Main Information Center

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What is the Mandate (1999)?

- Review previous mandate.
- Questionnaire for all sectors.
- Interviews with DM.
- Meeting with IDS managers.

General Objective of MIC

1. Build and maintain a new reliable LAN that spreads over MWRI building.
2. Build and maintain home page for MWRI.
3. Establish different IS for
   I. Historical information for DM.

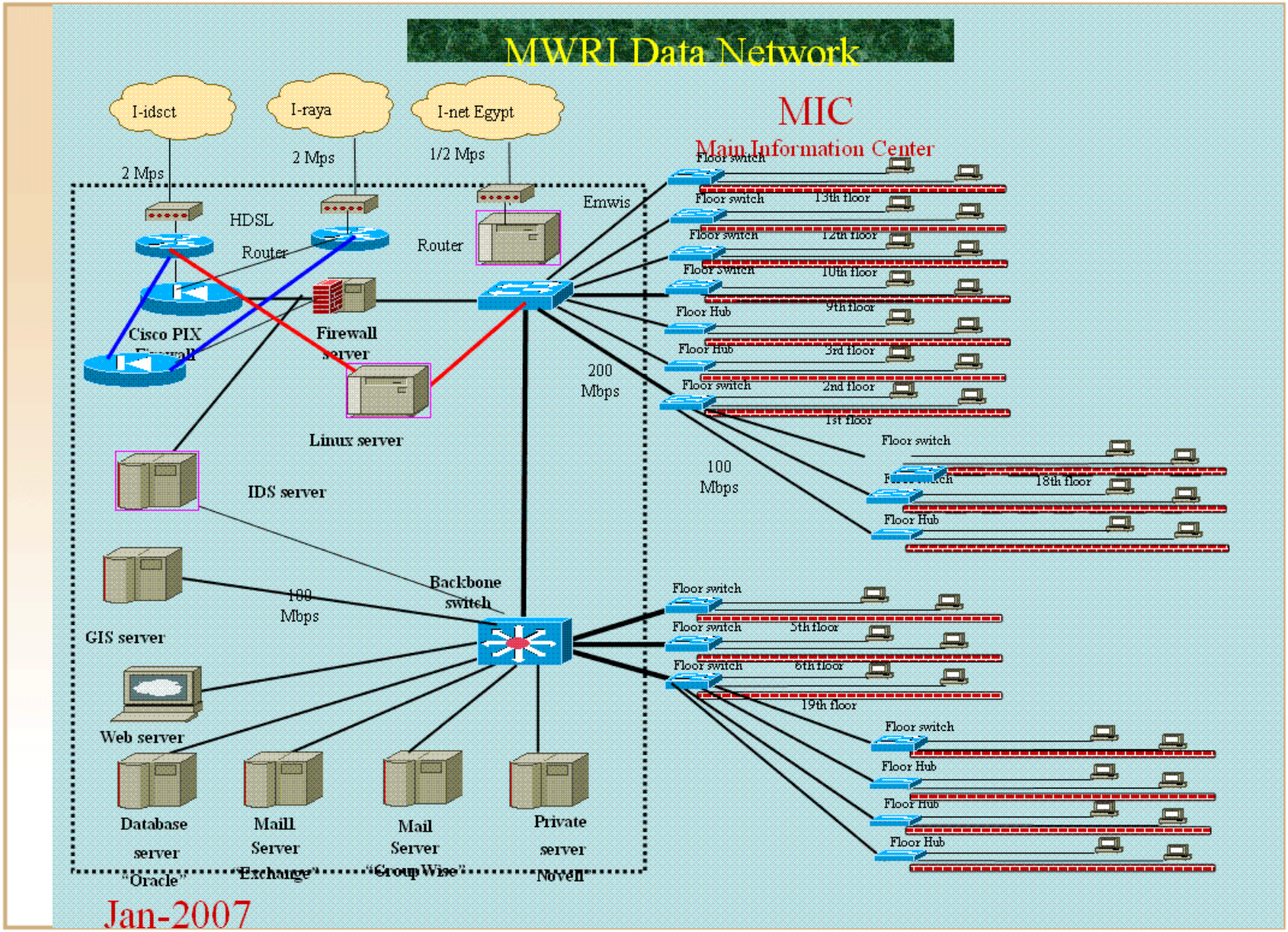
General Objective of MIC (cont.)

II. Does not require frequent updates.

III. can be used by different sectors.

IV. for producing statistics for DM.

4. Disseminate digital maps.
5. Assist different sectors in MWRI for building IS.
6. Build DSS for specific DM.


MWRI Data Network
MIC
Main Information Center
I-idsct
I-raya
I-net Egypt
2 Mps
2 Mps
1/2 Mps
HDSL
Router
Router
Emwis
Cisco PIX
Firewall
Linux server
IDS server
200
Mbps
100
Mbps
100
Mbps
Backbone
switch
GIS server
Web server
Database
server
"Oracle"
Maill
Server
Exchange
Mail
Server
"GroupWise"
Private
server
Novell
Floor switch
13th floor
12th floor
10th floor
9th floor
Floor Hub
3rd floor
2nd floor
1st floor
18th floor
5th floor
6th floor
19th floor
Jan-2007

1- Network in MIC

A. 17 server.
B. 3 internet connection 2-0.5 m/bit.
C. 350 computer connected to the LAN.
D. Two Cisco 3550 Gigabit layer 3 switches are installed to provide 1 Gbps link to each access switch. Access switches are distributed across the building floors.

1- Network in MIC (cont.)

E. Cisco switches are installed in each floors to provide 10/100/1000 LAN connectivity.

F. Network operating systems:
   - Novell
   - Linux Enterprise
   - Microsoft

1-Network in MIC (cont.)
Network Services

This system provides the following network services:

1. User authentication and authorization
2. File and print sharing
3. Controlling and monitoring Internet access
4. Web services
5. Email services
6. TCP/IP services: DNS, DHCP, and WINS
4. Desktop management services

1-Network in MIC (cont.)
Network Servers

To implement that services we have:

1- Two domain controllers Win2003 servers
2- Front-end and Back-end
   Exchange servers (Exc. 2003)
3- ISA Server (ISA 2004)
4- Web server
5- System Management server

1-Network in MIC (cont.)
Backup Network

- The Linux server features:
  - IDS server
  - Firewall server
  - file server
  - proxy server
  - email server
  - DHCP/DNS server

1-Network in MIC (cont.) Performance

Current setup

- Each Department has a dedicated VLAN to isolate its traffic.
- The Backbone Switch 3550 with a robust backplane 24 Gbps.
- The uplinks speed is 1 Gbps.
- The two domain controllers provide active directory load balance.

Future plan

- Install a Gigabit switch to serve as a server farm.

1-Network in MIC (cont.) Manageability

Current setup

- Cisco Cluster Management S/W for all infrastructure components.
- MS-ISA manages all Internet access.
- Fluke and IRIS traffic monitoring utilities.
- Strict TCP/IP system using VLANs and DHCP.

Future plan

- Using CiscoWorks Management system.

1-Network in MIC (cont.) Security

Internet security (against Internet threats)

1- PIX firewall provides the first level of protection.
2- ISA server provides the second level of protection.
3- Database is protected by the ORACLE System.
4- The most secure data are stored on the Novell.
server which is completely isolated from Internet.
5- Intrusion detection system (IDS).

Email Security

1- Front-end/Back end Exchange implementation.
2- Email data transfer is encrypted using SSL.

Virus Protection

Norton Antivirus corporate edition are implemented in all servers and workstations.

Future Plane

Norton Antispam prevents junk mail.

1-Network in MIC (cont.) Costs

- Infrastructure Cost
  - 3 Million (Switches, Hubs, Lines, Servers, Routers, Internet connections, USP, etc.)
- Maintains
  - 100,000 (Internet, Servers Updates, Software, etc.)
  - 50, 000 (Technical support).
- Training
  - 20, 000

1-Network in MIC (cont.) Legal/Administration

- Ministerial Declaration No 10 for 2003, Date 15/10/03 for MWRI. Prohibit the following actions without agreement of MIC:
  - Connect to the LAN
  - Build a computer network inside or outside the MWRI.
  - Establish internet connection inside or outside MWRI.

1-Network in MIC (cont.) Legal/Administration

- MIC contract
  - Renew yearly
  - Internet browsing, FTP, TELNET, Upload.
  - Responsibility of MIC
  - Responsibility of the User
  - Monitoring reports
  - Must be with the head sector approval.

1-Network in MIC (cont.) Constraints

- Audio/video is forbidden.
- WS antivirus is necessary.
- One day notice for maintains activities.
- Business related websites with a 30 sec tolerance.
- Max of 10 Meg attachment with maximum 15 cc.
- Download notification for more than 10 M.
- Mailbox with 50 m capacity.

1-Network in MIC Evaluation

- Best network security system by IDSC in 2001 for Ministries competition.
  - Ranked 1st .

2- Home Page for MWRI

- More than 500 pages include all sectors of MWRI in Arabic and English.
- For each sector
  - Responsibilities, achievements, future plans, and structure.
  - Contacts information.
- Mega projects
  - HAD
  - Toushka
  - El salam canal
  - West Delta Project
- Historical information about MWRI.

2- Home Page for MWRI (cont.)

- Objectives of MWRI
- Organization charts
- Laws, News and events
- Services (79)
  - Type
  - What forms required
  - How much the cost
  - Where can be done
  - Who can contact
- Links

2- Home Page for MWRI (cont.)

- Design update every two years (2000, 2003, 2005). MIC will launch a new design by the end of this year.
- Contents updated Monthly.
- 59,000 visitors in last of 2 years.
- Best Home page by IDSC in 2001 for Ministries competition.
  - Ranked 3st .

2- Home Page for MWRI (cont.)

- Ministerial Declaration No 10 for 2003, Date 15/10/03 for MWRI. Prohibit the following actions without agreement of MIC:
  - Publish any information on the internet.
  - Establish any Website that has information regarding MWRI.

2- Home Page for MWRI (cont.)

- Request for publishing on the internet:
  - The contents in Arabic and English.
  - The design of the Web pages electronically and printed.
  - Server for hosting
  - Technical information and security.

3-Information System

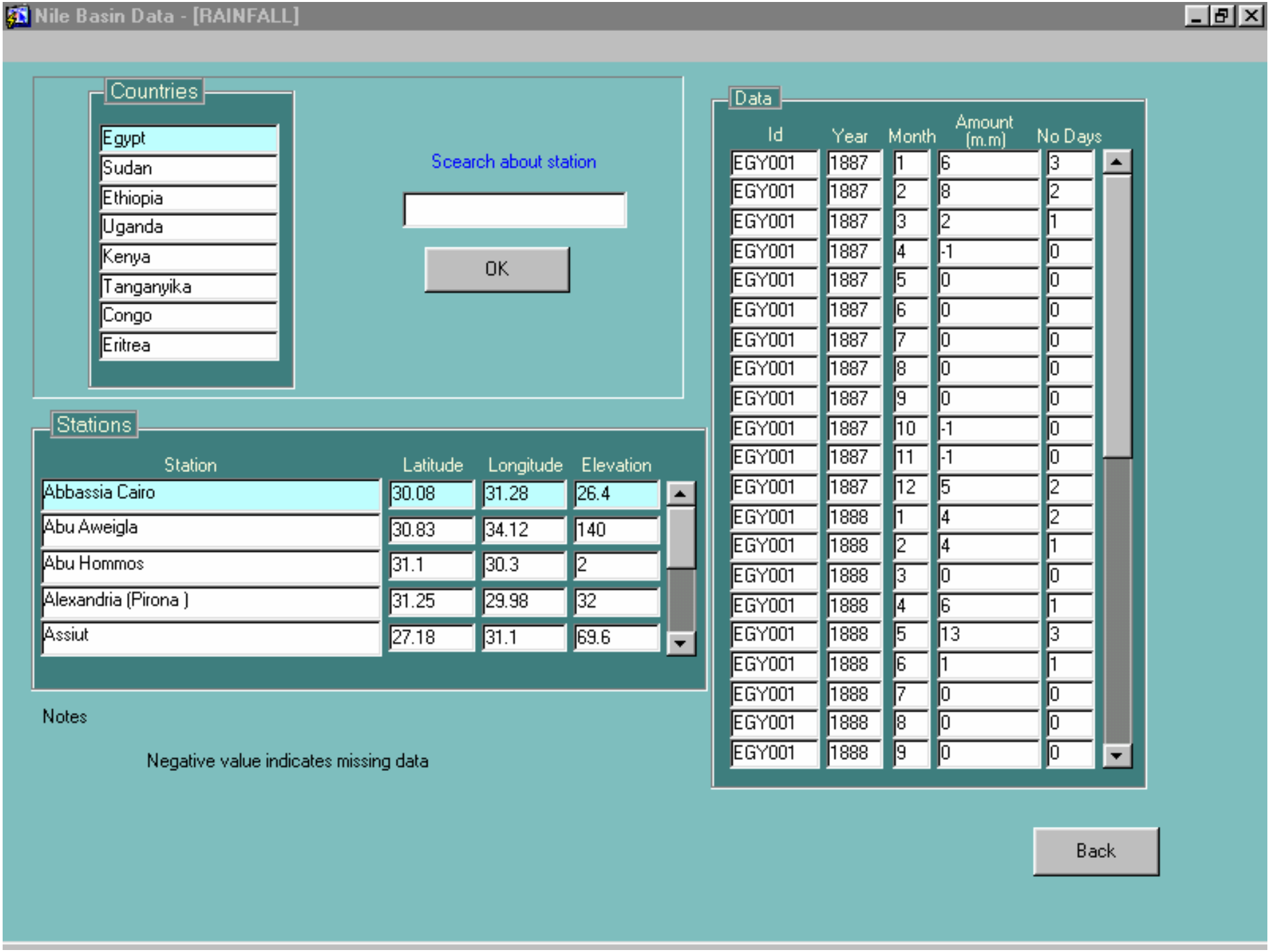
- Nile basin (rainfall) database
  - 240,000 Records (10,000 pages)
  - 1867 to 2002 Monthly and Yearly amount of rainfall in mm for 492 gauge station.
  - Oracle DB
  - Available on LAN/WAN.
  - Monthly/yearly rainfall digital maps for the Nile basin watershed.
  - Updated every 5 years.

3-Information System (cont.)

- Nile basin (Discharge) database
  - 245,000 Records (4,600 pages)
  - 1890 to 1997
  - 10 days, Monthly and Yearly discharge records for 285 gauge station.
  - Oracle DB.
  - Available on LAN/WAN.
  - Digital map for gauge stations.
  - Updated every 5 years.

3-Information System (cont.)

- Nile basin (Levels) database
  - 303,000 Records (9,000 pages)
  - 1902 to 1997
  - 10 days, Monthly and Yearly records for 202 gauge station.
  - Oracle DB.
  - Available on LAN/WAN.
  - Digital map for gauge stations.
  - Updated every 5 years.

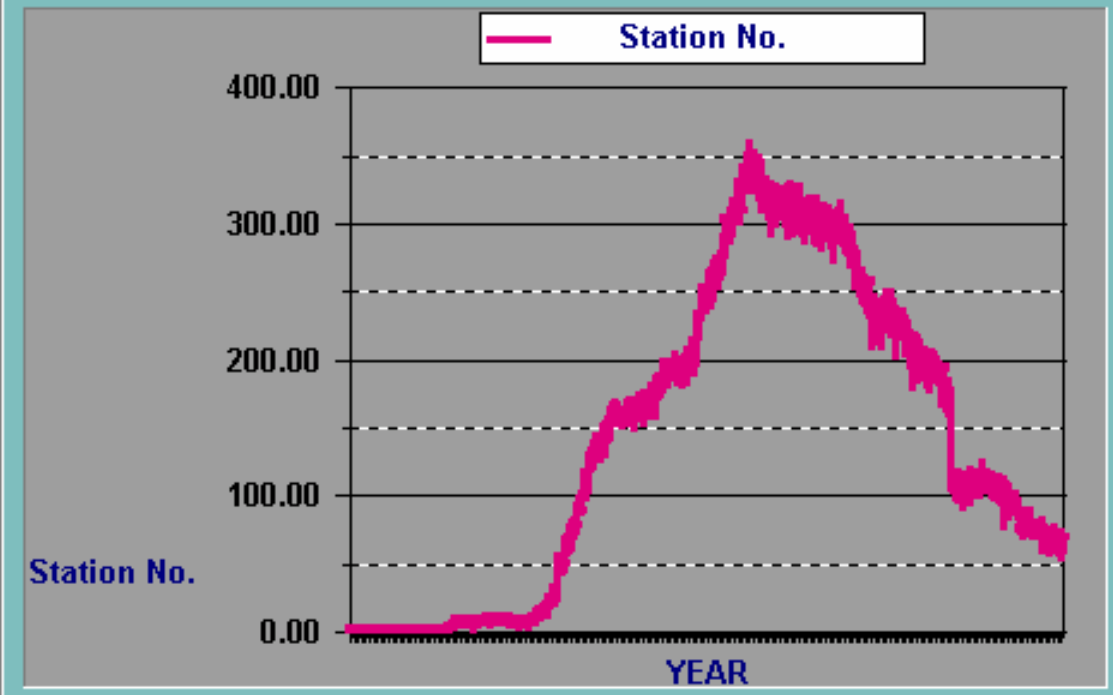

Nile Basin Data - [RAINFALL]
Countries
Egypt
Sudan
Ethiopia
Uganda
Kenya
Tanganyika
Congo
Eritrea
Scearch about station
OK
Stations
Station
Latitude
Longitude
Elevation
Abbassia Cairo 30.08 31.28 26.4
Abu Aweigla 30.83 34.12 140
Abu Hommos 31.1 30.3 2
Alexandria (Pirona) 31.25 29.98 32
Assiut 27.18 31.1 69.6
Notes
Negative value indicates missing data
Data
Id Year Month Amount (m.m) No Days
EGY001 1887 1 6 3
EGY001 1887 2 8 2
EGY001 1887 3 2 1
EGY001 1887 4 -1 0
EGY001 1887 5 0 0
EGY001 1887 6 0 0
EGY001 1887 7 0 0
EGY001 1887 8 0 0
EGY001 1887 9 0 0
EGY001 1887 10 -1 0
EGY001 1887 11 -1 0
EGY001 1887 12 5 2
EGY001 1888 1 4 2
EGY001 1888 2 4 1
EGY001 1888 3 0 0
EGY001 1888 4 6 1
EGY001 1888 5 13 3
EGY001 1888 6 1 1
EGY001 1888 7 0 0
EGY001 1888 8 0 0
EGY001 1888 9 0 0
Back

STATISTICS - [RAINFALL]

Year | Month | Number of stations | Apply

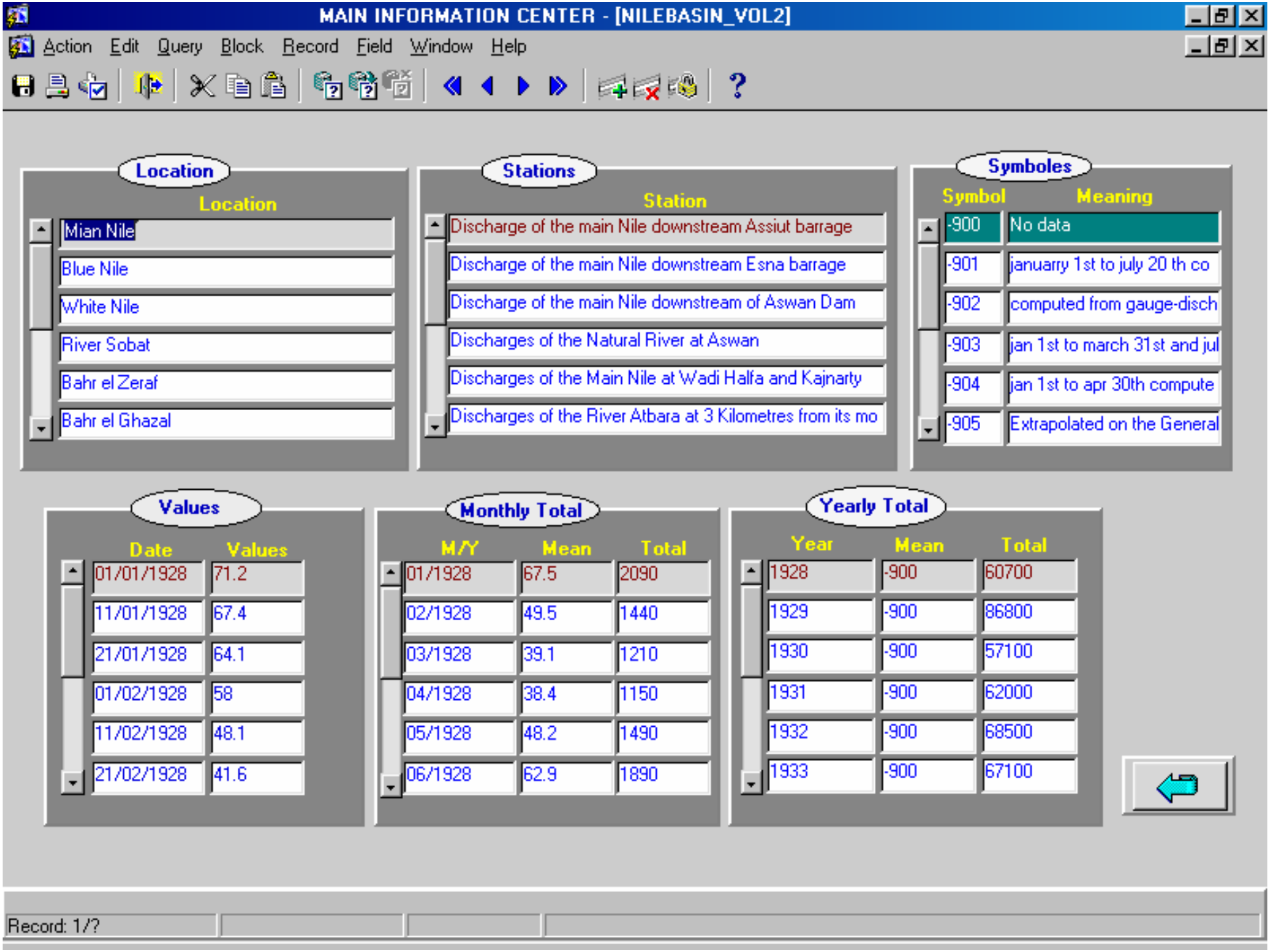
Year	Month	Station No	
1867	11	1	Names
1867	12	1	Names
1868	1	1	Names
1868	2	1	Names
1868	3	1	Names
1868	4	1	Names
1868	5	1	Names
1868	6	1	Names
1868	7	1	Names
1868	8	1	Names
1868	9	1	Names
1868	10	1	Names
1868	11	1	Names
1868	12	1	Names
1869	1	1	Names

Sort Asi / Sort Des | Sort Asi / Sort Des | Sort Asi / Sort Des



Back

Record: 1/1502 <OSC> <DBG>


MAIN INFORMATION CENTER - [NILEBASIN_VOL2]
Action Edit Query Block Record Field Window Help
Location
Location
Mian Nile
Blue Nile
White Nile
River Sobat
Bahr el Zeraf
Bahr el Ghazal
Stations
Station
Discharge of the main Nile downstream Assiut barrage
Discharge of the main Nile downstream Esna barrage
Discharge of the main Nile downstream of Aswan Dam
Discharges of the Natural River at Aswan
Discharges of the Main Nile at Wadi Halfa and Kajnarty
Discharges of the River Atbara at 3 Kilometres from its mo
Symboles
Symbol Meaning
-900 No data
-901 januarry 1st to july 20 th co
-902 computed from gauge-disch
-903 jan 1st to march 31st and jul
-904 jan 1st to apr 30th compute
-905 Extrapolated on the General
Values
Date Values
01/01/1928 71.2
11/01/1928 67.4
21/01/1928 64.1
01/02/1928 58
11/02/1928 48.1
21/02/1928 41.6
Monthly Total
M/Y Mean Total
01/1928 67.5 2090
02/1928 49.5 1440
03/1928 39.1 1210
04/1928 38.4 1150
05/1928 48.2 1490
06/1928 62.9 1890
Yearly Total
Year Mean Total
1928 -900 60700
1929 -900 86800
1930 -900 57100
1931 -900 62000
1932 -900 68500
1933 -900 67100
Record: 1/?

3-Information System (cont.)

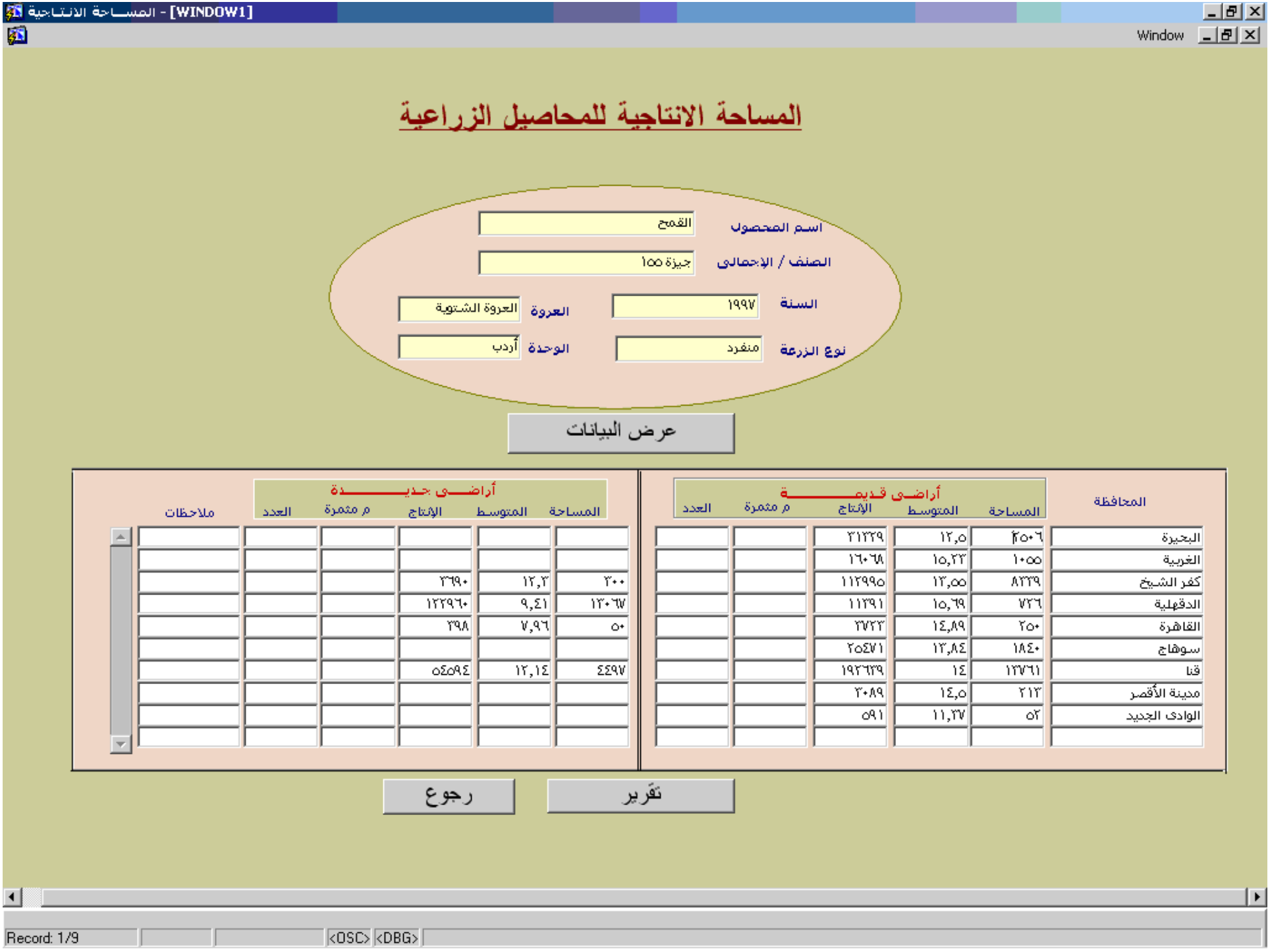
- Water distribution database
  - 2.8 Million Records (22,000 pages)
  - 1986 to today
  - Upstream & downstream levels and discharge records for 360 Location.
  - Oracle DB.
  - Available on LAN.
  - Digital map for measured location.
  - Updated every day.
  - Users
    - Irrigation sector
    - Ministry Office

3-Information System (cont.)

- Ministerial declaration
  - 6,407 Records (5,430 pages)
  - 1994 to today
  - Oracle DB.
  - Available on LAN.
  - Updated every day.
  - Users
    - Ministry Office
    - Irrigation Authority

3-Information System

- Agriculture database
  - 72,000 Records (10,000 pages)
  - 1986 to 2005
  - Agriculture area (new and old land), production, return by unit area, etc.
  - Oracle DB
  - Available on LAN.
  - Updated every 6 month.


المساحة الانتاجية - [WINDOW1]
Window
المساحة الانتاجية للمحاصيل الزراعية
اسم المحصول
القمح
الصنف / الإجمالى
جيزة ١٥٥
السنة
١٩٩٧
العروة
العروة الشتوية
نوع الزرعة
منفرد
الوحدة
أردب
عرض البيانات
المحافظة
أراضى قديمة
المساحة
المتوسط
الإنتاج
م مثمرة
العدد
أراضى جديدة
المساحة
المتوسط
الإنتاج
م مثمرة
العدد
ملاحظات
البحيرة ٣٥٠٦ ١٢,٥ ٣١٢٢٩
الغربية ١٠٥٥ ١٥,٢٣ ١٦٠٦٨
كفر الشيخ ٨٢٣٩ ١٢,٥٥ ١١٢٩٩٥
الدقهلية ٧٢٦ ١٥,٦٩ ١١٣٩١
القاهرة ٢٥٠ ١٤,٨٩ ٣٧٢٣
سوهاج ١٨٤٠ ١٢,٨٤ ٢٥٤٧١
قنا ١٣٧٦١ ١٤ ١٩٢٦٣٩
مدينة الأقصر ٢١٣ ١٤,٥ ٣٠٨٩
الوادى الجديد ٥٢ ١١,٢٧ ٥٩١
٣٠٠ ١٢,٣ ٣٦٩٠
١٣٠٦٧ ٩,٤١ ١٢٢٩٦٠
٥٠ ٧,٩٦ ٣٩٨
٤٤٩٧ ١٢,١٤ ٥٤٥٩٤
تقرير
رجوع
Record: 1/9
<OSC>
<DBG>

3-Information System (cont.)

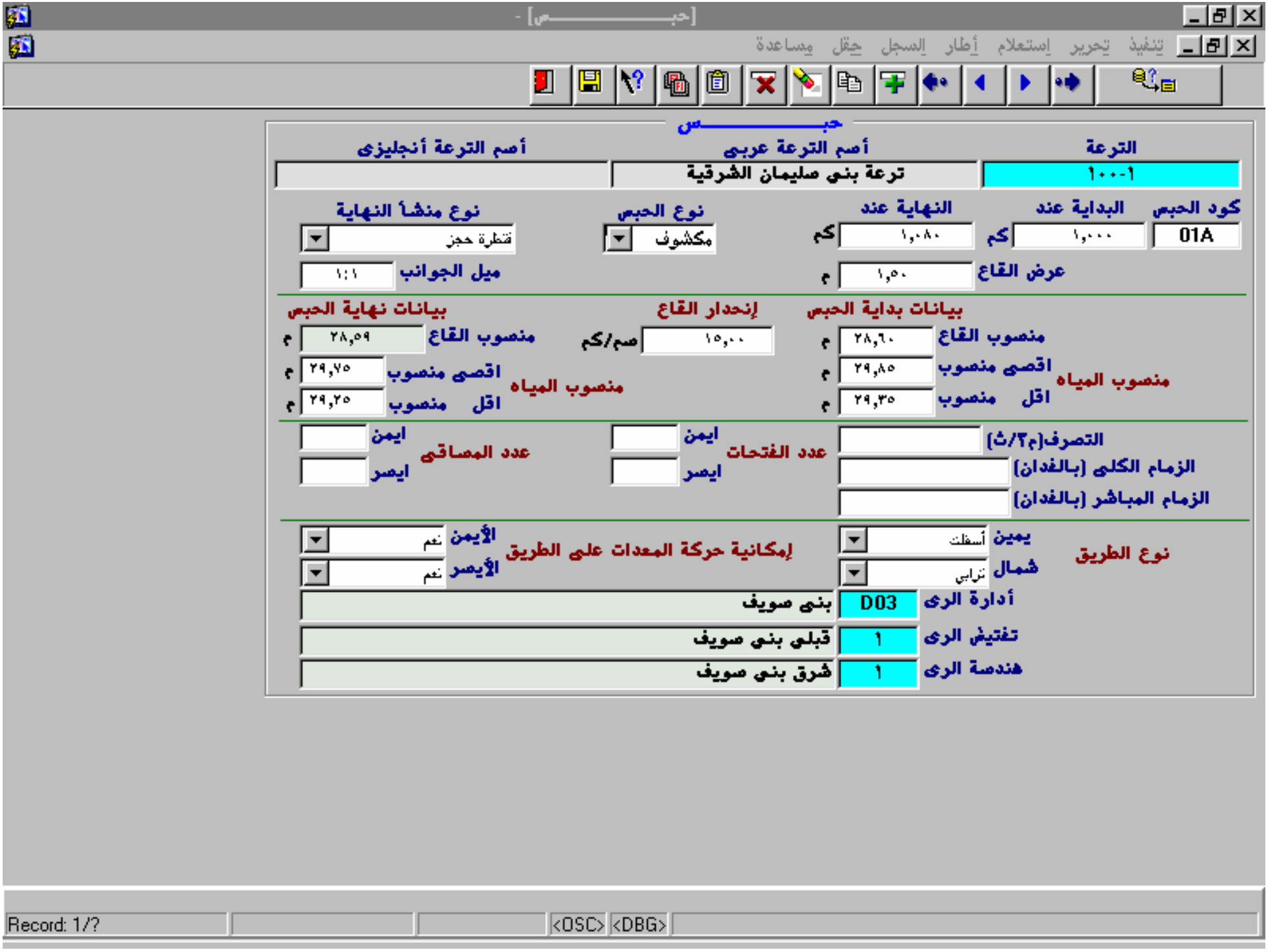
- Water network structures database
  - 13,720 record (8,000 pages)
  - 0.5 Million figure
  - 1870 to today
  - For each reach:
    - Bed level for each end.
    - Max water level for each end.
    - Min water level for each end.
    - Direct area served.
    - Indirect area served.
    - Reach width.

3-Information System (cont.)

- Side slops.
- Code.
- No. of Mesqa in each side
- Bed slope.
- Blue Prints (working and constriction drawings).
- Type of constriction in each end.
- Type of reach
- Administration information.
- Maintenance information.
- Road type (right or left)

3-Information System (cont.)

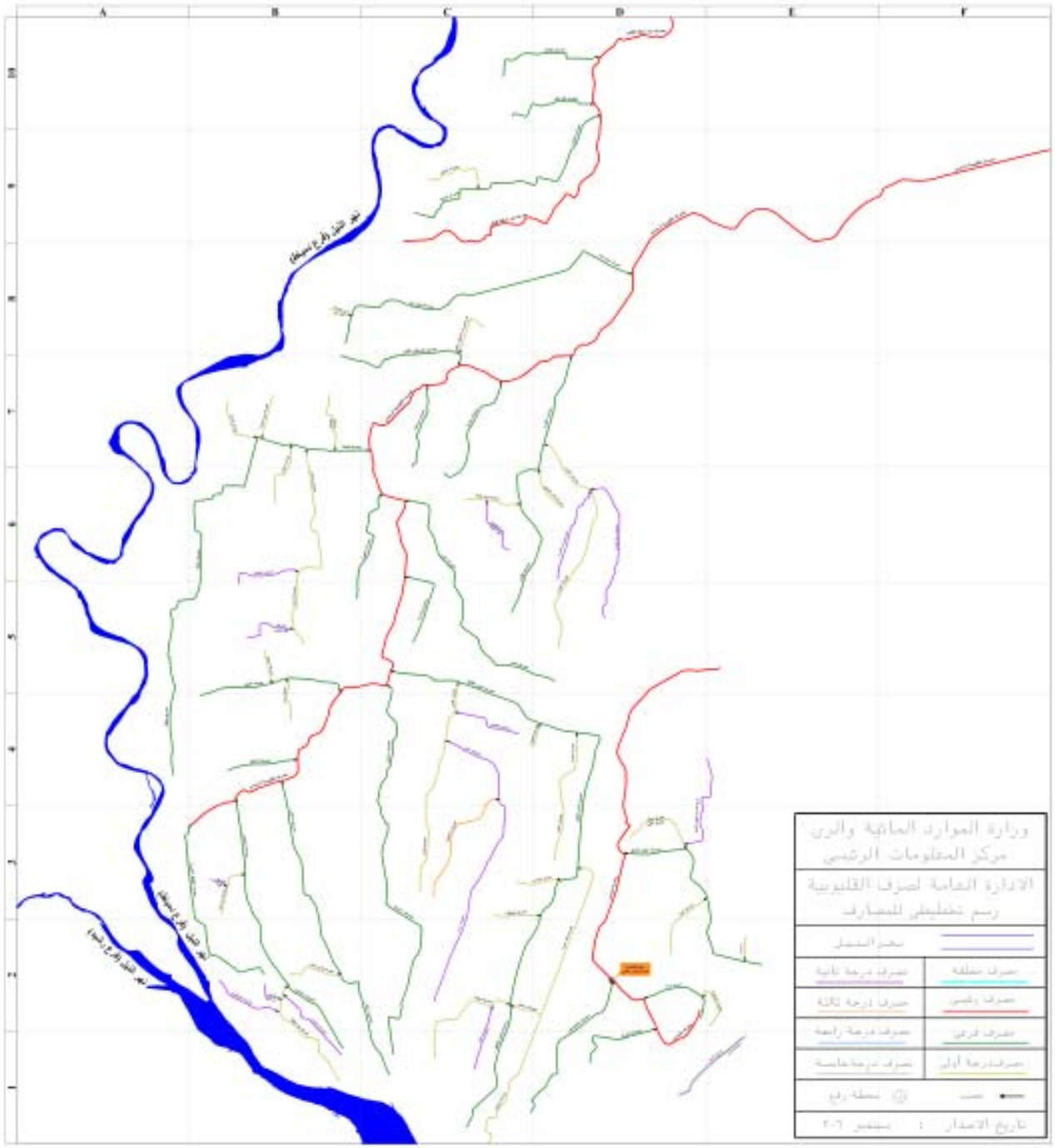
- Oracle DB
- Available on LAN.
- Updated frequently.
- Users
  - Reservoir sector
  - NWRC
- Completed for canals and reaches
- 20 out of 28 directorates is reviewed

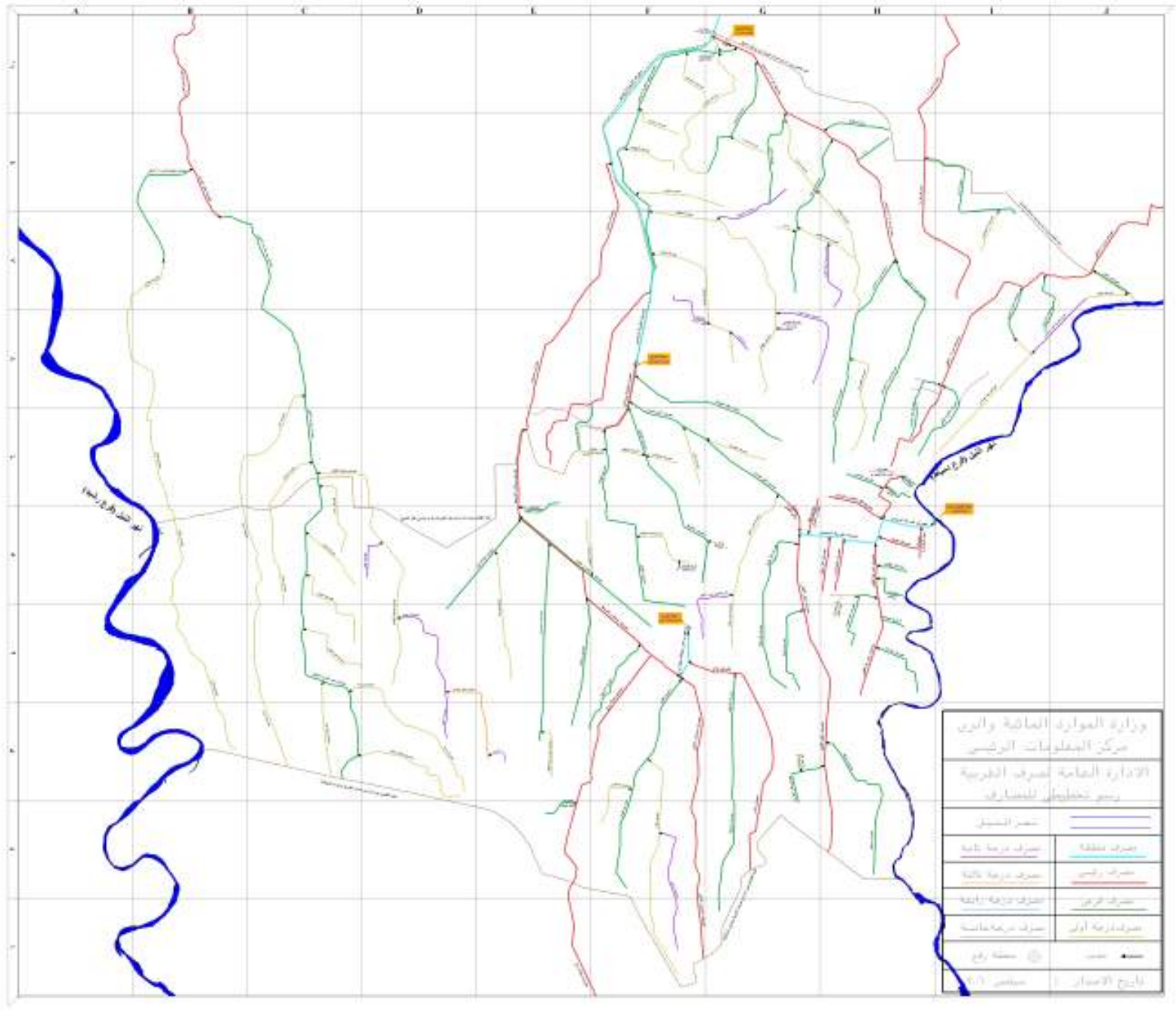

[حبـــــــــــس] -
تنفيذ تحرير إستعلام أطار إلسجل حقل مساعدة
حبـــــــــــس
الترعة
أسم الترعة عربى
أسم الترعة أنجليزى
١٠٠-١
ترعة بنى سليمان الشرقية
كود الحبس
البداية عند
النهاية عند
نوع الحبس
نوع منشأ النهاية
01A
١,٠٠٠ كم
١,٠٨٠ كم
مكشوف
قنطرة حجز
عرض القاع ١,٥٠ م
ميل الجوانب ١:١
بيانات بداية الحبس
إنحدار القاع
بيانات نهاية الحبس
منسوب القاع ٢٨,٦٠ م
١٥,٠٠ صم/كم
منسوب القاع ٢٨,٥٩ م
منسوب المياه
اقصى منسوب ٢٩,٨٥ م
اقل منسوب ٢٩,٣٥ م
اقصى منسوب ٢٩,٧٥ م
اقل منسوب ٢٩,٢٥ م
التصرف(م٣/ث)
الزمام الكلى (بالفدان)
الزمام المباشر (بالفدان)
عدد الفتحات
ايمن
ايسر
عدد المساقى
ايمن
ايسر
نوع الطريق
يمين أسفلت
شمال ترابي
إمكانية حركة المعدات على الطريق
الأيمن نعم
الأيسر نعم
أدارة الرى D03 بنى سويف
تفتيش الرى 1 قبلى بنى سويف
هندسة الرى 1 شرق بنى سويف
Record: 1/?
<OSC>
<DBG>

3-Information System (cont.)

- Schematics for irrigation system Drawing
  - 28 A0 drawing one for each directorate contain irrigation system and its hierarchy rank.
  - 208 A3 drawing one for each district contain irrigation system and its hierarchy rank.
  - Updated frequently.
  - Users
    - Irrigation sector
    - Irrigation Authority
    - Reservoir sector
    - Irrigation directorates
    - NWRC

Acrobat Document


وزارة الموارد المائية والري
مركز المعلومات الرئيسي
الادارة العامة لصرف القليوبية
رسم تخليلي للمصارف
بحر الشمال
مصرف مطلة
مصرف درجة ثانية
مصرف رئيسي
مصرف درجة ثالثة
مصرف فرعي
مصرف درجة رابعة
مصرف درجةخامسة
مصرف درجة أولي
محطة رفع
تاريخ الاصدار : سبتمبر ٢٠٠٦


وزارة الموارد المائية والري
مركز المعلومات الرئيسي
الادارة العامة لصرف الغربية
رسم تخطيطي للمصارف
مصرف المشروع
مصرف منطقة
مصرف درجة ثانية
مصرف رئيسي
مصرف درجة ثالثة
مصرف فرعي
مصرف درجة رابعة
مصرف درجة أولى
مصرف درجة خامسة
نقطة رفع
تاريخ الاصدار

3-Information System (cont.)

- Ministerial Declaration No 4 & 5 for 2004, Date 7/7/04 for MWRI. For providing the following information to MIC:
  - Resume for all International experts that working in MWRI.
  - International Trainees.
- Under construction.

4-Digital Maps (GIS) and Remote Sensing Images

- Digital maps for Egypt:
  - Topographic Maps
    - 1: 2 M
    - 1: 0.5 M
    - 1: 250,000 (paper only)
    - 1: 50,000 (Wadi and Delta) (under inspection)
    - 1: 25,000 (Wadi & some parts in upper Egypt) only in papers
    - 1: 5,000 (new irrigation districts)
    - 1: 2,500 (some parts in delta) papers
  - DEM
    - 1 km resolution
    - 90 m resolution
    - 30 m resolution (not completed)

4-Digital Maps (GIS) and Remote Sensing Images

- Geology
  - 1: 2m
- Hydrological (1 km resolution)
  - Basins
  - Natural streams
- Natural vegetation (1: 200,000)
- Land covers (1: 200,000)
- Irrigated land classification (1: 200,000)

4-Digital Maps (GIS) and Remote Sensing Images

- Remote Sensing Images for Egypt:
  - Landsat MSS (1970) with 57.0 meters and 4 bands
  - Landsat TM (1990) with 28.5 meters and 7 bands
  - Landsat ETM+ (2000) with 14.25, 28.5 meters and 7 bands
  - Landsat 5 for Toushka, Delta, El salam canal (2005), 5 bands

4-Digital Maps (GIS) and Remote Sensing Images

- Digital maps for Nilebasin:
  - Topographic Maps
    - 1: 2 M
    - 1: 200,000
  - DEM
    - 1 km resolution
    - 90 m resolution
    - 30 m resolution (not completed)

4-Digital Maps (GIS) and Remote Sensing Images

- Geology
  - 1: 2m
- Hydrological (1 km resolution)
  - Basins
  - Natural streams
- Natural vegetation (1: 200,000)
- Land covers (1: 200,000)
- Irrigated land classification (1: 200,000)

4-Digital Maps (GIS) and Remote Sensing Images

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  - Landsat ETM+ (2000) with 14.25, 28.5 meters and 7 bands
  -

4-Digital Maps (GIS) and Remote Sensing Images

- Dissemination information
  - SDE and IMS server through the LAN.
- Under preparation (end 2008)
  - Distracts boundaries
  - Area Served for main canals

4-Digital Maps (GIS) and Remote Sensing Images

- Determining Crop Area of Six Major crops cultivated in winter and summer
  - 6 districts in upper and lower Egypt
  - Six major crop recognition in summer and winter
  - 75 ground truth point collect from each distract for each crop
  - Different types of satellites images is tested include:
    - Landsat 5 – Spot 10m – Spot 20m – Quickbird – Aster

5- Assist different information centers

- Software distribution
  - MS windows 98, 2000, XP for ws
  - MS office 2000, XP for ws
  - Exchange 2003 (server)
  - ISA 2004 (server)
  - Windows server 2003 (server)
- Training
  - 45 trainees/year
- Information systems collection book

5- Assist different information centers (count.)

- Database for the distracts:
  - Water levels
  - Violations
  - Complains
- Implemented in 27 districts
- IT support and standard installation.

5- Assist different information centers (count.)

- Water level database for districts (IWRM)
  - Four directorates (Zefta, Shrkia, Qena, Aswan), and 27 district
  - 1.6 million Records (20,000 pages)
  - 2004 until now daily up stream, down stream, discharge for 1755 structure.
  - Access + Visual.net
  - Updated daily.

5- Assist different information centers (count.)

- Complain database for districts (IWRM)
  - Four directorates (Zefta, Shrkia, Qena, Aswan), and 27 district
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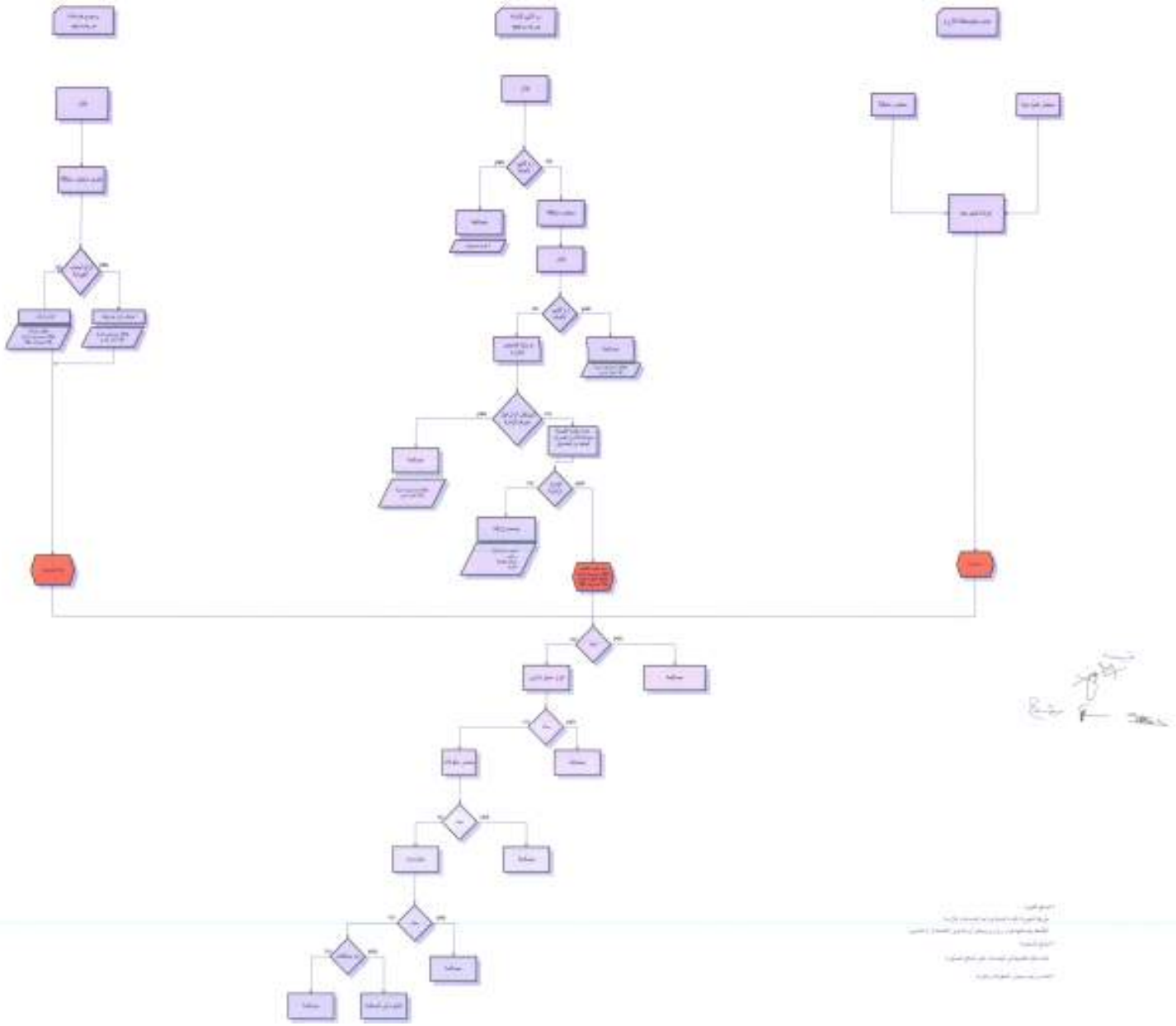

What is next?

- Move to open sources OS and software.
- Digital signatures.
- Email for all directorate.
- Half automated for MWRI services.
- Improve water management tools in distracts.
- Provide distracts with some digital maps.
- Integrate some of the IS.

Challenges

- Financing.
- Human Resources.
- Existing LAN and IS.
- Data exist
  - Accuracy
  - Complete
  - Existing format
  - Details
- User training.
- Dissemination of information.

Thanks

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