 21, 2008

Again, inactive LNAs are on record with CISCO as being opened, but these centers have not held nor graduated any classes for students as of July 21, 2008. Salahaddin RNA reported that Sulaimani Univ. LNA, Kirkuk Univ. LNA, and Koya Univ. LNA would all be ready for classes starting July 1, 2008, while the Erbil Tech. Inst. LNA and the Computer Science Inst. LNA (in Sulaymaniya) would be ready to start courses August 1, 2008. Please note also, that no students have been attributed to the Salahaddin University RNA, although the RNA reports graduating 16 trainees by July 21, in addition to those graduated by the LNA, whose numbers are in the database and reported in figure 5.5.2 below. ISG has contacted Cisco (Wadih Zaatar) in order to discover the purpose for the discrepancy and is awaiting response from Cisco on this matter.

The Engineering College Local Academy belonging to Salahaddin University has held a total of 2 courses, graduating a total of 8 students with a very high drop-out rate of 69% (see Figure 5.5.2 below). It should be noted, however, that the work of the Salahaddin RNA has only begun as of spring of this year, whereas the work of the other RNAs around Iraq has been ongoing since 2005. Moreover, the Salahaddin University has created an additional LNA, which is the Kirkuk

University LNA, that is outside the scope of this project. This shows a very encouraging capacity for growth into the next phase of self-supported academies that is driven by local initiative.

Figure 5.5.2: Enrollment and Graduation Statistics for LNAs under Salahaddin University RNA Supervision

TOTAL FEMALE ENROLLED	8
TOTAL FEMALE GRADUATED	4
TOTAL MALE ENROLLED	18
TOTAL MALE GRADUATED	4

GRAND TOTAL ENROLLED	26
GRAND TOTAL GRADUATED	8

PERCENTAGE DROP-OUT	69%
---------------------	-----

PERCENTAGE OF FEMALE ENROLLED	31%
PERCENTAGE OF FEMALE GRADUATES	50%

SOURCE: CISCO Database – Wadih Zaatar, Jul. 21, 2008

5.5.2 ISG Survey Findings

5.5.2.1 Equipment Inventory:

ISG took the following photographs of the equipment present at the Salahaddin University RNA on July 7, 2008.





Cisco bundles (L, Above, UR), UPS (LM), copy machine and data-show projector (following page L and R) all in use at the Salahaddin University RNA.

Of the equipment that has been received by the RNA from Cisco as a part of the INA grant for distribution to all of the LNA's, the RNA reported at the end of September, 2008, that all equipment has been received and distributed according to the following table:

Figure 5.5.3: Distribution of Received Equipment

Item	Required Minimum for Each RNA/LNA	Number of Pieces of Equipment Delivered or in Use and to Which LNA/RNA									
		3033263	3031863	3051343	3051344	3051345	3051346	3051347	3051423		
		Engineering College Local Academy	Salahaddin University (RNA)	Sulaimani University Local Academy	KOYA University Local Academy	Computer Science Institution Local Academy	Local Academy of KOYA University	Erbil Technical Institute local academy	Kirkuk university local academy	OTHER??	
Computers	15	15	15	15	15	*	15	15	15	0	
Scanner	1	1	1	1	1	*	1	1	1	0	
Server	1	1	1	1	1	*	1	1	1	0	
Printers	3	3	3	3	3	*	3	3	3	0	
Photocopier	1	1	1	1	1	*	1	1	1	0	
UPS	1	1	2	1	1	*	1	1	1	0	
Data Projector	1	1	1	1	1	*	1	1	1	0	
Lab Bundles		ok	ok	ok	ok	*	ok	ok	ok	0	

(* New Academy not included in INA grant)

The RNA reported, moreover, that there was no equipment that has been received from the INA grant that is in storage, all has been distributed to the LNA's and/or is in use.

5.5.2.2 Instructor Survey:

Two instructors were interviewed by an ISG assessor in Erbil, Iraq. Both instructors agreed that there was enough equipment to suffice for proper instruction. Both also agreed that the length and number of hours in lecture is appropriate. Furthermore, both instructors felt as though training was sufficient for the instructors. Again, both instructors agreed that there was no need to add additional centers. One instructor was of the opinion that, "Heads of department are delaying progress of the program. And the program needs more publicity in newspapers."

5.5.2.3 Student Survey:

Ten students were interviewed by ISG assessors. In summary, students were also overall pleased with the course for the benefit of the knowledge that they were gaining as well as the certificate they would attain. Most of the students (80%) desired more focus on practical learning as opposed to theory and lecture. Most students were happy with the number of hours and course length as well as number of classmates. Students reported paying different rates to join the course, some 400,000 ID (80%) and some 300,000 ID (20%).

All students reported hearing about the course “through a friend.” All students reported that the instructor was qualified. Notable suggestions for locations of additional LNAs in Iraq included Kufa University in Najaf and three other universities in the Kurdistan Region.

5.5.3 Challenges

Administration of the center with regards to financial matters and control over resources is not effective. Apparently the funds that the center generates are not cycled back into the center, thus the center is not able to afford internet, nor its own power-production. Other current issues include poor marketing of courses and lack of dedicated instructors.

The Salahaddin RNA reported in their end-of-project presentation the following:

- There is a lack of continuous provision of internet.
- The center still does not have a unique budgetary plan. They are employing at present budgetary systems designed for the Consultancy Bureau and Continuous Education.
- There are considerable administrative delays on the side of Cisco. There was a four month gap between submission of contract to Cisco and its signed return.
- There are considerable delays associated with shipment of equipment. The equipment was received five months after the contract was received.
- Links with other RNAs and LNAs around Iraq are weak, with the exception of Mosul University. The value of stronger relationships has been apparent through the benefit seen from the relationship with the Mosul RNA.
- Some of the equipment was damaged: one of the photocopiers received was damaged during transportation to Iraq (this was not communicated to the INA team at the time).

ISG’s assessment team has identified the following challenges:

- The university leadership makes choices for the academy based on personal interests and not always for the good of the center.

Among the problems faced by the center is that the university leadership wants to nominate the persons who become the trainers at the academy. Often the choice made is based on party affiliation or personal relationship with the person and not based upon ability to understand and teach the material.

- Instructors are outshined by their students.

Government employees often attend their courses knowing more than the instructor because there are more modern and advanced tools in some of the government offices that send students. Many of the instructors complained about being embarrassed many times by their students who know more about the subject of instruction than they themselves know.

- There is a high percentage of drop-outs.

Trainers complained that some students, staff members nominated by government departments, whose course fees were paid by those departments and who subsequently had not personally invested anything in the course, dropped out casually.

- Lack of clear and transparent governing financial system.

Among the most pressing administrative obstacles has been a lack of understanding and clarity of the administration's policy regarding the financial administration of the center. Fees collected from the LNAs were not all released for the center to support its budget, the University having appropriated a portion of the money.

- Lack of dedicated instructors.

Most of the instructors are part-time and have other commitments at the university which often take precedence over their teaching duties at the center.

- Quality and dedication of students registering for the courses is not high.

The kind of students that take part in the center is not consistently good. Many of them expressed a strong desire to be tested less frequently so as not to be held as strongly accountable for subjects that they did not understand adequately. Likewise, they wished to lower the standard of success so they would not have to study as hard or dedicate as much time and energy to their studies.

- The center does not have consistent internet nor does it have its own generator.

As a result the trainees complain of repeated interruptions due to loss of electricity and this in turn adversely affects the education process.

5.6 Mosul University RNA

5.6.1 Overview

Mosul University is the only university among those surveyed in this study where it was evident that there is a network linking all parts of the university together providing internet to all of the students. This demonstrates the understanding of the importance of the education that the centers provide on the part of not only the staff that is dedicated to instructing in the center,

but also on the part of the presidency of the university and the majority of the rest of the faculty.

The University of Mosul RNA is working diligently for the sake of ensuring the continuity and success of the center and LNAs. The staff of the center works in very difficult conditions. During the ISG assessors' visit, interviews were interrupted by frequent explosions and the atmosphere was tense. Even with this, the students have a strong desire for the courses that the center offers, and have requested an assurance of no delays in the opening of advanced courses.

Even though some trainers have obligations in other colleges (thus, are part time with the center), they reportedly do not lag in the fulfillment of their duties to the center, despite the fact that their salaries as instructors in the center are considered low and the security situation is threatening.



Instruction at the University of Mosul RNA and LNAs

University of Mosul RNA is the only RNA that offers CCNA4, thus offering all of the components of the CCNA full course for trainees (although it has not yet graduated anyone from this course according to Cisco, which is an apparent discrepancy).

The Mosul University RNA has opened up seven LNAs in addition to its RNA, all seven of which have held multiple courses. Courses first started at the Mosul University in August 2005. The LNAs that are overseen by the Mosul University RNA include the following:

Figure 5.6.1: Mosul University LNAs

Acad Id	Academy Name	Status
3017258	Mosul University 2	Active
3020040	Computer Center	Active
3020635	Dohuk University	Active
3022641	Engineering College	Active
3025023	Mosul Institute Academy	Active
3025483	Computer Science	Active
3025683	Electronic Engineering College	Active
3012898	Mosul University (RNA)	Inactive

SOURCE: CISCO Database – Wadih Zaatar, Jul. 21, 2008

Please note, as is the case for the Mansour and Salahaddin RNA's, that no students have been attributed to the Mosul University RNA (thus listed as "inactive"), although the RNA reports graduating 108 trainees as of July 21, in addition to those graduated by the LNA's, whose numbers are in the database and reported in figure 5.6.2 below. ISG has contacted Cisco (Wadih Zaatar) in order to discover the purpose for the discrepancy and is awaiting response from Cisco on this matter.

In this case, most likely no students have been attributed to the Mosul University RNA because the Mosul University RNA has only been training instructors and not students.

The LNAs belonging to Mosul University have held a total of 53 courses, graduating a total of 307 students with a fairly high drop-out rate of 37% (see Figure 5.6.2 below).

Figure 5.6.2: Enrollment and Graduation Statistics for LNAs under Mosul University RNA Supervision

TOTAL FEMALE ENROLLED	85
TOTAL FEMALE GRADUATED	63
TOTAL MALE ENROLLED	404
TOTAL MALE GRADUATED	244
GRAND TOTAL ENROLLED	489
GRAND TOTAL GRADUATED	307
PERCENTAGE DROP-OUT	37%
PERCENTAGE OF FEMALE ENROLLED	17%
PERCENTAGE OF FEMALE GRADUATES	21%

SOURCE: CISCO Database – Wadih Zaatar, Jul. 21, 2008

University of Mosul has introduced the CISCO curriculum as part of the requirements for a degree in Computer Engineering, Computer Science, and Software Engineering.

5.6.2 ISG Survey Findings

5.6.2.1 Equipment Inventory:

ISG assessors verified that the following equipment was present in the lab:



Equipment used at the Mosul University RNAs and LNAs. Includes Cisco bundles (L), copy machine (next page R), projector (R) and UPS (L next page)



Of the equipment that has been received by the RNA from Cisco as a part of the INA grant for distribution to all of the LNA's, the RNA reported at the end of September, 2008, that all equipment has been received and distributed according to the following table:

Figure 5.6.3: Distribution of Received Equipment

Item	Required Minimum for Each RNA/LNA	Number of Pieces of Equipment Delivered or in Use and to Which LNA/RNA								
		3017258 Mosul University 2	3020040 Computer Center	3020635 Dohuk University	3022641 Engineering College	3025023 Mosul Institute Academy	3025483 Computer Science	3025683 Electronic Engineering College	3012898 Mosul University (RNA)	OTHER??
Computers	15	15	15	15	15	15	15	15	15	0
Scanner	1	1	1	1	1	1	1	1	1	0
Server	1	1	1	1	1	1	1	1	1	0
Printers	3	3	3	3	3	3	3	3	3	0
Photocopier	1	1	1	1	1	1	1	1	1	0
UPS	1	1	1	0	1	1	1	1	1	0
Data Projector	1	1	1	1	1	1	1	1	1	0
Lab Bundles		ok	ok	0	ok	ok	ok	ok	ok	0

The RNA reported that there was equipment that has been received from the INA grant that is still in storage at the RNA as of the end of September, 2008, numbers and pieces of equipment according to the table below:

Figure 5.6.4: Received Equipment Still in Storage

Item	# of Items in Storage
Computers	45
Scanner	3
Server	2
Printers	9
Photocopier	3
UPS	4
Data Projector	3
Lab Bundles	4

5.6.2.2 Instructor Survey:

Ten instructors were interviewed in Mosul, Iraq. One of the ten respondents found that there was not enough equipment, while three other instructors cited need for important items such as laser printer and scanner, more computers, and better CD readers (OS-CD).

All instructors found the training benefits “good” or “excellent.” Half of the instructors believed that the course should be lengthened significantly. Instructors note that lectures averaged three to five hours, which they felt was appropriate. They also found that the class enrollment of about 6-10 students was proper.

Six of the ten instructors believed that training for instruction was not sufficient, citing that there should be training outside of the country, they should be engaged in advanced courses, trainers need to learn new material added to courses and should have certificates such as CCNP. Instructors supported the idea of follow-up training for trainers.

Six of the ten instructor respondents likewise found that more centers should be added, for various reasons including to increase the number of job opportunities, increase the dissemination of science and the development in the country, increase the number of professionals, disseminate scientific culture to more students.

5.6.2.3 Student Survey:

Fourteen students were interviewed by ISG. Students were overall pleased with the courses, however, whereas all students in surveys of previous RNAs had indicated that the quality of the course was “good” or “excellent,” 29% of Mosul students indicated that the courses were only “medium” in quality. A higher percentage (79%) desired more focus on practical learning as opposed to theoretical and lecture. A majority of the students were happy with the number of hours per session, the number of days, as well as number of classmates. Some of the students (36%) felt that the equipment in supply was not enough to meet their learning needs.

Most students found themselves to be able to even train others at the completion of the course. Notable suggestions for locations of additional LNAs in Iraq included University of Tikrit, Hadbaa University, and Technical Institute in Mosul. Students reported paying fees for the courses that ranged widely between 80,000 ID and 300,000 ID.

5.6.3 Challenges

As is the case in other centers, due to lack of clear administrative policy regarding the management of the center the Mosul RNA does not have enough control over resources to ensure continued provision of internet and supply of electricity. Moreover, the number of dedicated instructors is not sufficient. The instructors, moreover, require more training.

The Mosul University RNA reported in their end-of-project presentation the following:

- Lack of adequate provision of internet service to all of the LNAs

- Difficulty in managing center services and hardware (Linux Server (SQUID), Domain Controller, Exchange Server, DHCP and Internet Server, WEB Server, VOIP Server)
- Lack of adequate power generation
- The absence of administrative instructions governing the academy work regarding both administrative and financial matters
- Financial funding for the academies is lacking
- There is insufficient attention by Cisco toward academies in Iraq
- The ownership of the equipment is not clearly defined

ISG's assessment team identified the following issues:

- There are not enough instructors for the center and there is a lack of dedication among instructors

There is a lack of understanding on the part of some heads of departments in the university who do not hold the work of the center in high regard, which often creates tension between the instructors of the center and instructors in specific departments, and their respective department heads.

Most students expressed that the frequent opening of new sessions has led to a reduction of ultimate performance and quality of course presentation on the part of the RNA due to the dispersion of talented instructors, as well as an inadequate amount of equipment to serve all of the courses.

- Instructors need more training on the material

Some of the instructors have noted that continuing education/training is not always provided where needed, as is in the case in changes in the curriculum or the addition of new equipment being trained upon.

- Request for ID badges from Cisco

As was the case in the Baghdad University RNA, trainers requested ID badges or IDs provided by CISCO to wear to courses.

5.7 Basra University RNA

5.7.1 Overview

The Basra University RNA has opened up two LNAs, in addition to its RNA. Courses first started at Basra University in July 2006, nearly a year after Mosul and Baghdad Universities started courses, a year and a half after Mansour University College started courses, and approximately two years after the project began in August of 2004.

The Basra RNA reported in their end-of-project presentation in June (though they were absent) that they have signed contracts with the following LNAs:

- Technical College of Basra
- College of Sciences, University of Basra
- The State Company for Chemical Fertilizer, Ministry of Industry
- College of Engineering, University of Basra
- College of Literature, University of Basra

An additional five LNAs have been identified, but have not as of the time of this evaluation been signed. They include the State Company for Iraqi Ports, Thi Qar University, Misan University, The Southern Oil Company (Ministry of Oil), and the State Company for Electrical Power (Ministry of Electricity).

However, the LNAs that are actually registered in the Cisco database as being overseen by the Basra University RNA do not include any of the above, They include only the following:

Figure 5.7.1: Basra University LNAs

Acad Id	Academy Name	Status
3023542	Basra University Computer Center	Active
3016501	Basra University Computer Center (RNA?)	Inactive
3023681	Basra Academy for Computers Networks and Communications	Inactive

SOURCE: CISCO Database – Wadih Zaatar, Jul. 21, 2008

Again, inactive LNAs are on record with CISCO as being opened, but these centers have not held nor graduated any classes for students as of July 21, 2008. Please note, as is the case for the Mansour, Salahaddin, and Mosul RNA's, that no students have been attributed to the Basra University RNA, although the RNA reports graduating trainees as of July 21, in addition to those graduated by the LNA's, whose numbers are in the database and reported in figure 5.6.2 below. The total number of graduates that the Basra RNA has reported for itself and its LNA's is 63, which is greater by 15 than the total graduated number (48) listed in figure 5.7.2 below. One may speculate that these 15 were graduated by the RNA and not included in the data below as was the case with Mansour, Salahaddin, and Mosul RNA's. ISG has contacted Cisco (Wadih Zaatar) in order to discover the purpose for the discrepancy and is awaiting response from Cisco on this matter.

The Basra University Computer Center belonging to Basra University has held a total of 13 courses, graduating a total of 48 students with a fairly high drop-out rate of 34% (see Figure 5.7.2 below).

Figure 5.7.2: Enrollment and Graduation Statistics for LNAs under Basra University RNA Supervision

TOTAL FEMALE ENROLLED	7
TOTAL FEMALE GRADUATED	3
TOTAL MALE ENROLLED	66
TOTAL MALE GRADUATED	45
GRAND TOTAL ENROLLED	73
GRAND TOTAL GRADUATED	48
PERCENTAGE DROP-OUT	34%

PERCENTAGE OF FEMALE ENROLLED	10%
PERCENTAGE OF FEMALE GRADUATES	6%

SOURCE: CISCO Database – Wadih Zatar, Jul. 21, 2008

The CISCO curriculum has been added to the overall curriculum in some courses in the Engineering College and the College of Sciences and the Faculty of Science.

5.7.2 ISG Survey Findings

5.7.2.1 Equipment Inventory:

ISG took inventory of the Basra University RNA on July 19, 2008. ISG assessors verified that the following equipment was present at the RNA:

Figure 5.7.3: Equipment in use at the RNA

ITEM	REQUIRED MINIMUM	NUMBER PRESENT
Computers	15	165
Scanner	1	11
Server	1	11
Printers	3	33
Photocopier	1	11
UPS	1	11
Data Projector	1	11
Lab Bundles		ok



Cisco bundles and projector currently in use at the Basra University RNA.

The Basra RNA has not responded to ISG with respect to requests for more detailed breakdowns of the numbers and kinds of items that are in storage versus that are in use and have been distributed, despite repeated phone calls, emails, and text messages over the course of two weeks at the end of September and beginning of October, 2008.

5.7.2.2 Instructor Survey:

One of the three instructor respondents finds that equipment is not sufficient for proper teaching. All three respondents believe that the length of the course is adequate. Furthermore there is consensus that 30 days is ideal for the duration of the program. All three instructors find that length of class sessions is appropriate. Two of the three respondents find that their current student size (6-14) is “too few.”

All three respondents agree that instructor training is sufficient although there should be time allocated to training programs to keep instructors up to date on the curriculum. One of the instructors found the curriculum lacking in practicality and poorly suited to Iraq.

All three instructors agree that more centers should be added in University of Diwaniyah, Babil University, Kufa University, University of Dhi Qar, Kut University and the College of Engineering, Science and Education.

5.7.2.3 Student Survey:

Only three students were available to be interviewed in Basra. The students were pleased with the course. All three students felt there was a good balance of practical and theoretical learning. Most students were happy with the number of hours, the length of the course, as well as number of classmates. Equipment was confirmed by all as amply supplied and available. Notable suggestions for locations of additional LNAs in Iraq included Kufa University in Najaf.

5.7.3 Challenges

Again, as is the case in other centers, the Basra University RNA does not have adequate support from the university administration, and thus, due to this reason and a lack of clear policy governing the center, does not have enough control over resources to ensure continuous provision of internet and supply of electricity.

In their end-of-project presentation in Lebanon, the Basra University RNA did not report directly any problems faced.

ISG’s assessment team has identified the following issues:

- Remote location and inadequate provision of transportation

The center is at some distance from the city center of Basra, located at the University of Basra in “Garma.” Commute time and level of danger associated with the trip is too high for some students. Furthermore, no transportation for students or instructors to and from the center is provided.

- Lack of support from the university administration

There is lack of backing for the center from the university leadership. ISG found that the support of the university leadership is focused primarily on activities that support literature, while computers, networking, and any other “new” developments in scientific

education are not prioritized. Cultural events and tradition is given greater weight, while science and technology, including the center, is neglected.

- University leadership not handing over equipment for LNAs

The University is not giving administrative approval for the handing over of the devices and equipment for local academies despite the signing of contracts with the LNAs, some of them more than a year ago, as mentioned above in the overview section.



Stacks of un-used and un-opened equipment (photo-copiers and computers), shipped to Basra University two years ago for dispersal to the LNAs, that are not being released by the Basra University administrative leadership.

- No internet provided for the center

The university does not pay for the RNA's internet system, so the center has to rely on the students to bring their own internet cards and connect through static-ridden archaic telephone lines, which makes for very slow internet connections.

- Center administration is lacking in competency

The center director is unable to convince the university leadership or influence his support in any way. One of the things the director was focused on during ISG's visit was the establishment of a caravan carrying full IT equipment and traveling to remote areas to teach IT in villages. While focused on this idea, he has to-date not opened the designated centers in Thi Qar, Misan, and other places. Furthermore, he displayed a lack of technical competence related to basic server programming, that he attributed to a lack of training.

- Lack of adequate financial resources

The UPS was not set up because of the absence of an air-conditioned room. The reason attributed by the center director was lack of access to the needed financial resources.

6. RECOMMENDATIONS

6.1 General Overview

As ESCWA has concluded its official role in the foundation of the Cisco Networking Academies network in Iraq, the recommendations that are outlined below, both general and specific, apply to all stakeholders that will continue to promote the operation and expansion of the Cisco networking academies into the future.

ISG does not recommend any further role for ESCWA to play, other than to continue to gently but firmly remove itself from its role as mediator between Cisco and the RNAs in Iraq. ESCWA has done what ISG believes to be a very good job, under the circumstances, of getting the project going in order to facilitate access for the Iraqi people to new and essential knowledge that will propel technological advancement.

Cisco Networking Academies are essentially a private-sector initiative, run by a US for-profit company. Although the establishment of networking academies in and of themselves is somewhat of a non-profit undertaking, Cisco in the end will benefit as a company by spreading knowledge of its networking products and gaining a substantial foothold in local and regional markets. Thus it will be within the interests of Cisco to ensure that the operation of all RNAs and LNAs and the continued establishment of new LNAs will occur in such a way as to maximize the most effective dissemination of information to the greatest number of students possible.

Iraq has a bright future. Even now, foreign direct investors have begun committing funds and signing agreements. It will be within Cisco's interests to ride the front of the rising tide and capitalize on all of the hard work that has been done by ESCWA to establish the current centers and create awareness in order to integrate use of its products into the hundreds of developing institutions that will need the services and products that Cisco provides. There is much to be gained in the Iraqi market where resources are present, security is improving, and the foundation laid, ready to build upon.

Cisco must and will continue in the effort to streamline the existing centers and administrative relationships as well as to expand to the maximum possible number of students taught. It is within Cisco's interests to do so. ESCWA has provided Cisco the valuable service of orienting the company to work in Iraq, showing how it is possible and with whom it should coordinate. ESCWA has also assisted the Iraqi public higher education sector in gaining access to the valuable resources that Cisco offers in their networking academies. It has been a win-win situation for all. Having reached this point, ESCWA has done as much as it can do, and it is the recommendation of ISG that ESCWA play no further financial role and let the relationships that have been established evolve in the spirit of the private sector endeavor that the project truly is.

In this important period of transition, ISG hopes that Cisco and other partners in the endeavor to establish and improve the operation of the networking academies will take into consideration, to the extent that each is able, the specific recommendations below. This will ensure the development of the network of academies and the quality of and capacity for instruction in terms of knowledge of subject matter and ability to reach larger numbers of students.

6.2 General Recommendations

The following recommendations pertain to the system of Networking Academies as a whole. Following this section of general recommendations, ISG has outlined specific recommendations that pertain to each RNA.

- Include More Private Sector LNAs in the Cisco Academies Network in Iraq

During the INA project, the focus of recruitment has been mainly on the public sector, while the administration of the RNAs also has been run mainly by public sector partners. The only exception to this has been the Mansour University College RNA which unfortunately was not successful in establishing its LNAs for reasons unrelated to the viability of the private sector. Moreover, the rest of the RNAs and LNAs are all under the administration of the Ministry of Higher Education in Iraq. All of these RNAs and LNAs recruited primarily among the public sector government offices for students. Thus most (there are exceptions, but few) of the students who have graduated from the Cisco networking academies in Iraq are Iraqi government employees.

ISG conducted an informal poll among members of the private sector who are concerned with integration of new technology as well as among centers that teach computer skills and programming, and none have heard of CNAP nor are aware of the existence of the Cisco networking centers. Currently, the Cisco academies are a well-kept secret in Iraq.

Without a doubt, there are many students that are to be found working or aspiring to work in the private sector that the INA has not reached. There are also a large number of computer training centers that could be potential partners with Cisco and viable players in the CNAP in Iraq as LNAs, for example.

Due to the nature of the public sector administration of the majority of the RNAs, the idea of the integration of private sector players was frowned upon by the representatives from the Ministry of Higher Education and the public sector RNA administration when the idea was raised by ISG at the end-of-project conference in Lebanon at the end of June. The public sector RNAs will not be the champions of the integration of the private sector.

Cisco must thus find viable private sector partners to promote the integration of private sector LNAs that market to private sector professionals. Whereas the reaction from the Iraqi delegation at the end-of-project workshop (representing only the public sector) was adverse, the Lebanese American University CATC representative was very much open to the idea and would encourage such integration.

- Restructure the Legal Framework Governing the Operation of Public Sector RNAs and Allocate Adequate Financial Resources for Their Operation

Due to the fact that the legal and financial regulation of the public sector RNAs and LNAs (namely all of them except Mansour University College) is not clear, ISG suggests that the

Ministry of Higher Education make it an immediate priority to define the legal status and appropriate a budget for the centers in time for the next season of study.

This matter was discussed with Dr. Abdul Salam at the Ministry of Higher Education in specific relation to the University of Basra RNA, where progress in establishing LNAs has been virtually non-existent. Dr. Abdul Salam suggested to ISG Main Assessor that the Basra University RNA LMC contact him directly with any issues. When ISG visited the Basra RNA, the LMC was thankful to receive this news and did, in fact, make direct contact with Dr. Abdul Salam and was able to gain support for some of the issues he had been facing. It was surprising that he had not had this connection established previously. Moreover, what this represents is the lack of clarity of administrative procedure for the LMCs of the public sector RNAs with regard to addressing issues that they are facing in establishing the LNAs.

It is ISG's recommendation that the Minister of Higher Education himself support the centers by ordering the drafting of policy that is specific to the administration of the centers and actually allocate a specific budget for the operation of the centers that the university in which the center is located cannot disrupt or affect negatively. They must have adequate independence and legal protection in order to gain access to the resources that are necessary for their operation and mission to expand the network of LNAs that is associated with the RNA.

This is not the first time that this recommendation has been made. Similar pleas were made to the ministry representatives who attended the end-of-project conference in Lebanon. The ministry is no doubt aware of its shortcomings in this area. What is needed is more support for Dr. Abdul Salam Jams' work in the ministry from the Minister himself as a true priority for the promotion of technological advancement in Iraq.

Without the presence of ESCWA in the further administration of the project, it would be in the interests of Cisco to appeal directly to the Minister himself in order to make sure that the above is achieved.

- Prioritize Meeting Goals for RNA Recruitment of LNAs

It goes without saying that the RNAs should complete their mission to establish a minimum of 10 LNAs each. If the public sector is not responding, there are those who undoubtedly will respond in the private sector and who even have the means to finance the purchase of Cisco bundles upon which to train the students. This will circumvent a great deal of the difficulty that is being faced currently associated with weak LMCs in public sector settings that are not able to successfully navigate the political terrain within which they are set in order to effectively establish their LNAs.

- Provide Additional Training for Instructors

Additional training is needed on two levels. First, more RNA instructors need to be trained, second, existing RNA instructors that have proven themselves should receive further more advanced training in order to keep them up to speed with any technological developments and developments within the curricula.

The attrition of instructors that is occurring at the Baghdad University RNA, for example, is not unexpected for many reasons. The RNAs should be prepared for this, and take positive measures (instead of focusing on punitive ones, which is the current case) to forestall the negative effects of this attrition, which could include needing to stop running courses for failure to meet minimum instructor requirements. Regional academies should train more instructors to ensure compliance with the Cisco policy of two instructors being available for any course in progress.

Continuing education on technological developments and expansion of existing training into more advanced fields for those instructors that have proven their value to their RNA or LNA is critical for building the credibility of the instructor and the institution as a whole.

- Conduct Nation-Wide Awareness Campaigns Reaching Out to all Potential Partners

Awareness of the importance of the kind of education that the CNAP centers provide must be expanded. Many of the challenges that the program faces has to do with a lack of understanding among influential members of Iraqi society on all levels as to the importance of education in computer science and practical applications that the CNAP program provides.

A couple of high-level conferences with well-targeted participation recruitment could go very far to remedy this. With Cisco sponsorship and coordination in partnership with the official face of the Iraqi Ministry of Higher Education, the conferences could be organized easily, held in a safe location within Iraq, and feature presentations from influential members of society that promote the exploitation of such technology for the good of the community as a whole. Success stories should be highlighted, and clear connection must be made to the viability of this kind of education as it pertains to employability due to the kind of skills that are being sought actively by general private sector enterprise (which is politically neutral).

- Cisco Support: Facilitate Exchange of Information and Experiences Between Existing RNAs and LNAs, and Foster a Cisco Culture Among Instructors and Administrators

Many of the RNAs expressed a desire to have more interaction with their counterparts in other RNAs and LNAs around the country. Moreover, staff at nearly every RNA saw it as a priority to be given Cisco identification badges.

Both of these points raised by RNA instructors and LMCs lend support to the usefulness of fostering the development of a culture among the various administrators and instructors that will make being an instructor in one of these centers something desirable and respected.

To do this, Cisco must become more involved in the development of the program in Iraq. Cisco administration must assume a more active role in dealing with its centers. Currently, there is a lack of support evidenced in neglect of the administrative needs of the centers, long delays in the signing of LNA contracts, and simple lack of response from Cisco administrative personnel in Egypt to the RNAs, LNAs, and to the INA program management up to the end of the project.

Cisco may consider re-evaluating its placement of staff in Egypt as well as ensure that the personnel that are supporting the CNAP in Iraq administratively are adequate in number and in qualification. Currently, there are communication gaps and cases of neglect that will impede future growth of the program, let alone not encourage it. These comments do not apply to Cisco's technical lead based in Lebanon, who has been very responsive and whose dedication to the program has been a key to the successes of the project.

If these issues with current administrative personnel and administrative activity on the part of Cisco can be remedied, there are certain steps that can be proactively taken by Cisco that will not only remedy the relational gap that currently exists between Cisco and the centers in Iraq, it will go far to relationally tie the centers in Iraq closer to the Cisco CNAP administration and thus increase coordination and effectiveness on the part of all of the stakeholders in the program in general.

One of the steps that can be taken to strengthen the relationship between Cisco and the centers is the presence of Cisco in Iraq. This presence can be achieved either directly or through a contractor that will serve as Cisco's official representative. This representative would be continuously visiting and circulating among the RNAs and LNAs in Iraq, serving as a monitor of activity as well as a source of support for academies with whatever difficulties they are facing.

A further role that a Cisco representative can play is to organize activities that allow the RNAs and LNAs to interact with one another in the form of regional or country-wide meetings, or even teleconferences on a regular basis, to discuss pertinent issues and how each is finding solutions.

Specific RNA/LNA Recommendations

The following recommendations are points that are specific to the RNAs and/or their associated LNAs that have either not been raised above in the general recommendations or are points that need to be further stressed here.

6.2 Baghdad University RNA Recommendations

- Most importantly, the administration of the regional and local centers in Baghdad should be under the ultimate oversight of the Ministry of Higher Education and Scientific Research, and not under the leadership of the specific university or college, in order to ensure that the centers have full independence in terms of staffing of the centers and even their own buildings. This will go some ways to solve the issue that the center faces, as do other centers, of not receiving the resources that it needs to operate, and facing tension with the administration of the university on a continual basis in the struggle to secure these resources.
- Dedicated funding must be allocated by the ministry for the RNA and LNAs. This funding should be sufficient to cover the costs of wages for high-quality instructors.

6.3 Mansour University RNA Recommendations

- Mansour University should dedicate more full-time instructors to the center, thus increasing the capacity to teach a greater number of students.
- Increase the number of required days for each course to an adequate level.
- Focus on the establishment of the LNAs. This could be a real source of advancement for the CNAP program in Iraq as well as a potential source of financial income/support for the Mansour University RNA that has until now been discounted.

6.4 Salahaddin (Erbil) University RNA Recommendations

- The center's administration should hold more frequent meetings with other successful centers (Mosul and Baghdad) so as to generally benefit from the experiences of those who have succeeded in this area and to understand how they can improve their work.
- There should be continued emphasis on opening short courses for trainers and periodic open-forum discussions on new methods in the curriculum as well as on the new developments in networking. Instructors might also benefit from attending advanced courses outside of Iraq so as to reduce embarrassment of the trainer by better-informed trainees.
- To resolve the problem of government employees that sign up for a course and then do not complete it, there must be a commitment on the part of the department that has paid the fees for an employee's course to hold the employee accountable for withdrawing from the course.
- Instructors must be devoted to the center and not be otherwise committed to outside work which affects the focus and intensity of their instruction. In order to allow this to happen, the instructor that is to be encouraged to join the center as a full-time instructor must be given at least the same level of position and salary as he had in the University or elsewhere. Currently, this is not possible given the interference of the university leadership in the policies of the center.
- A fundamental requirement: internet and power generation must be provided consistently to the academy!

6.5 Mosul University RNA Recommendations

- The relationship between the University and the center must be more flexible. The University must give the center more independence in order to operate more efficiently.

It would be best to make the academy a stand-alone project directly reporting to the Ministry of Higher Education

- We recommend that the center appoint delegates to visit key colleges and government departments in the area of Mosul's administrative influence and promote the message of the CNAP program and academies as well as the certificate granted to the graduates of the program. Iraq is at the beginning of an intellectual revival, so it is vital to intensify publicity and advertising by directing and explaining the importance of the subject.
- Preferably create a partnership or collaboration with mobile communications companies and governmental and private organizations involved in the kinds of work that is directly related to the kind of instruction that the centers offer. Provide a more mutual exchange of knowledge between the center trainers and the employees that are students of the center who have backgrounds in different types of technologies that are pertinent to the training.
- Supply more equipment. Existing equipment is inadequate, as is the case also at other Iraqi centers. This affects the function and continuity in development of training cadre and the expansion and completion of courses.

6.6 Basra University RNA Recommendations

- To first priority for making this a viable training center is to move it to a dedicated building in the center of the city of Basra to make it more accessible to trainers and trainees, removing the current location from the university campus and moving it to a place where there are more people, leading to greater ease in student recruitment.
- The center needs internet and electricity! Provision of the combination of internet and electricity is the first major priority in the process of growth of such centers, and the absence of these most important basic resources has had a large and direct impact on the level of participation in previous sessions up to the present.
- The Ministry of Higher Education must further emphasize the need to direct the university formally to form a committee that will visit the academy and assess the situation more accurately in order determine what the center needs for adequate support. Following this inquiry by the committee, the Ministry must take active steps with the university administration to provide for the center's many needs.
- Cisco should change the order and nature of exam questions that are posted on the internet for the course exams. Repetition of the exam questions used by Cisco allows for easy cheating. A simple solution for this must be available and should be implemented.