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ESTABLISH A STANDARD INFORMATION AND DOCUMENTATION SYSTEM
AT THE INSTITUTE OF STANDARDS AND INDUSTRIAL RESEARCH
OF IRAN

DP/IRA/87/013

THE ISLAMIC REPUBLIC OF IRAN

Terminal report: A standards information and documentation system
at the Institute of Standards and Industrial Research of Iran
Second mission of the IIA*

Prepared for the Government of the Islamic Republic of Iran
by the United Nations Industrial Development Organization,
acting as executing agency for the United Nations Development Programme

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Currency

The IIA and CE operated during the Mission on the Bank exchange rate of approximately US\$ = 1500 Rials.

Acronyms and abbreviations

ASA	American Standards Association
ANSI	American National Standards Institute
Aslib	Association for Information Management, UK
BSI	British Standards Institute
CD-ROM	Compact disc-read only memory
CE	Computer Expert
DIN	Deutsches Institut fur Normung
IAEA	International Atomic Energy Agency
IIA	Industrial Information Adviser
INIS	International Nuclear Information System
INTIB	UNIDO's industrial and technological information bank
ISIRI	Institute of Standards and Industrial Research of Iran
ISONET	International Standards Organization network
IROST	Iranian Research Organization for Science and Technology
LIS	Library and Information Service
MIS	management information system(s)
SDI	selective dissemination of information
UNIDO	United Nations Industrial Development Organization

Abstract

This is the Terminal Report for the Project DP/IRA/87/013 to Establish a Standards Information and Documentation System at the Institute of Standards and Industrial Research of Iran (ISIRI) written following a three week mission to ISIRI by the Industrial Information Adviser (IIA), which coincided, and was coordinated, with a two week mission to ISIRI by the Computer Expert (CE) in November 1992.

The report assesses in detail the achievement of planned activities and outputs and provides concrete set of recommendations aimed at achieving of those outputs which have not yet been fully attained as well as a set of recommendations for future actions which should be taken upon completion of the project.

Summary of recommendations

- 1 The Library and other information services at ISIRI should henceforward adopt and use the title of 'ISIRI Library and Information Services (LIS)'.
- 2 In case Komstar equipment cannot be attached to the mainframe computer at the Ministry of Industry as proposed in the Technical Review held in Vienna in March 1991, its sale should be considered. The resulting funds should be redeployed in local purchase of essential hardware and software for the needs of ISIRI and its regional offices.
- 3 Any remaining study tour and fellowship funds left under the Project should be reserved for training LIS staff and those staff offering computer support to the LIS in the Computer Section.
- 4 The Head of the Computer Section and her staff should take full advantage of the local training offered by the suppliers of Paradox software, SINASOFT, to develop other MIS applications not specifically related to the LIS.
- 5 The Head of the Computer Section, Mrs Fasihi, and Mrs Seifi, Head of the LIS, should both attend a database development training programme in the UK.
- 6 The LIS should purchase, with remaining Project funds, one annual subscription to either NORMIMAGE or the IHS WORLDWIDE STANDARDS databases on CD-ROM.
- 7 The non-standards information provision aspects of the LIS should be improved, targetting the identified needs of the ISIRI researchers and other staff.
- 8 An ISIRI user profile database should be created using Paradox 3.5 and based on the results of a detailed ISIRI user survey.
- 9 A contract with the Iranian Research Organization for Science and Technology (IROST) for on-line services access should be negotiated and signed.
- 10 The use of international on-line services through the IROST link should be carefully monitored for a pilot year.
- 11 The 5 most important ISIRI branches be provided with upgraded standards and non-standards information resources and staff training.
- 12 An E-mail network linking the LIS with the 5 most important ISIRI branches should be set up using IROST.

- 13 The direct access to international on-line information services by the 5 most important ISIRI branches through the IROST link should be investigated.
- 14 The provision of CD-ROM facilities and separate annual subscriptions to PERINORM in the 5 most important ISIRI branches should be considered by ISIRI.
- 15 Regular training sessions in information access and use, conducted by LIS staff, should be mandatory for all ISIRI staff.
- 16 If Project funds allow, a second priority for training is a one-week study tour for Mr Arab to Germany to the Deutsches Institut für Normung (DIN) is recommended.
- 17 An LIS industrial contacts database should be developed and expanded using Paradox 3.5.
- 18 The development of a range of new and enhanced SDI services is recommended.
- 19 Library Assistant Mrs Hossein Zadah should be given training in the use of new word-processing facilities recommended for the LIS office and have responsibility for the production of SDI and promotional material.
- 20 The LIS should adopt a new 'corporate identity' and design and use headed paper to enhance that identity.
- 21 The LIS should have regular features in the internal ISIRI bulletin and the ISIRI magazine.

INTRODUCTION

This is the Terminal Report for the Project DP/IRA/87/013 to Establish a Standards Information and Documentation System at the Institute of Standards and Industrial Research of Iran (ISIRI). This report has been written following a three week mission to ISIRI by the Industrial Information Adviser (IIA), which coincided, and was coordinated, with a two week mission to ISIRI by the Computer Expert (CE) in November 1992. Job descriptions for these two missions are appended as Annexes 1 and 2.

The IIA was asked to follow closely the original objectives and outputs in the Project Document. This report therefore uses these outputs as reference points. It is important to note here, however, that the original outputs for the Project had been amended in the Project Document following the First Mission of the IIA (then Mr J Widdowson). The amended outputs included several assumptions based upon acquisition of equipment and changes to the structure and management of the library and information services recommended by the IIA (see Widdowson's report DP/ID/SER.A/1434). These recommended changes were not, and will not be, implemented. In some cases, therefore, outputs have not been achieved as stated, or are not relevant to existing circumstances. This report makes these cases clear as appropriate.

A number of other factors, some outside the control of the Project, have served to retard the progress of the Project towards meeting the two main objectives (see Section 1 below). If the recommendations made by IIA and CE for remaining Project activity are implemented, the Project objectives will have been attained.

The development of international standards and other standards-related collections is already excellent; the LIS has well-established procedures for obtaining new standards or filling gaps in the collections. No significant improvements are necessary. The addition of up-to-date bibliographical information from PERINORM, INFODISK and other CD-ROM standards databases will increasingly enhance the LIS service capabilities.

The microfiche format for international and national standards does not seem to be appropriate to ISIRI's industrial users' needs and to the needs of ISIRI staff. There is no case for the use of microfiche at ISIRI. It is therefore recommended that the LIS continues to collect and disseminate standards in paper form. The CD-ROM format would supersede microfiche for ISIRI's purposes.

Current non-standards information provision at ISIRI needs improvement. The ISIRI scientists and experts are either undertaking nationally and internationally significant research or they are at the forefront of raising and maintaining standards of design and production in Iranian manufacturing and industry. They need regular access to up-to-date scientific and technical information in the key subject fields of ISIRI's work.

In order to identify precise ISIRI user requirements and to develop the LIS to meet those requirements, a detailed survey of ISIRI user needs is recommended.

IIA, CE and staff had several useful meetings with the Iranian Research Organization for Science and Technology (IROST). IROST offers on-line search services to scientific and technical research institutions in Iran, accessing all the major international database hosts. IROST will undertake on-line information searches on behalf of clients or an institution may access the databases itself, establishing the links through the telecommunications PAD at IROST. IIA recommends that the LIS signs a contract with IROST immediately.

The key to improving response to enquiries lies with the main ISIRI branches and their ability to handle information provision themselves or obtain faster service from ISIRI headquarters. The report makes recommendations on developing this ability.

With the acquisition and development of new resources outlined in the paragraphs above, the LIS needs to adopt a more proactive style in information provision, particularly in the provision of information services to the ISIRI users. This would involve the development and promotion of new services to users.

A list of equipment and software is recommended for immediate and medium-term (in 2-3 years) purchase. These should enable the achievement of ISIRI service developments as recommended in this report and in line with the objectives of the Project.

SECTION 1
ACTIVITIES AND OUTPUTS

The situation at outset

The organizational structure of the library and information services had not been changed according to Mr Widdowson's recommendations (D2/ID/SER.A/1434, Annex 2); this means that the key services of Library and Computer Section remain in the Planning, Programming and Process Control Division under the management of Director, Mr Amiri, while the International Relations Department remains a part of the Public Affairs Division, and therefore not a part of the library and information services (see Widdowson Annex 8.2). It was decided by ISIRI not to change this existing structure to create separate Enquiry, Library, and Information Database Sections, as Mr Widdowson recommended, and the IIA absolutely endorses this decision.

IIA recommends that the Library adopts the fuller title of 'ISIRI Library and Information Services' (henceforth referred to in this report as LIS), which includes the existing library book and journal collections and services, the national and international standards, and standards-related, collections and services, and the computer-based information services supported by the Computer Section.

At the start of the Project, a decision was taken in ISIRI to purchase (not with Project funds) a second-hand IBM 4341 mainframe computer; one of the erroneous assumptions which lay behind this decision, was that full-text databases of international standards were available for purchase in magnetic tape format. This led directly to the 1989 purchase, using Project funds, of a Komstar Micrimage IV unit, a Komstar MTU Tape Unit and other peripherals (Annex 3); equipment designed for the production and processing of photographic images in microfiche format from computer-generated, digital data. In addition, the Project funded the purchase of four microfiche reader/printers designed to read microfiche by simple back-projection and to provide a photocopied paper copy of selected pages as required.

This Komstar and accompanying microfiche-based equipment remains unpacked and in storage in ISIRI. The IBM 4341 is also non-operational. After due consideration IIA does not see any potential for the use of the Komstar equipment in ISIRI. This equipment should be either installed at the Ministry of Industry and attached to its IBM 4341 mainframe computer (as recommended by the Technical Review Meeting held in Vienna in March 1991) or sale of the equipment should be considered and the resulting funds should be used for the local purchase of hardware and software essential for information services of the ISIRI and its regional offices.

The Project had also funded the purchase of 15 modems, intended for the largest ISIRI branches, to accompany basic personal computers which had, apparently, already been supplied by ISIRI, and to enable the setting up of a planned computer network linking ISIRI headquarters and its branches.

The IBM PS/2 and CD-ROM drive, supplied by the Project, are fully operational in the LIS and were already used heavily by LIS staff to search the PERINORM database on CD-ROM. It was immediately apparent that item 2 in CE's job description (see Annex 2) was redundant: all the LIS staff, supported by the Computer Section, were already fully competent at using both PS/2 and PERINORM. The PERINORM subscription for 1992, which the Project had funded by UNIDO Purchase Order in April 1992, had failed to commence. IIA queried this with both the British Standards Institute (BSI) and their distributor by fax during the mission. The November 1992 CD-ROM was received before the end of the Mission and agreement was reached with BSI that the annual subscription would run from November 1992 - October 1993. A second standards database on CD-ROM - INFODISK - had been ordered by UNIDO for the Project in October 1992.

On request of the Ministry of Industry, equipment, software and a password to access the INTIB database on-line, had been provided and installed by UNIDO in the Ministry of Industry in Tehran, though the on-line link with INTIB had originally been recommended and intended for ISIRI. IIA recommends that the LIS should access INTIB through other on-line strategies as described in Section 1 Paragraph F below.

Following recommendations in Mr. Widdowson's report, from the LIS Mrs. M. Seifi, Miss Yari and Miss Keravash travelled to the UK for a 2 month fellowship which included training at BSI and Aslib. Mrs. Fasihi, Head Computer Section, had been unable to take up the recommended fellowship at that time; a fellowship for Mr. Reza Jaberian, from International Relations, was also recommended by Mr. Widdowson. However, since the existing structure of the LIS was not changed to include International Relations, IIA recommends that any remaining Project funds for study tours and/or fellowships are reserved for ISIRI staff responsible for the provision of library and information services and those staff giving computer support to the LIS.

IIA also found, on arrival at ISIRI, that other recommendations in Mr Widdowson's report covering the collection of end-user information via a questionnaire by the Ministry of Industry, and provision by ISIRI of additional library staff had not been implemented.

Activities

The following paragraphs describe the activities and recommendations of both IIA and (in part) CE during their mission. These paragraphs are organized under the stated objectives and outputs in the Project Document.

Objective One

'Establish a computerized information and documentation system for information on standardization and quality control at ISIRI able to provide fast and effective services to industrial entrepreneurs, researchers, universities and government institutions'

has the following outputs, activities and recommendations.

- A. A software package for the PS/2 adjusted to the needs of ISIRI (both for the bibliographic database of standards and for the ISIRI's management information system).

During the first week of the Mission, IIA considered with LIS and Computer Section staff the implications of the development of a bibliographic database of national (Iranian) standards, both in terms of choice of software, the need for additional hardware, the provision of new services to LIS users once such a database was established, and staffing and management considerations. Several strategic decisions were taken in advance of the arrival of CE, such as the need for local purchase of appropriate database software capable of operation in both Farsi and English.

CE and Mrs. Fasihi, Head Computer Section, investigated local availability of suitable database software. Paradox 3.5 was purchased for ISIRI and installed on the IBM PS/2 by CE during the first week of his Mission. CE's report (DP/ID/SER.A/1621 Annex 8) describes the subsequent activity and recommendations in designing and developing the national standards database.

IIA also considered the specific requirements of the LIS for computer-assisted management information systems (MIS). The priority MIS requirement is assistance in streamlining and managing the request/order/acquisition/follow-up processes involved when the LIS obtains copies of international standards and related documents on behalf of ISIRI's clients in industry. The Paradox software offers appropriate applications for a custom-made MIS and CE was able to do some initial design work. His report describes activity and recommendations in detail (see Annex 8).

Other MIS applications were considered to assist the Computer Section, which undertakes support work for all divisions and departments of ISIRI, including improved statistical reporting, financial management applications and personnel records management. IIA and CE were unable to cover these non-LIS requirements in detail; however, the Paradox software has the capability to provide these applications. It is recommended that Mrs Fasihi and her staff take full advantage of the training support offered by the Tehran-based distributor of Paradox, SINASOFT, to develop these other MIS for ISIRI.

- B. One ISIRI computer department manager to be trained abroad on information systems and services for a standards information centre.

- C. One ISIRI information/bibliographic database manager (Information Scientist) trained abroad in ISONET system.

Dr. Tofigh undertook a two-week study-tour to Standards Council of Canada to gain the latest information on information network systems. Messrs. Amiri and Alast visited during another two-week study-tour INTIB in UNIDO, INIS in IAEA and the International Computer Centre in Geneva, Switzerland. The fields of study were aspects related to the computerized data banks on standards and the access to international data banks.

This output had not been fully achieved since Mrs. Fasihi, the manager of the Computer Section, was unable to take up the recommended fellowship in 1991. With the installation of database development software in the LIS, it is recommended that Mrs. Fasihi (with Mrs. Seifi: see C below) should attend a database development training course plus appropriate institutional visits in the UK.

In case of ISONET system it should be noted that the reference to an ISONET bibliographic databases of the most important international standards - including ISO standards - are now available in CD-ROM format, not requiring any overseas training to use successfully. The ISIRI was therefore provided with the PERINORM and INFODISK containing bibliographic database on CD-ROMs.

The design of the new database of Iranian national standards to be developed by the LIS conforms to the bibliographical format used by other national and international bibliographic databases of standards. What is now required, and recommended, is that Mrs Seifi, the LIS manager, should also attend a course (with Mrs Fasihi, the manager of the Computer Section) on database development and database applications for use in information service provision, and undertake relevant institutional visits to investigate database applications. CE's report Annex 3 contains a proposed programme for this recommended training.

Objective Two

'Increase the resources of ISIRI to collect, assimilate and disseminate up-to-date information on 460,000 internationally used industrial standards (ISO, IEC, DIN, JIS, BS, IS) and establish links with international standard information sources, in particular with ISONET.'

Objective Two has the following outputs, related activities and recommendations.

- D. **Established service at ISIRI to collect, assimilate and disseminate up-to-date information on all standards and technical requirements relevant to Iranian industry.**

IIA found that the established development of international standards and other standards-related collections is already excellent; all new and revised international standards are automatically received, except those from the American National Standards Institute (ANSI), which are available on request. The LIS has well-established, manual procedures for obtaining new standards or filling gaps in the collections. No significant improvements are necessary.

IIA also found that the current organization, storage, retrieval and dissemination methods used for the paper copy collection of standards and technical requirements (both national and international) are practical, effective and efficient. The LIS has plenty of storage space for future expansion of collections, and adequate space for readers, researchers and enquirers.

The addition of up-to-date bibliographical information from PERINORM, INFODISK and other CD-ROM standards databases will increasingly enhance the LIS service capabilities.

The development of the Iranian national standards database using Paradox software will give the LIS the capability to provide a range of new reporting, standards promotion and information services to industry. For details of recommended services which can be developed see CE's report and recommendations (Annex 8).

The introduction of MIS using the Paradox software to manage the acquisition/dissemination procedures for international standards and other publications (see A above) will also assist the LIS in providing fast and efficient services to users. CE's report gives detailed recommendations on developing the MIS package.

- E. Established links with major standard information sources for regular updating of national and international standards (paper and/or microfiche forms).

The LIS automatically receives approximately 500 new international standards and related documents per week in paper form: well-established links with all relevant organizations are already in place.

The microfiche format for international and national standards is in view of IIA not entirely appropriate to ISIRI's industrial users' needs and to the needs of ISIRI staff. This output was based on the assumption that a major part of the LIS collection would be either published or acquired on microfiche. There is, however, no case for the use of microfiche at ISIRI. The LIS does not have a storage space problem; the national collection of standards is unlikely ever to grow beyond 10,000 separate standards; none of the ISIRI branches or their industrial customers are adequately equipped with microfiche readers in laboratories, workshops or offices to justify the provision of copies of standards on fiche rather than in paper form. To satisfy user needs, the LIS would no doubt find itself making paper copies, using microfiche reader/printers, of any standards published on microfiche. It is therefore recommended that the LIS continues to collect and disseminate standards in paper form. Improvements in CD-ROM technology are likely to allow the increasing availability of full-text international standards databases in the near future; the CD-ROM format would certainly supersede microfiche for ISIRI's purposes.

- F. An increased Library service (books, standard bulletins, standards, technical periodicals, government publications, etc.).**

There are two main categories of LIS users:

- 1 the scientists, engineers, technicians and quality control specialists who are based at ISIRI headquarters in Karaj (approximately 700) and those who are based in the ISIRI branches elsewhere in Iran (approximately 300);
- 2 personnel in government and private industries, in Ministries, consulting engineers and research students - by far the largest group, not quantified but expanding.

These categories of users and their needs are summarized in Annex 9. The needs of the non-ISIRI users in category two are exclusively for national or international standards or standards-related information. As has been stated above, the collection, storage, retrieval and dissemination of standards information by the LIS is currently effective and efficient.

The LIS services to the 1000 ISIRI staff/experts in Karaj and in ISIRI branches (category 1 above) also include the provision of international standards and standards-related information, but these users have more wide-ranging requirements as well. Current non-standards information provision at ISIRI needs improvement. The ISIRI scientists and experts are either undertaking nationally and internationally significant research or they are at the forefront of raising and maintaining standards of design and production in Iranian manufacturing and industry. They need regular access to up-to-date scientific and technical information in the key subject fields of ISIRI's work. The library is currently able to offer only a collection of books in English and Farsi, the majority of which are over 15 years old, and subscriptions to about 45 foreign journals in key subject fields.

The IIA recommends that the non-standards collections and information services of the LIS are developed and improved in the following ways:

- * public access CD-ROM databases in key subject areas: concentrating on abstracts/indexes to international journals and reports
- * revised and expanded current journal subscriptions
- * revised and expanded reference book collection
- * reduced and heavily weeded book collection
- * expansion of the use of international and national document supply and photocopying services to meet demand from ISIRI users

- * acquisition of improved bibliographic information on published books and journals (eg. Bookfind CD-ROM, wider range of publishers' catalogues, etc) to improve foreign book selection. IIA will ensure that ISIRI is placed on the mailing list of the major scientific and technical publishers based in Europe.

In order to identify precise ISIRI user requirements and to develop the LIS to meet those requirements, it is recommended that a detailed survey of ISIRI user needs is undertaken and that individual user profiles for the 1000 ISIRI users are prepared. A sample user profiling form is appended as Annex 10. It is further recommended that the data on ISIRI users thus gathered should be used to develop an ISIRI user database using Paradox software, enabling detailed analysis of existing and changing user needs, recording and monitoring of patterns of information use over a period of time and other important management information.

The most important sources of up-to-date information in science and technology are generally journals and report literature; access to the major abstracting and indexing services available on-line through international host organizations is, therefore, a crucial component in an effective information service. At present ISIRI is not able to offer such access. During the Mission IIA, CE, Mrs Seifi and Mrs Fasihi had several useful meetings with Mr Mahmoud Fayyazi and his staff at the Iranian Research Organization for Science and Technology (IROST), part of the Ministry of Higher Education. IROST offers on-line search services to scientific and technical research institutions in Iran, accessing all the major international database hosts. IROST will undertake on-line information searches on behalf of clients or an institution may access the databases itself, establishing the links through the telecommunications PAD at IROST. Mr Fayyazi and his assistant Mr Nahvi visited ISIRI to install communications software on the IBM PS/2 and to demonstrate successfully the feasibility of the link.

IIA strongly recommends that the LIS signs a contract (all costs in Rials) with IROST immediately to enable them to provide selected on-line information search services to the ISIRI users. IIA further recommends that analysis and monitoring of these services will be necessary for a full pilot year to identify the cost implications in comparison with the possible alternatives of subscriptions to some databases in CD-ROM format.

- G. An improved enquiry service including microfiche and microfiche service to improve links with industry and increase usage.

This output is based on Mr Widdowson's recommendations and assumptions that the structure of the Library and information service would be changed to separate Enquires from the Library, and that national and some international standards information would be provided to users in microfiche form. Neither of these assumptions is now relevant. The current system of handling both telephone and written enquiries through the Library is perfectly adequate and appropriate to present and foreseeable future levels of demand.

The key to improving response to enquiries lies with the main ISIRI branches and their ability to handle information provision themselves or obtain faster service from ISIRI headquarters. The following points and recommendations, therefore, concentrate on developing this ability.

IIA recommends that the information resources and collections in the 5 most important ISIRI branches (Tehran, Esfahan, Shiraz, Mashad, Yazd) are immediately upgraded. Models for equipment, software and collections in the branches are given in Annex 11.

IIA and CE also recommend (see Annex 8) that ISIRI investigates the establishment of an electronic-mail communications network between ISIRI HQ and at least the 5 main branches as part of the contract with IROST. Using the modems already bought under the Project, and making full use of IROST's expertise, this E-mail network should be perfectly feasible and will effectively provide ISIRI with the planned communications network between the branches and HQ without the need for dedicated telecommunications lines. This offers a reasonable interim solution until the current upgrading of the national telecommunications services is completed and more comprehensive networking options can be considered.

The IROST contract also offers the possibility of direct access by the ISIRI branches (for at least the 5 main branches) to on-line international science and technology databases. IIA and CE recommend that ISIRI investigates the feasibility and costs of this development with IROST and branch managers after completion of the ISIRI user survey which will identify precise user information requirements (see Annex 10).

To enhance further the capabilities of the main ISIRI branches in providing standards related information, IIA recommends that ISIRI considers buying additional annual subscriptions to the PERINORM CD-ROM database service and the provision of CD-ROM drives for the 5 main ISIRI branches.

Unfortunately, BSI does not offer a multi-user subscription rate for PERINORM, though they are prepared to consider offering a discount on all additional subscriptions taken out by ISIRI.

During the mission IIA and CE also considered the possibility of establishing a wide area network (WAN) for CD-ROM access linking the 5 most important branches with the LIS. However, current international technology and expertise in CD-ROM networking are restricted to establishing only local area networks (LANs) within a relatively small area (a university campus or a small town, for instance). The possibility of a nationwide CD-ROM WAN for ISIRI is some years away in the future; IROST are currently considering the technical and financial feasibility of such a WAN and ISIRI is advised to keep in close touch with these developments. Meanwhile, ISIRI may consider it worthwhile providing at least some of its branches with independent CD-ROM facilities and PERINORM subscriptions despite the relative expense of such an option. The decision must realistically depend upon monitoring the actual and potential levels of information enquiries received by the most important branches, and the amount of time it takes the staff of LIS to receive these enquiries from branches, research the information and get a reply back to the branches by telephone, post or fax.

If the main ISIRI branches are to develop information provision capabilities, one member of staff in each branch must be designated as responsible for information services and basic training must be provided by the LIS in information techniques, using CD-ROM databases, on-line search techniques, etc. IIA recommends the establishment of a regular training programme for designated staff from ISIRI branches.

- H. On-the-job training for all professional staff of ISIRI and other appropriate information centres in Iran in industrial information and documentation techniques.

The Manager of the LIS already has inputs into ISIRI training programmes and seminars for its quality control staff and branch managers. IIA recommends that this is expanded into a regular series of training sessions for all ISIRI quality control, scientific and other expert staff: all ISIRI professional staff should attend at least one training session on how to use the new LIS information resources. In particular, training for ISIRI users in using the public-access CD-ROM database facilities will be necessary when these are introduced into the LIS.

IIA also recommends that regular (twice yearly) visits are made by senior LIS staff to all the most important ISIRI branches for training and advisory purposes and for promotional visits to the major industrial users of standards-related information in the area.

- I. Two ISIRI managers with responsibility for Library and Enquiry services trained abroad in standards information services and relevant computer/telecommunications systems.

Mrs Seifi, the Manager of the LIS, and Miss Keravash have completed fellowships in the UK covering standards information services. See IIA's recommendation at B and C above on database development training for Mrs Fasihi, Manager of the Computer Section, and Mrs Seifi. This recommended training should be regarded as the highest priority for any remaining Project funds in the training budgets.

If sufficient funds are available, IIA also recommends, as a second priority, a short (one week) study tour for Mr Arab, in charge of the specifically standards-related information provision, to Deutsches Institut für Normung (DIN) in Germany for familiarization with another European standards development and information service.

SECTION 2

**Future developments for ISIRI Library and Information Services
on completion of the Project.**

A. The development of new services

With the acquisition and development of new resources outlined in the paragraphs above, the LIS needs to adopt a more proactive style in information provision, particularly in the provision of information services to the ISIRI users. This would involve the development of new services to users, based on the enhanced computer and CD-ROM facilities recommended in paragraph D below and the newly developed database of national standards.

IIA recommends that, in addition to the development of an ISIRI user database (see paragraph F in Section 1 above), the LIS uses the Paradox software to develop a industrial contacts database and mailing list of key contacts and users in industry, the Ministries and consultancy companies. This database could be developed initially from existing records, correspondence and enquiries. It should record basic contacts information as well as subject interests and notes on enquiries received. It could be further developed as a promotional mailing list by adding industrial contacts taken from other sources, such as directories of manufacturers, professional associations and trade organizations. The database would build into a powerful management information, forecasting and planning tool, as well as an efficient marketing and promotion databank.

IIA recommends that the LIS considers developing a range of SDI (selective dissemination of information) services to both ISIRI users and targetted industrial users over the short- to medium-term (1 - 3 years). The following suggestions are made for consideration:

Standards-related services: national standards database

- * Reporting services for the ISIRI Technical Committees.
- * Provision of read-only copies of the national standards database - or sections of it - to the ISIRI branches.
- * Preparation of the complete national standards catalogue and subject catalogues.
- * Preparation and dissemination to industrial users of regular subject-based 'bulletins' and lists.
- * On-demand database searches and preparation of lists.

International standards and related information

- * Enhanced new accessions lists, subject-based, using downloaded records from the CD-ROM bibliographic databases of standards, such as PERINORM.
- * Regular 'bulletins' to key industrial users based on a user profile of specific subject needs, prepared using the CD-ROM bibliographic databases and new accessions in the LIS.

For ISIRI users

- * Based on the user profiles, new accessions lists of standards-related and other information - an enhancement of the existing weekly and monthly lists sent out by the LIS.
- * Monthly on-line or CD-ROM database searches for key users, on specific subjects: the provision to users of printouts of relevant abstracts and other data from the major databases via IROST or from CD-ROMs.
- * Monthly 'new and forthcoming books' bulletin compiled using CD-ROM bibliographic database of foreign books in English (BOOKFIND CD): for improved book selection and current awareness.

The development of these new services will require the provision of computer and word processing facilities in the LIS office: IIA recommends that the Library Assistant, Mrs Hossein Zadah, is trained in using English/Persian word processing facilities, and in downloading records from PERINORM etc, and becomes responsible for the production of all LIS bulletins, acquisitions lists and SDI services.

The development of new services, in the short- to medium-term, is bound to have other staffing implications: demand for standards-related information will grow and the development of these SDI services will stimulate demand further. It seems likely that the LIS will require one additional full-time clerical support post and one additional full-time professional (information scienced) post in the medium-term to meet increased demand and to develop new services effectively.

To implement these new services it will be essential that the Library and Information Service and Computing Section staff take full advantage of the training and consultative programmes offered by SINASOFT, the local distributors of the PARADOX software.

B. Promotion of ISIRI Library and Information Services

IIA recommends the establishment of a 'corporate identity' for the ISIRI Library and Information Services, through the design and use of headed paper and other stationery which immediately identifies the information service, to be used for all LIS correspondence and services.

IIA also recommends that the LIS has a regular features section or page in the ISIRI internal staff bulletin and in the ISIRI Journal which is sent to over 1000 external contacts.

In addition, the LIS should be involved in all ISIRI presentations at external exhibitions and conferences. The LIS should also provide information displays and/or demonstrations of using CD-ROM databases, etc., at all ISIRI meetings, conferences and seminars.

The production of a promotional leaflet describing ISIRI Library and Information Services is strongly recommended, to be produced when the acquisition of new, recommended equipment is complete and the contract with IROST has been drawn up. At this stage it should be possible to describe fully the new and planned services of the LIS. This leaflet should be mailed widely to all existing contacts and new contacts using Iranian industrial or other directories (see Paragraph A Section 2 above).

C. Adoption of a 5-year strategic plan for development of the Library and Information Services

Annex 12 contains the suggested timetable for a five-year strategic plan: the adoption of such a plan for the LIS is strongly recommended.

D. Further recommended purchases of hardware, software and other materials.

Bearing in mind Dr Tofigh's expressed willingness to provide funds outside the Project to the ISIRI LIS for essential purchases to develop and improve standards and related information provision, the following items are recommended for immediate and medium-term (in 2-3 years) purchase. These items should enable the achievement of ISIRI service developments as recommended in this report.

Recommended immediate purchase

- 1 1 x PC286 2mb RAM, 1 floppy drive, 100 mb hard disk - for use with word processing software in the Library office.

(The existing Postscript laser printer, currently linked to the PS/2, should be transferred to this machine, to enable the production of high quality print in English and Farsi for the LIS promotional literature and SDI services, etc.)

- 2 New word processing software package capable of operating in English and Farsi.

- 3 1 x PC386 4 mb RAM, 1 floppy drive, 100 mb hard disk - for use with the CD-ROM drive, to be sited to allow public access in the Library.
- 4 2 x NEC Pinwriter printers (or equivalent) - one for the PS/2 database development, one for the CD-ROM facility in the Library.
- 5 1 additional CD-ROM drive for use in the LIS office.
- 6 Communications software to enable the ISIRI branches to set up E-mail communications links via IROST.
- 7 Wordprocessing software - capable of operation in English and Farsi - installed in the 5 most important branches (see Annex 11).
- 8 Basic collections of science and technology reference books for the 5 most important ISIRI branches (see Annex 11).
- 9 Uninterrupted power supplies (UPS) for the new computers.

Recommended medium-term purchase

(These should be subject to review in the light of availability and technology advances over the next 2-3 years)

- 10 CD-ROM drives for the 5 most important ISIRI branches.
- 11 Library automation software package - capable of operating in English and Farsi.
- 12 PC486 4 mb RAM, 1 floppy disk drive, 170 mb hard disk - to operate the Library automation systems.
- 13 Basic collections of science and technology reference books for further 5 - 10 ISIRI branches.
- 14 Communications software to link a further 5 - 10 branches.
- 15 Uninterrupted power supplies for the new computers.

SECTION 3 Conclusions

Achievement of Project objectives

At the time of the IIA's mission the two broad objectives for the Project had not been fully achieved. (Please refer to the Section 1 above). The project objectives can be, however, achieved before the Project is declared complete if the recommendations made by IIA and CE in this report are followed in the short-term.

Information technology applications

The LIS has rightly concentrated attention upon upgrading the provision of standards and standards-related information; this report makes further recommendations on improving non-standards information provision to the ISIRI researchers and other staff. Both of these targets can be achieved largely through information technology applications - the use of CD-ROM databases and the exploitation of on-line access to major science and technology databases, supported by the acquisition of paper copies of journal articles and other documentation from external sources as required.

The existing book collection - mainly English language monographs and textbooks - is so out-of-date that it can be of little use to the ISIRI researchers. There is no merit in ISIRI attempting to build up a new and comprehensive collection of books in the wide-ranging priority fields of ISIRI research. The needs of ISIRI users can best be served by investment in information technology applications and journal subscriptions rather than in general book-buying.

Closer cooperation with other Iranian library and information services

There is much merit in the LIS staff making concerted efforts to build up close, cooperative links with more library and information services in science and technology fields in Iran, in particular to improve the LIS services to ISIRI staff and users through the headquarters and branches and to collaborate on, for instance, CD-ROM access, on-line searching and new book selection in key subject areas. Close links with IROST have been recommended in this report; also useful would be informal links with and regular visits to the CD-ROM service of the main library at Tehran University, and several of the Faculty/departmental libraries in key subjects such as Chemistry and Agriculture.

Local expertise

The Project has provided ISIRI with guidance on LIS development, basic policies, strategies and objectives; to achieve these objectives and to develop services further using information technology applications ISIRI can call upon an impressive range of local expertise. IIA and CE established that in the fields of telecommunications and informatics development, and, more importantly, in the application of computer technology in information service provision, local Iranian expertise and experience is not lacking (for instance, in IROST and several Tehran-based agents for international computer products). Now that ISIRI has a clear view of how it wishes the LIS to develop in the medium- to long-term it is well placed to exploit this local expertise.

ANNEX 1: INDUSTRIAL INFORMATION ADVISER'S JOB DESCRIPTION



UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION

JOB DESCRIPTION

DP/IRA/87/013/11-01/J12101

- Post title:** Industrial Information Adviser
- Duration:** 1 month
- Date required:** As soon as possible
- Duty station:** Teheran, with travel within the country
- Purpose of project:** To strengthen the Institute of Standards and Industrial Research of Iran (ISIRI).
- Duties:** The expert will be attached to the ISIRI and will work in close co-operation with the National Coordinator and other experts assigned to the project. The expert will specifically be expected to:
1. Identify standards sets (BS, DIN, AFNOR, ISO...) to be acquired in microfiche form to complete the ISIRI's collection and identify the sets to be updated regularly
 2. Establish a mechanism for regular contacts with industries in order to cope with their needs for standards and other relevant information.
 3. Organize the information and documentation services. Implement the new organizational structure and procedures for acquiring, processing, retrieving and disseminating the international and national standards.
 4. Specify the requirements enabling the design and development of a computerized data bank of standards and techno-economic information.

.... / ...

 Applications and communications regarding this Job Description should be sent to:

 Project Personnel Recruitment Branch, Department of Industrial Operations
 UNIDO, Vienna International Centre, P.O. Box 300, A-1400, Vienna, Austria

- 5 Organize on-the-job training for technical and professional staff as well as for users of the PPD services in information and documentation services.

The expert will also be expected to prepare a terminal report setting out the findings of his mission, together with his recommendations on future action which might be taken by the Government.

Qualifications: University degree or equivalent in information science or engineering with extensive experience in establishing industrial information services, particularly computerized ones in advance industrial countries.

Language: English.

Background information: The Institute of Standards and Industrial Research (ISIRI) operates as a Department of the Government of the Islamic Republic of Iran within the Ministry of Industries. In 1960, a legal status was given to the original Standards Organization of Iran, which in 1975 was amalgamated with the Industrial Research Establishment to form the present ISIRI.

ISIRI is the controlling authority for checking and verifying all weights and measures in the country and is the sole authority for determining official standards for products (other than medicines) and drawing up codes of practice.

Since its inception, ISIRI has been attempting to keep pace with the expansion of the industrial sector of the country in the areas of preparation of compulsory and voluntary standards, compliance testing, certification, quality control and a whole range of other related activities.

It is worth mentioning that UNIDO has already provided excellent technical assistance to the ISIRI through the project DP/IRA/69/533, 'Metrology Centre of the ISIRI'; DP/IRA/74/050, 'Assistance to the ISIRI in R+D Standardization and Testing', and SI/IRA/85/802, 'Assistance to the Islamic Republic of Iran in Strengthening the Documentation Centre at the ISIRI'.

ANNEX 2: COMPUTER EXPERT'S JOB DESCRIPTION

ANNEXES

Annex 1. Job Description

Post title: Computer Expert

Duration: 0.5 m/m

Date required: August/September 1992

Duty station: Tehran, with travel within the country

Purpose of project: To strengthen the Institute of Standards and Industrial Research of Iran (ISIRI).

Duties: The expert will be attached to the ISIRI and will work in close co-operation with the National Project Director and other experts assigned to the project. The expert will specifically be expected to:

1. Identify the software systems to be acquired to develop the Management Information system of ISIRI based on the PS/2 computer system.
2. Train the personnel in using the PS/2 and PERINORM database.
3. Design, develop and implement the database of Iranian standards held at ISIRI and train personnel in entering data and using it.

The expert will also be expected to prepare a technical report setting out the findings of his mission, together with his recommendations on future action which might be taken by the Government.

Qualifications: University degree or equivalent in information science or engineering with extensive experience in establishing industrial information services, particularly computerized ones.

Language: English.

Project Number
DP/IRA/87/013

UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION
NON-EXPENDABLE PROPERTY CONTROL RECORD

Page No. : 1
Period Ending : DECEMBER-91

Country : IRAN, ISLAMIC REPUBLIC OF

Project Title : ESTABLISH A STANDARD INFORMATION AND DOCUMENTATION SYSTEM AT THE INSTITUTE OF STANDARDS AND INDUSTRIAL RESEARCH OF IRAN

Purchase Order Number	Item No.	Description	Qty. Ord.	US Dollar Equivalent	Received			Cond.	Qty On Hand	Remarks
					Qty.	M	Y			
-O-00292	1	IBM PS/2 MOD. 80-311 4MB, 314MB, 1.44 DISK SN 55AR338.	1	10,533.00	1	Aug	1989	G	1	
-O-00292	2	IBM-MP-KEYBOARD US FOR PS/2.	1	286.00	1	"	"	G	1	
-O-00292	3	IBM PS/2 COLOUR DISPLAY 14 INCH. SN 2219692.	1	697.00	1	"	"	G	1	
-O-00292	4	IBM DLW INT. 5.25" 1.2MB.	1	298.00	1	"	"	G	1	
-O-00292	5	IBM ADAPTER FOR EXT. DISK DRIVE.	1	204.00	1	"	"	G	1	
-O-00292	6	IBM 80 MB STREAMER FOR PS/2.	1	833.00	1	"	"	G	1	
-O-00292	7	STREAMER PROGRAM FOR IBM 80 MB STREAMER.	1	109.00	1	"	"	G	1	
-O-00292	8	IBM 3278/79 ADAPTER FOR PS/2 MOD. 80-80.	1	597.00	1	"	"	G	1	
-O-00292	9	IBM PC 3270 EMULAT. ENG..	1	553.00	1	"	"	G	1	
-O-00292	10	IBM MOUSE F.PS/2.	1	86.00	1	"	"	G	1	
-O-00292	11	IBM TECHN.REF.HW INTERF..	1	139.00	1	"	"	G	1	
-O-00292	12	HITACHI CD-ROM PLAYER CDR 1503S WITH CONTROL SN K9LO58958.	1	1,384.00	1	"	"	G	1	
-O-00292	13	IBM PAGE PRINTER 4216-20 SN 44526.	1	2,233.00	1	"	"	G	1	
-O-00292	14	IBM PHOTOCOND. F. 4216.	2	481.00	2	"	"	G	1	
-O-00292	15	IBM CLEANING UNIT F.4216.	1	240.00	1	"	"	G	1	
-O-00292	16	POSTSCRIPT ADAPTER/A FOR PS/2.	1	1,170.00	1	"	"	G	1	

Country : IRAN, ISLAMIC REPUBLIC OF

Purchase Order Number	Item No.	Description	Qty. Ord.	US Dollar Equivalent	Received			Cond.	Qty On Hand	Remarks
					Qty.	M	Y			
15-0-00292	17	POSTSCRIPT ADAPTER PRG. 1.3.1 ENGLISH 3.5".	1	1,010.00	1	Aug	1989	G	1	
15-0-00292	18	CANON MP50 MICROFICHE READER/PRINTER INCL.X48 SN 41104928.	1	2,751.00						
15-0-00292	19	CANON X24 OPTIC FOR MP 50.	1	365.00						
15-0-00292	20	ARTS & L. EDITOR 3.5".	1	1,268.00	1	"	"	G	1	
15-0-00292	21	PERINORM ALL STANDARDS.	1	2,174.00	1	"	"	G	1	
15-9-00757	1	KODAK KOMSTAR MICRIMAGE IV #128748.	1	122,800.00						
15-9-00757	2	SYSTEM MANAGER # 1734060.	1	7,770.00						
15-9-00757	3	SYSTEM MANAGER WORK STATION, #1295245.	1	465.00						
15-9-00757	4	KOMSTAR ON LINE INTERFACE, # 1980622.	1	8,180.00						
15-9-00757	5	KOMSTAR OFF LINE INTERFACE, # 1109461.	1	7,410.00						
15-9-00757	6	ON/OFF LINE SWITCH ASSY, # 1121755.	1	3,120.00						
15-9-00757	7	KOMSTAR 48X LENS, #1042860.	1	1,800.00						
15-9-00757	8	8X7 CHARACTER SET, #1119882.	1	1,810.00						
15-9-00757	9	STARMATE 500 READER/PRINTER, # 8414591.	3	7,077.00						
15-9-00757	10	STARMATE 500 LENS ASSY WITH AUTO IMAGE ROTATION, #1370683.	3	1,200.00						
15-9-00757	11	KOMSTAR MTU TAPE UNIT WITH SIGNAL CABLE.	1	17,000.00						

Project Number : DP/IRA/87/013

Page No. : 3

Country : IRAN, ISLAMIC REPUBLIC OF

Purchase Order Number	Item No.	Description	Qty. Ord.	US Dollar Equivalent	Received			Cond.	Qty On Hand	Remarks
					Qty.	M	Y			
15-9-01717	1	SMARTLINK 2400A MODEM WITH CABEL 330/1200/2400 BPS, FULLDUPLEX, AUTOMATIC DIALING CCIT RECOMMANDATION SERIES V S NOS. 1 9-002234 -9002248.	15	7,714.00	15			G	2	

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ANNEX 4: UNIDO PROJECT DP/IRA/87/013 LIST OF REPORTS AND OTHER PROJECT DOCUMENTS REFERRED TO IN IIA'S TERMINAL REPORT

- 1 Technical report: Computerized information services at the Institute of Standards and Industrial Research of Iran based on the work of Josef Rimanek, computer expert (DP/ID/SER.A/1282) December 1989.
- 2 Technical report: First mission of the IIA; The development of a Standards Information Service to improve the quality of Iranian industry based on the work of John S Widdowson, Industrial Information Adviser (DP/ID/SER.A/1434) January 1991.
- 3 Project Document DP/IRA/87/013/A/01/37 [To] Establish a Standard Information and Documentation System at the Insitute of Standards and Industrial Research of Iran. July 1988 (amended in 1990)
- 4 [Report of the Computer Network Specialist (CNS)] Stephen Kanayan. October 1992.
- 5 Technical report: Computerized information system for Iranian Standards at the Institute of Standards and Industrial Research of Iran based on the work of David Haynes, Computer Expert. December 1992.

ANNEX 5: UNIDO PROJECT DP/IRA/87/013 LIST OF INTERNATIONAL CONSULTANTS ON THE PROJECT

Josef Rimanek, The Technical University of Ostrava, Czechoslovakia. Computer Expert 1989 - 1990.

John Widdowson, information consultant, UK. Industrial Information Adviser 1990 - 1991.

Stephen Kanayan, Yerevan, Armenia. Computer Network Specialist 1992.

Julie Carpenter, Carpenter Davies Associates, information management consultant, UK. Industrial Information Adviser 1992.

David Haynes, The Information Partnership, information management consultant, UK. Computer Expert 1992.

**ANNEX 6: UNIDO PROJECT DP/IRA/87/013 LIST OF SENIOR NATIONAL
COUNTERPARTS IN IRAN**

Dr A Tofiqh, Deputy Minister, Ministry of Industry. National
Project Coordinator.

Mr Hussein Yegane Amiri, Director PPPD, ISIRI.

Mrs Mahvash Seifi, Manager, Library and Information Services,
ISIRI.

Mrs Maryam Fasihi, Manager, Computer Section, ISIRI.

ANNEX 7: ACTUAL WORK PROGRAMME FOR IIA MISSION 8 NOVEMBER - 29 NOVEMBER 1992

- Sunday 8 Nov Introduction to ISIRI Library and Information Service and staff.
To UNDP Office, Tehran.
Discussion with Mrs Seifi.
- Monday 9 Nov At ISIRI. Meeting with Mr Amiri.
Consideration of local availability of database software and issues arising - fax to David Haynes in UK.
Familiarization with LIS collections.
- Tuesday 10 Nov At ISIRI. Familiarization with LIS collections. Discussion with Mrs Seifi on collection building and current user needs and services.
- Wednesday 11 Nov At ISIRI. Visits to ISIRI laboratories: Biology, Medical Engineering and Metrology.
Collection of statistics on LIS collections and use.
- Thursday 12 Nov At ISIRI. Discussion with Mrs Seifi and Mr Amiri on user services, the use and production of microfiche, management procedures and staff responsibilities. Inspection of Komstar and other Project equipment in store at ISIRI.
- Friday 13 Nov Free
- Saturday 14 Nov At ISIRI. Discussion with Mrs Seifi, Mr Amiri and Mrs Fasihi on computer facilities and applications, the roles of the ISIRI branches, cooperation with other information services in Iran, the purpose of the Komstar equipment, and MIS applications.
- Sunday 15 Nov Briefing David Haynes at ISIRI.
Visit to UNDP Office, Tehran.
- Monday 16 Nov To Tehran. Visit to the Iranian Research Organization for Science and Technology (IROST) to meet Mr Mahmoud Fayyazi and Mr Reza Nahvi.

Visit to SINASOFT.

Visit to ISIRI Office in Tehran. Meeting with Mr Alast, Telecommunications Adviser.

Tuesday 17 Nov

At ISIRI. Detailed briefing for David Haynes with Mrs Seifi and Mrs Fasihi. Discussion on development of national standards database and other database software applications.

Wednesday 18 Nov

To Tehran. Visit UNDP Office to arrange acquisition and payment for database software package.

Meeting with Dr A Tofigh, Deputy Minister, Ministry of Industry and National Project Coordinator.

Visit to Ministry of Industry Library and INTIB Focal Point with Miss Zarah Yari from Ministry of Industry.

Lunch with Dr Tofigh, Miss Yari and Mr Amiri.

Thursday 19 Nov

At ISIRI. Discussion with Mrs Seifi on the work of the ISIRI branches.

Design of sample user profile form.

Friday 20 Nov

Free

Saturday 21 Nov

Meeting at ISIRI with Mr Mahmoud Fayyazi and Mr Reza Nahvi for demonstration of IROST link to DIALOG international on-line database host organization in USA. Discussions with Mr Fayyazi and MR Nahvi on potential IROST services to ISIRI.

Demonstration of Paradox 3.5 software.

Sunday 22 Nov

At ISIRI. Consideration of possible CD-ROM database products appropriate to LIS needs.

Discussions with Mrs Seifi and Mrs Fasihi.

Monday 23 Nov

To Tehran. Visit to Tehran University Library.

Visit to UNDP Office.

Visit to IROST for discussions on preparing project proposals with Mr Fayyazi, Mr Nahvi and staff.

Tuesday 24 Nov At ISIRI. Consideration of new information services, SDI services, database applications and staffing implications.

Wednesday 25 Nov At ISIRI. Consideration of the information collection requirements of the ISIRI branches.

Discussion on marketing and promotion strategies.

Preparation of draft outline recommendations for comments from Mr Amiri and his staff.

Thursday 26 Nov At ISIRI. Demonstration by David Haynes of Iranian national standards database design. Discussion with Mrs Seifi and Mrs Fasihi.

Review of current information technology facilities and preparation of recommended list of equipment and software purchases.

Friday 27 Nov Free

Saturday 28 Nov Review of draft outline recommendations with Mr Amiri, Mrs Seifi and Mrs Fasihi.

Sunday 29 Nov Depart Iran.

ANNEX 8: RECOMMENDATIONS IN DAVID HAYNES' (COMPUTER EXPERT) REPORT**III. RECOMMENDATIONS****Development of Management Information system**

We recommend that the main application on the Management Information System, the National Standards Database, should be populated with data from the latest catalogue. This should be done as a priority. ISIRI needs to consider ways of transferring word processed file of the Standards catalogue to Paradox. In the first instance ISIRI should talk to the providers of the word processing software as well as the suppliers of Paradox, to see whether a simple solution is available. The alternative would be to re-key all the data in the catalogue onto the database.

Once the database has been established we recommend that production of the annual catalogue should be given priority. The initial set up of the Report structures in National Standards Database should provide a basis for this. Other products such as subject sections should also be available from the database.

We strongly recommend that the next application for development should be the Acquisitions system. A preliminary data structure can be found in Annex 10 and can be used as the basis of the final database.

We recommend that the production of the current awareness bulletin (which lists new acquisitions to the library) should be integrated with the Acquisitions system. However while the Acquisitions system is being developed, the bulletin should be produced in the library using a word processor.

Paradox should be used for developing a mailing list of users of the services of ISIRI, including recipients of the catalogues and information bulletins.

Continue development of Management Information System using Paradox. Investigate Sinasoft as source of consultancy expertise.

Training

There is an immediate need for basic training on how to use Paradox. We recommend that both the Librarian and the Computer Manager should both attend the training provided by Sinasoft and included in the purchase price of the software.

Once online access via IROST has been established, we recommend that the Librarian and one of her staff participate in basic courses on online searching.

We recommend that the Librarian and the Computer Manager are sent on a fellowship to the United Kingdom, to attend a training course on database design and to visit organisations which have developed similar applications. The proposed programme for the training course is outlined in Annex 3.

We recommend that the Standards Officer, Mr Arab is sent on a study tour of DIN in Germany. This will give him an opportunity to see how standards information is organised in Germany and will broaden the experience of staff at ISIRI, whose main contact until now has been with BSI in the United Kingdom.

Development of access to external services

We recommend that ISIRI establishes online access to the major international online services via IROST. IROST is based in Tehran and has the expertise to train and support users in Iran. Currently ISIRI does not have access to online services and therefore is not able to access the most up-to-date sources.

Equipment and software

We recommend that ISIRI purchase two copies of a word processing package capable of dealing with Farsi and Latin scripts. An example of such a product is Multi-Lingual Scholar which retails at about \$700. One copy would be for use by the Computer Department and the other would be used in the Library to produce bulletins and catalogues, as well as correspondence.

The Library should acquire two additional microcomputers, one for word processing and one for running the database. We recommend that the laser printer is transferred to the word processing microcomputer, and that two dot matrix printers are purchased for the existing PC (used for online searching and for the CD-ROM databases) and one for the PC running the Paradox Information System. A list of equipment appears in Annex 4.***

We recommend that the Komstar equipment, the microfiche reader-printers and the IBM mainframe are disposed of. It will be necessary first to establish ownership of this equipment and to ensure that any cash raised is used by ISIRI to develop its information services.

Branch support

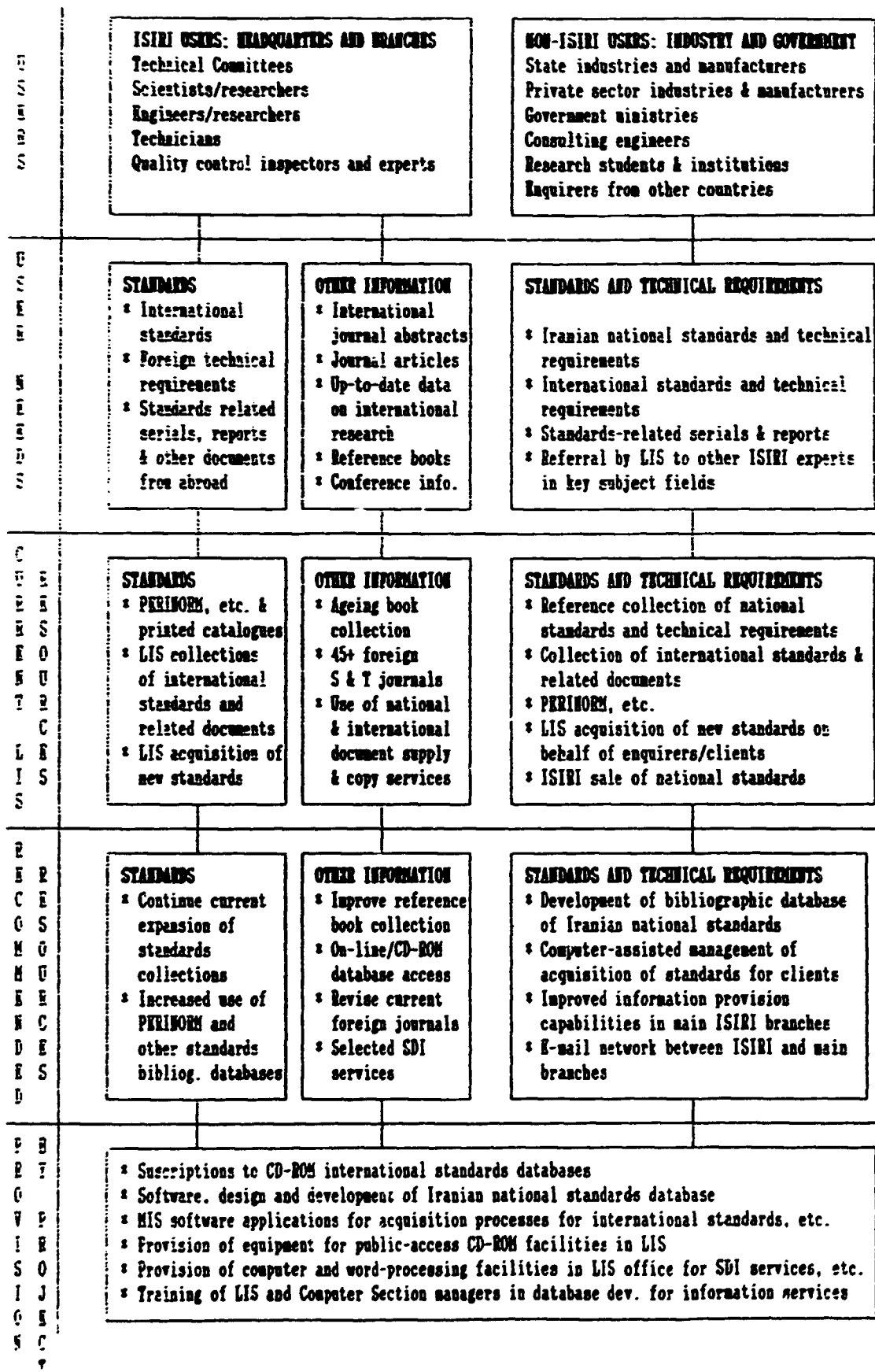
We recommend that the level of service provided by the branches is upgraded by transferring skills and providing support from Karaj. To begin with the effort should be concentrated on the 5 or 6 largest branches, especially those with designated information officers.

We recommend that a branch network is established based on the E-mail service provided by IROST. IROST should be contracted to install modems (already purchased) and software in main branches. They should also provide training. For the time being all online searches should be done through the main ISIRI research centre at Karaj, although eventually the branches should acquire the skills to conduct their own searches.

Each of the major branches should have a basic package of services and equipment provided, immediately. The package should comprise the following:

- IBM PC
- Printer
- Modem
- Communications Software
- Word Processor
- CD-ROM drive
- Perinorm subscription
- Database software
- Read-only version of Database of Iranian Standards
- IROST e-mail service

ANNEX 9: USER GROUPS AND PATTERNS OF USE OF ISIRI LIS



ANNEX 10: ISIRI LIBRARY AND INFORMATION SERVICE: ISIRI USER PROFILE

NAME:	
LOCATION: (ie. ISIRI laboratory or office in Karaj or ISIRI branch)	
PRECISE AREA OF SPECIALIZATION/EXPERTISE IN ISIRI: (please tick one or more of the following, as appropriate)	
Metrology <input type="checkbox"/>	Mechanical Engineering <input type="checkbox"/>
Electrotechnology <input type="checkbox"/>	Packaging <input type="checkbox"/>
Minerals & mining <input type="checkbox"/>	Building/construction <input type="checkbox"/>
Animal products <input type="checkbox"/>	Food science & technology <input type="checkbox"/>
Agricultural products <input type="checkbox"/>	Industrial microbiology <input type="checkbox"/>
Biotechnology <input type="checkbox"/>	Biological research <input type="checkbox"/>
Chemicals <input type="checkbox"/>	Industrial chemistry <input type="checkbox"/>
Textiles <input type="checkbox"/>	Assaying/hallmarking <input type="checkbox"/>
Medical engineering <input type="checkbox"/>	Others: (please specify below) <input type="checkbox"/>
OTHER SUBJECT AREAS OF INTEREST OR RELEVANCE TO YOUR WORK? (Please list)	
<p>ISIRI Library and Information Service is planning to expand the collection of information materials available to ISIRI and other users; it would be helpful if you could study the following list of KINDS OF INFORMATION SOURCES IN SCIENCE AND TECHNOLOGY and indicate how useful each source would be in your work; please do this by numbering the sources in priority order 1 - 11 in the boxes.</p>	
A. Specialist handbooks (eg. 'Chemical Engineers Handbook')	<input type="checkbox"/>
B. Specialist dictionaries & encyclopedias	<input type="checkbox"/>
C. Monographs: normally evaluation of science & technology developments, not new research or information.	<input type="checkbox"/>
D. Specialist reviews of developments (eg. 'Advances in paediatrics')	<input type="checkbox"/>
E. Conference proceedings	<input type="checkbox"/>

ANNEX 10 (PAGE 2)

F. Standards and technical requirements	<input type="checkbox"/>
G. International journal abstracts and indexes: providing references only or references and brief synopses of journal articles in specialist fields.	<input type="checkbox"/>
H. International source data: on products, materials, chemicals, legislation, etc.	<input type="checkbox"/>
I. International directories of people and organizations: involved in current research, professional contacts, etc.	<input type="checkbox"/>
J. Calendars or directories of forthcoming events: such as international conferences, training courses, etc.	<input type="checkbox"/>
<p>Most of the journal abstracts and indexes and other sources of information are available on computer databases: ISIRI Library and Information Service will soon be able to offer its users facilities to search computer databases either on-line or on CD-ROM. Below is a list of 14 of the most widely used international databases in science & technology which may be appropriate to your information needs. To help in planning the new services, please indicate the databases on this list which you would wish to search regularly for your work at ISIRI.</p> <ol style="list-style-type: none"> 1. Biological Abstracts 2. CAB Abstracts (agriculture) 3. Chemical Abstracts 4. Packaging Abstracts (PIRA) 5. Electrical & Electronic Abstracts (INSPEC) 6. Excerpta Medica (medicine & pharmacology abstracts) 7. Index Medicus (National Library of Medicine database) 8. ISMEC Mechanical Engineering Abstracts 9. Metals Abstracts 10. Physics Abstracts (INSPEC) 11. Food Science & Technology Abstracts (FSTA) 12. TOXLINE (toxicology data) 13. International Civil Engineering Abstracts (CITIS) 14. Engineering Materials Property Database (CenBASE) 	
<p>Can you suggest any other specialist databases which you know would be useful in your work? If so, please list:</p>	
<p>Any other comments or suggestions about your information needs?</p>	
<p>THANK YOU VERY MUCH FOR YOUR ASSISTANCE IN COMPLETING THIS PROFILE</p>	

ANNEX 11: MODELS FOR THE DEVELOPMENT OF INFORMATION SERVICE FACILITIES IN THE ISIRI BRANCHES

FACILITY TO BE PROVIDED	MODEL A	COST US\$ (if known)	MODEL B	COST US\$ (if known)
IBM (or compatible) PC + operating software (possibly already provided)	X	\$1000	X	\$1000
Printer (dot matrix)	X	\$1000	X	\$1000
Modem (already in stock)	X	-		
Communications software	X	\$ 500		
CD-ROM drive *	X	\$2000		
Subscription to PERINORM *	X	\$2500		
Wordprocessing software in Farsi and English	X	\$ 750		
E-mail link through IROST	X	not known		
Subscriptions to basic foreign and local science & technology journals	X	\$1000 recurrent	X	\$1000 recurrent
Basic collection of foreign & Farsi reference books in science & tech. (50 vols.)	X	\$3500	X	\$3500
Read-only copies of ISIRI Iranian standards database (updated every 3 months)	X	not known	X	not known

Model A: immediate implementation in the 5 most important ISIRI branches

Model B: implementation in the medium-term (2-3 years) in the next 10 most active ISIRI branches.

* subject to ISIRI consideration and monitoring of activity

ANNEX 12: OUTLINE 5-YEAR STRATEGIC PLAN

Year	EQUIPMENT AND SOFTWARE	TECHNICAL SERVICES	COLLECTION DEVELOPMENT	USER SERVICES
O N E	<ul style="list-style-type: none"> * Sale of KONSTAR & microfiche equipment * Purchase of recommended computer & CD-ROM hardware and software 	<ul style="list-style-type: none"> * Acquisition of new bibliographic BOOKFIND CD and/or new publishers catalogues * Begin compilation and development of Iranian standards database 	<ul style="list-style-type: none"> * Subscriptions to new standards databases on CD-ROM * Selection and acquisition of new reference and other books * Weed existing book collection & discard 75% 	<ul style="list-style-type: none"> * Begin new standards-related SDI services * Design and implement ISIRI user survey
T W O	<ul style="list-style-type: none"> * Implement Model A acquisitions for ISIRI branches 	<ul style="list-style-type: none"> * Set up and trial new on-line services links through IROST * Investigate on-line access for Model A ISIRI branches * Design & develop ISIRI user database * Design & develop MIS for LIS 	<ul style="list-style-type: none"> * Implement Model A book & journal acquisitions for ISIRI branches * Subscription to new non-standards CD-ROM information databases 	<ul style="list-style-type: none"> * Analysis of ISIRI user survey returns * Develop new, non-standards SDI services for ISIRI users
T H R E E		<ul style="list-style-type: none"> * Complete retrospective development of Iranian standards database * Design and produce LIS promotional leaflet * Mail promotional leaflet 	<ul style="list-style-type: none"> * Send out first issue of Iranian standards database on disk to ISIRI branches * Further selection & acquisition of new books based on user survey returns 	<ul style="list-style-type: none"> * Establish regular ISIRI user training schedule * Begin planning industrial user contacts database
F O U R	<ul style="list-style-type: none"> * Acquisition of library automation software for LIS * Acquisition of PC etc for library automation 	<ul style="list-style-type: none"> * Begin development of industrial contacts database * Additional clerical support post (1) 	<ul style="list-style-type: none"> * Review book and journal use in preparation for library automation 	<ul style="list-style-type: none"> * Additional professional support (1 post)
5	<ul style="list-style-type: none"> * Review communications & CD-ROM networking possibilities: PDN in place? 	<ul style="list-style-type: none"> * Begin development of automated Library systems 	<ul style="list-style-type: none"> * Review CD-ROM subscriptions 	<ul style="list-style-type: none"> * Analyse responses to promotion activities