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CONSULTANCY SERVICES REGARDING THE
ESTABLISHMENT OF A DATA BANK

US/RAB/90/053/11-01

SYRIAN ARAB REPUBLIC

Technical report: Computerization at the ARU*

Prepared for the Government of the Syrian Arab Republic
by the United Nations Industrial Development Organization

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* This document has not been edited.

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ABSTRACT

COMPUTERIZATION OF THE ARAB RAILWAY UNION DAILY WORK

This report describes a 3 week mission. The purpose of the mission was to study the computerization requirements of the Arab Railway Union (ARU), as a step to enhance the administrative and technical activities of the Union. Hoping this step will lead to another steps widening the benefit of computerization to members of the Union.

INTRODUCTION

The ARU communicated to UNIDO the desire of its Board of Management and was confirmed by the Council of Arab Transportation Ministers, the desire to get help in the field of computerization i.e. feasibility study of creating a data bank especially for the activities of the Union which will be reflected in serving the ARU members network. This will be in the administrative, technical, economical and statistical aspects. It will help in narrowing the gap of information between these networks from one side and between them and the developed world from another side.

SOFTWARE TO BE PURCHASED AND/OR DEVELOPED

1. A statistical data bank about Arab Countries, railway networks and its length, personnel in the field of railways, passengers, goods etc.
The main source of this data bank will be based on the Quarterly Arab Railway Statistics periodical, which consists of 17 tables.
Estimated records: 340   Disk storage: 100KB
Estimated length of records for 20 countries is approximately 25kb each quarter i.e. 100 KB annually.

2. A biographical data bank about experts or technicians in the field of Railways, probably a selected international experts records could be stored in this data bank. The information will be something like the name, address, educational and work experience backgrounds, languages, specialization, publications, etc.
Estimated records: 1000   Disk storage: 1MB

3. In the field of Research and Development. To provide some feasibility studies programs, economic and technical analysis.

4. A diverse list to serve in correspondence and distribution of the ARU magazine, statistical Arab Railway statistics and other administrative purposes.
Estimated records: 500   Disk storage: 125KB

5. A special data bank to store information concerning consultancy institutions in the field of Railways i.e. name, address, specialty, fields of experience, capital, number of employees etc.
Estimated records: 100   Disk storage: 50KB

6. A data bank storing information about companies/institutions of supplies and tools related to Railways field i.e. name, address, type of materials, tools, prices, major customers. Companies and institutions are mainly classified as:
- Railway Diesel Engines & Components
- Locomotive & Rolling stock
- Locomotive & Rolling stock components
- Brakes and Drawgear
- Signaling, Interlocking and Telecommunications
- Track Materials
- Track Materials and Equipment
- Consultants
- Railway Electrification

Estimated records: 500   Disk storage: 0.5MB

7. A system to follow up on the incoming and outgoing correspondence.
Estimated records: 800   Disk storage: 160KB

8. A program to store information about members of the Union.
   Estimated records: 20   Disk storage: 4KB

9. Payroll/Personnel, General Ledger, but this item has a low priority at the present time.

10. Word Processing (WP), and Desk Top Publishing (DTP).
There is a lot of work in this field, for the ARU is publishing a quarterly magazine and Quarterly Statistical periodical. From time to time they publish and update a specialized dictionaries in the field of Railways, seminar research papers, different reports, letters of correspondence etc.
Disk storage: 3.5MB

11. Miscellaneous programs like graphics, statistics etc.

12. A bibliographic data bank about the conferences papers to enable users to store and retrieve these papers.

TIME SCHEDULE FOR SYSTEMS TO BE DEVELOPED:

Some of the systems need to be developed/tailored for the requirements of the ARU, others need to be purchased/acquired as ready made packages.
a) Systems to be developed:

1. Statistical data bank   6 man/weeks

2. Biographical data bank about experts   3 man/weeks

4. Mailing list   2 man/weeks

5. Consultancy institutions data bank   3 man/weeks

6. Railways supplies & tools data bank   4 man/weeks

7. Incoming & outgoing mail follow-up   1 man/week

b) Systems to be purchased (ready made packages):

1. Word Processor i.e. Word Star 2000   US $ 500

2. Economic and financial i.e. Lotus 123 $ 500

3. Business Graphics i.e. Harvard graphics $ 500

4. Desktop publishing Arabic/English $ 2500
   (Al-Arabi Lil-Nashr from ICS, London or CCS, Amman)
   or
   Al-Nashir Al-Maktabi of Jordan Computer Center $ 700

5. Relational DBMS such as ORACLE, R:BASE, Ingres,
   or Foxbase. Ranges from $ 1300   for Oracle to $ 600
   for each of the other packages.

RECOMMENDATIONS & ESTIMATED PRICES FOR SYSTEMS TO BE PURCHASED:

a) Hardware:

A two Taiwanese IBM Compatible PCs 80386 @ 1700 each $ 4,800

HP LaserJet printer LaserJet IIP $ 1,300

Optional:

   1) Tape backup drive, 40MB capacity $ 640

   2) Facsimile card and modem $ 570
     (To ease communicating with international data banks and
     other computer centers).

b) Ready Made Software (packages):

   1. Word Processor i.e. Word Star 2000   US $ 500

   2. Economic and financial i.e. Lotus 123 $ 500

   3. Business Graphics i.e. Harvard graphics $ 500

   4. Al-Nashir Al-Maktabi of SAKHR
              Jordan Computer Center $ 700

   5. R:BASE DBMS $ 600

SITE PREPARATION:

The proposed hardware does not require special site preparation. The usual office environment will be sufficient.

PERSONNEL & TRAINING

The ARU staff is limited to a number of 10 people 6 of them need training on the future systems.

The staff are: The Secretary General, A technical manager/adviser, International Relations manager, Administrative manager, Financial manager, and a Typist clerk.

The suggested languages of training are Arabic as primary language and English as a secondary language.

1. All of the ARU staff need too be trained on systems/programs as users, every one will be trained on programs related to his daily work.
Estimated time 2 weeks covering training on general use of systems.

2. The training of a technical person to be responsible for the computer operation either by training one of the present staff or by hiring a computer graduate if possible.
Training of a person from the present staff need at least 3 months of training to be familiar with most of the data processing environment. In case of hiring a computer graduate, and depending on the experience he has, a two weeks to four weeks of training might be adequate.

Training could be arranged as general lectures for all staff, covering introduction to computers which will include a brief

history of computers, present capabilities, etc. 2-4 hours.

Practical training about word processing 8-10 hours.
DTP will be part of the computer specialist training.

<u>CONCLUSION:</u>

As mentioned above in 'ESTIMATED PRICES FOR SYSTEMS TO BE PURCHASED', and by considering Option I i.e. choosing the IBM Compatible solution, acquiring a 2 Personal Computers as a starting point will be sufficient for the time being. That will absorb most of the administrative and operational work like typing, correspondence, preparation and calculation of statistics, DTP etc., for the coming 2-3 years.

PC networking is not needed at this time. Depending on future expansion of the scope of work it could be reconsidered.

ANNEX

Hardware Requirements

Item	Est. Price

OPTION I:

1) A personal computers with the following configuration:

IBM or compatible 80386 processor with 25 or 33 MHz clock speed

2MB RAM (To be effective on DTP)

64 KB cache memory

HDD/FDD controller support 2 floppy and 2 hard disks

2 floppy drives 5.25" (1.2MB) and 3.5" (1.44MB)

40 MB Hard disk

8 expansion slots

2 serial, 1 parallel ports

Arabic/Latin (101 keys) keyboard

VGA Card

VGA Color Monitor

Total price for all items above	$ 2,400

2) (Option) Facsimile card and modem $ 570
(To be able to communicate with international data banks and other computer centers).

3) HP LaserJet series III printer, 8 PPM, 1MB RAM $ 3,000
    or
    HP LaserJet IIP printer, 4 PPM, 512KB RAM $ 1,300

4) HP ScanJet Plus Scanner $ 3,000

5) External 40 MB Tape streamer $ 650

OPTION II:

1)   One IBM or Compatible Personal Computer with same as (1) in option I above.

2) One Apple Macintosh with the following configuration:

    a) Hardware:
       Macintosh LC 2/40, Arabic
       . 2MB RAM expandable to 10 MB
       . 40 MB Hard Disk
       . Motorola 68020, 32-bit, 16 MHz
       3.5" 1.44KB Disk Drive
       Apple ISO Keyboard
       Apple 12" RGB Color Monitor
       Cabling, LocalTalk Connector Kit Din-8
       Total price of above items $ 3,400

    b) Software:
       Wintext (Arabic Word Processor)
       Al-Nashir Al-Maktabi
       Total price of items above i.e. software $ 1,000

    c) Apple Printer, LaserWriter NT, 2MB RAM, 4 PPM $ 3,900
       or
       The printer solution could be an HF LaserJet IIP with
       almost the same capabilities & interfacing with
       Apple Macintosh $ 2,800