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ASSEMBLIES OF THE MEMBER STATES OF WIPO

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AUDIT OF INFORMATION TECHNOLOGIES

prepared by the Secretariat

1. During the course of regular external audit activity of the WIPO financial accounts, an information technology audit of the WIPO automated accounting systems (the AIMS System) and all its interfaces with the organizations associated business application systems (for example PCT, Madrid and Hague *inter alia*) was undertaken during 2006 with the Auditors Report being made available in 2007.
2. The report prepared by the Auditors is reproduced in Annex I of this document.
3. The International Bureau has analyzed all the recommendations included in the report and welcomes the opportunity to address each of them. The results of the International Bureau's analysis of each recommendation are included in Annex II of this document.

[Annexes follow]

ANNEX I

INFORMATION TECHNOLOGY (IT) AUDIT
OF THE SWISS FEDERAL AUDIT OFFICE
(Financial year 2006)

REPORT OF THE AUDITOR
TO THE ASSEMBLIES OF THE MEMBERS STATES OF WIPO

By Mr. K. Grüter,
Director of the Swiss Federal Audit Office of the Swiss Confederation

GENERAL REMARKS

Mandate:

1. At the thirty-ninth series of meetings, held in Geneva from September 22 to October 1, 2003, the General Assembly of the World Intellectual Property Organization (WIPO) and the Assemblies of the Unions of Paris, Berne, Madrid, the Hague, Nice, Lisbon, Locarno, the International Patent Classification (IPC), the Patent Cooperation Treaty (PCT) and Vienna, renewed the Swiss Government's mandate up to 2007 inclusive, as Auditor of the accounts of WIPO and the Unions administered by WIPO, and also the accounts for the technical assistance projects carried out by the Organization (paragraph 196 of document A/39/15).
2. The Government of the Swiss Confederation has entrusted me, as Director of the Federal Audit Office, with the mandate of auditing the accounts of WIPO and the aforementioned Unions. I have instructed two qualified colleagues from the Federal Audit Office to conduct an IT audit, at the headquarters of the International Bureau (IB) in Geneva, during the period.
3. My mandate is stipulated in Article 6.2 of the WIPO Financial Regulations and is defined by the Terms of Reference Governing Audit, attached to those Regulations.

Auditing Standards and Subject of Audits:

4. The audits have been carried out according to the international IT audit standards "Control Objectives for Information and Related Technology (CobiT)", developed by the Information Systems Audit and Control Association (ISACA – www.isaca.org). In addition, the ISACA guide, "Security, Audit and Control Features – PeopleSoft, 2nd Edition 2006" has been used as a reference tool during the audit.
5. According to Swiss Audit Standard (NAS) No. 401, the auditor shall possess sufficient knowledge of IT to plan, manage, supervise and review the work done. The use of IT in an organization influences above all "the assessment of the accounting and internal audit systems, the situation with regard to risks, and the planning and performance of the audit procedures" of the auditor. Thus, this audit work is also of use to financial auditors.

6. The checks made related to the Administration Integrated Management System (AIMS) IT accounting system and its environment. This is an integrated software package, known as Enterprise Resource Planning (ERP) – produced by the American supplier PeopleSoft/Oracle¹.

7. My colleagues adopted a risk-oriented audit approach according to the standards referred to above and to the standards of the National Company of Auditors (CNCC – www.cncc.fr). As this is the first audit since the introduction of the new accounting system in 2004, they focused essentially on the first phase which includes becoming familiar with the Organization's IT. This work allowed a mapping system for AIMS and the surrounding applications to be set up (cf. Annex).

8. The aim of this audit was not to conduct a full audit in terms of applications, technology and information security. My colleagues did, however, identify a number of risks linked to the use of ERP (phase 2) and decided on certain key checks (phase 3). They examined the AIMS accounting system on several occasions.

9. The information gathered and the analyses conducted led me to make a number of recommendations in order to continue consolidating the situation of IT and to make productivity gains in the medium and long term. I wish to emphasize that all the recommendations do not have the same importance. This is because of the risk factor, on the one hand, and the urgent need for implementation on the other. All the recommendations, including the timeframe, were discussed with the representatives of WIPO during two meetings held at the end of this audit.

10. They also took into consideration the two strategic goals of the Program and Budget for 2006-2007, as follows:

- N°IV: Delivery of quality services in global IP protection systems.
- N°V: Greater efficiency of management and administrative support processes within WIPO.

Information and Documents:

11. I wish to express my satisfaction at the willingness with which all the WIPO staff who were requested to do so provided information and documents of use in the performance of my mandate. Weekly meetings with key partners were organized regularly for the purposes of information, coordination and evaluation of the examinations conducted.

12. My colleagues received a considerable amount of documentation and held numerous interviews within the Organization. They had the opportunity to participate in live presentations of certain IT procedures and systems.

13. The issues of minor importance which were clarified and discussed with representatives during the work are not included in this report.

¹ In 2005, Oracle took over the firm PeopleSoft.

MAIN BUSINESS PROCESSES AND APPLICATIONS

Total Income:

14. During the 2004-2005 Biennium, WIPO generated total income of 523 million francs, made up as follows²:

Income	Millions of francs.	%
Member States' contributions	34	7
PCT Union	401	76
Trademarks and industrial designs	66	13
Miscellaneous income (arbitration, interest, publications)	22	4
Total	523	100

With 76 per cent of the total, the table shows that the PCT Union is WIPO's main source of income. For this reason, my colleagues gathered information and described the main components of this business process and the underlying IT system. Trademarks and industrial designs provide 13 per cent of the Organization's resources.

Patent Cooperation Treaty (PCT) – CASPRO and CASPIA Systems:

15. The patent application filing process governed by the PCT is managed mainly by the CASPRO and CASPIA business applications. The basic documents for a patent include in particular the following information: the request, description, claims, abstract, drawings and calculation of fees.

16. WIPO processes about 130,000 patent applications per year, i.e. an average of around 600 files per day, generating average income of 1,500 francs per file. In 2006, the number of patent applications increased by about six per cent, following exceptional growth of 10 per cent in 2005. The processing of patent filings comprises the following business processes:

- Entry of incoming files submitted directly by applicants or by national patent offices;
- Processing of files with payment of fees due to WIPO;
- Publication with or without a written opinion from one of the 11 certified searching offices.

The Office of the PCT consists of about 430 people, 250 in processing teams, around 100 translators and the rest assigned to the Legal Division.

17. PCT files are processed using the CASPRO and CASPIA applications in conjunction with E-file containing the electronic file or paper file scanned in PDF format and converted into text by OCR so that it is available to the translators. PCT applications contain all the

² Source: Financial Management Report 2004-2005.

bibliographical data in the file and the data relating to the applicant and the national office concerned. WIPO is responsible for delivering the publication platform: it is up to the countries concerned as to whether or not a patent is granted. Two thirds of the files arrive in paper form and one third in electronic form, mainly from Asian countries. The online filing of applications gives rise to a reduction in fees.

18. The files received directly from applicants are received and invoiced by CASPRO and then forwarded to CASPIA. The data in the files coming from national offices are inputted into CASPIA. This is done manually if the file is delivered on paper and by means of an electronic interface if the applications are delivered in electronic form. Certain countries, which deliver data only in electronic form, have data entered directly at source by the applicants. The electronic data entered manually by applicant offices have a greater margin of error.

19. After scanning, the 11 processing teams have more work to do to compare and correct, where necessary, the CASPIA data with the electronic file on two parallel screens. The people in charge of the processing teams verify whether the CASPIA bibliographical data correspond to the text of the registered paper file on screen and correct the data if necessary.

20. Finally, the applicant receives a confirmation of receipt and the CASPIA software calculates the fees due for publication. This amount is forwarded to AIMS for accounting reconciliation, which in turn retransmits the payment as soon as it is received. Owing to the publication deadline which must necessarily be respected, it can happen that publication occurs before the payment by the applicant or the national office has been made. Payments can be made by bank account, check or credit card. If the WIPO fee has not yet been paid, a request for payment is sent to the national office responsible for collection. The amounts paid are reconciled in the AIMS Income accounts (Balancing of Fees).

21. A copy of the international patent application is sent to one or more competent authorities responsible for international searching. These authorities produce a search report with an initial opinion which can indicate whether it is worth the applicant filing a patent application with national offices. About 100 in-house translators and also specialized external translators with technical and scientific knowledge translate these reports into French and English for publication. A first sector, containing around 100 people, translates the requests, titles and abstracts into French and English. A second sector translates the search reports and preliminary examination reports (written opinions) into English only. These translations must be complete before actual publication.

22. A patent application must be published at the latest 18 months after the date of first claim of the application, even if the search report has not yet been published. If the search report comes later, it must be published again, as a “republication”. CASPIA administers the dates and automatically releases the list of patent requests for publication. For the actual publication, the information from CASPIA and the E-file are sent to the SPIDI photocomposition, converting the data into Tagged Image File Format (TIFF) and PDF files. About 2,500 patent applications are subsequently published every Thursday on the WIPO Internet site (www.wipo.int/patentscope/en/) or delivered directly to national offices and to subscribers on DVD/CDROM, or online by Secure File Transfer Protocol (SFTP). Paper publication stopped in July 2005.

23. The CASPRO and CASPIA business applications date back to the 1970s and include out-of-date user interfaces. According to the information received, these two applications are being reprogrammed. I support this step which will also include the renewal of the user interfaces. The aim of enhancing the user-friendliness of the applications should not have a negative effect on the system's reliability.

24. The electronic delivery of patent applications by national offices represents a gain in productivity for WIPO and streamlines the processing of applications.

Recommendation N°1:

“I encourage WIPO to continue promoting the use of modern technologies by the national offices of Member States.”

Trademarks and Industrial Designs – MAPS/DMAPS Systems:

25. The sector of trademarks, industrial designs and geographical indications consists of 148 people and administers the international registrations of marks, industrial designs and appellations of origin. These are governed by the Madrid, Hague and Lisbon Agreements respectively.

26. WIPO processes approximately 40,000 applications per year, i.e. an average of about 200 files per day concerning new applications or renewals. Applications increase in number by about eight per cent per year. This growth is due in part to the reduction of the renewal period from 20 to 10 years, decided in 1996. Rights holders receive advance notice of renewal. Applications are processed in a manner similar to PCT files. The process is managed by the MAPS (trademarks) and DMAPS (industrial designs) business applications.

27. Applications are sent either directly by applicants with payment in advance of the WIPO fees and fees by country, or through the national offices. Paper files are scanned in a manner similar to PCT files. Industrial designs are often adjusted manually after scanning. Some offices, such as the European Union, Republic of Korea, Japan and the United States of America send applications by electronic transmission. Switzerland has direct access to MAPS. A rights applicant can renew its rights directly through the WIPO Marks E-Renewal. Fees must be paid in advance, before files are processed, to WIPO. MAPS and AIMS have interfaces showing the amounts due (Request for Accounting) and the amounts received (Notify for Payment). Payments are reconciled in the Income Section of the Finance Department. After payment is received, an application is processed by means of MAPS.

28. The register currently contains about 900,000 trademarks, half of which are active. The register is available to the general public on two Internet sites: Madrid Express contains the basic information together with the current status and Romarin contains in addition historical information. It is planned to merge the Express, Romarin and E-Renewal systems into a single entity and incorporating a more user-friendly search function.

29. If the protection application is approved, the owner receives a certificate and the applicant's national office confirmation. The transmission of data on office equipment is automated from the MAPS and DMAPS databanks. MAPS also registers the national fees

collected directly by WIPO. Following reconciliation, these fees are reimbursed periodically using the AIMS accounting system.

30. The procedure under the Madrid and Hague systems is more cumbersome and complex than that under the PCT system. As it is currently configured, the process requires about 30 transactions for each application. These are provided by bidirectional interfaces between the MAPS/DMAPS system and the AIMS accounting application.

31. Since the MAPS and DMAPS business applications date from 1996, they include out-of-date user interfaces.

Recommendation N°2:

“I invite WIPO to include a project in the strategic plan to modernize the user interfaces. Furthermore, it would be desirable to seek possible synergies with the reprogramming of the CASPRO and CASPIA applications, which is in progress.”

Office of the Controller – Use of AIMS Reports:

32. The Controller reports directly to the Director General and the Assembly of the Member States, and performs the following functions:

- Preparation of the budget, and auditing of the budget and of expenditure;
- Special projects such as monitoring the Desk-to-Desk Assessment;
- Extra budgetary resources (fund raising).

33. The Office of the Controller includes ten people and is responsible for preparing, on the recommendation of the Member States and in collaboration with the Program and Budget Committee, the revised budget for the Biennium in progress and also the budget for the following Biennium. The proposals concerning the priorities and modifications of the programs under way are the result of prior consultation with the Member States.

34. For the systematic verification of expenditures by program, the Controller uses periodical reports on expenditures and commitments by program, drawn up on the basis of the data supplied by AIMS. Similarly, the Controller authorizes or rejects, according to the state of the budget, order forms and procurement contracts respectively.

Publications – MS Access Database:

35. In my report of June 21, 2006, on the 2004-2005 Biennium, it had already been stated that the MS Access database, used by the Publications Service, did not correspond to a standard application of sales and receivables management. In particular, examinations had given rise to the following observations: “There is no so-called ‘four-eye’ control and data-entry errors are hard to detect. There are remarkable numbers of cancellations in the MS Access system. Some ‘gaps’ in invoice numbering can be seen in the publications service.”

Recommendation N°3:

“WIPO should introduce a project into the strategic plan to replace the old publications database with the following PeopleSoft modules: Customer Relations Management, Customer Order Management and Inventory for the management of the stock of publications.”

MAIN ACTIVITIES AND ADMINISTRATIVE APPLICATIONS

Human Resources Management Department – Sigagip and HR Access:

36. WIPO operates in a dynamic intellectual property market with rapid growth. This involves swift adaptation of business processes to the new developments in the international market, for example the electronic filing of patent or trademark applications. Thus, WIPO staff policy is directly affected by these changes. In terms of human resources policy, the broad outlines of the strategy were defined and approved by the General Assembly of Member States in September 2006. The key elements constituting such a policy are:

- Integrated management of staff performance;
- The alignment of human resources’ needs based on the Organization’s strategic goals;
- Staff development in line with the Organization’s needs involving career planning and planning of successions as a result of retirements;
- Greater flexibility of contract arrangements with, inter alia, greater use of outsourcing, and attractive conditions for intellectual property specialists on a very competitive international labor market;
- The maintenance of a stimulating cultural environment attracting qualified professionals with customer service-oriented, efficient and proactive staff.

37. In order to define the needs stemming from business processes, a Desk-to-Desk Assessment proposed by the Joint Inspection Unit (JIU) will be undertaken during the first half of 2007. In particular, this study will provide an overview of the current situation, allowing subsequent staff policy to be adjusted. Moreover, the study will concentrate on the seven key processes of the Human Resources Management Department. This is all placed within the framework of the staff management principles introduced by the United Nations.

38. IT support for human relations is now limited to the use of the Sigagip software dating from the 1990s, introduced in 2000, and customized according to the needs of an international organization. This software is used mainly for the needs of salary payments. It is complemented for recruitment by the use of part of the HR Access software. Essential functions including job classification, staff development and training are missing from an integrated database. Nowadays, many of the processes undertaken in the Human Resources Management Department are done manually. Furthermore, complete up-to-date information for management is not available, or only in a limited manner, by means of a Data Warehouse containing AIMS data.

39. The system which will replace Sigagip and the subsidiary systems in use in the Human Resources Management Department must include certain new functions. The specifications can be defined in the autumn of 2007, based on the key business processes and the recommendations stemming from the Desk-to-Desk Assessment. The aim is to produce, in successive stages, an integrated and comprehensive IT system for the future new personnel management strategy.

Recommendation N°4:

“I encourage WIPO to introduce a project into the strategic plan for the forthcoming replacement of Sigagip and the introduction of a modern human resources software management package during the next Biennium. WIPO can also benefit from the experience gained by other international organizations such as the United Nations High Commissioner for Refugees. For the Human Resources Management Department this will require more streamlined processes, a proactive capacity to anticipate changes, a larger share of personnel planning and greater flexibility for staff able to perform multiple tasks.”

Desk-to-Desk Assessment Project:

40. On the basis of the report of the United Nations Joint Inspection Unit, “Review of Management and Administration in WIPO: Budget, Oversight and Related Issues”, WIPO launched a public invitation to tender and selected the independent company PriceWaterhouse Coopers (PWC) with a view to conducting a detailed Desk-to-Desk Assessment of the Organization’s financial and human resources (Desk-to-Desk Assessment Project). This study planned for the first half of 2007 must provide recommendations for the following purposes:

- Examine whether human resources are in line with the Organization’s mandate and the Program and Budget for 2006-2007 approved by the Member States;
- Propose a staff structure in line with the developments in progress and the requirements of the intellectual property market;
- Identify the opportunities to improve the staff structure and certain business processes in the Organization.

41. It will be necessary in particular to analyze the current staff structure and to identify the gaps and necessary corrections in order to realign the Organization and human resources in relation to the changing needs of the services mentioned above as a part of staff policy. The final report with recommendations planned for June 2007 will constitute the basic material for the upgrade and replacement of Sigagip respectively, and the introduction of the new processes required in the Human Resources Management Department.

Procurement and Contracts Division – Manual Procedures:

42. The Procurement and Contracts Division (PCD) includes about a dozen people and consists of two sections, General Procurement and Evaluation and Contract Administration with an annual procurement volume of about 70 million francs. This corresponds to about 2000 normal orders (Purchase Orders) and to 60 to 80 requests for Proposals (RFP).

The processes are conducted entirely manually as follows:

- Purchase request by the program manager;
- Requests for offers by the Procurement and Contracts Division with the preparation of an order form submitted to the program manager for signature;
- Examination by, and opinion of, the Contracts Review Committee for contracts of more than 100,000 francs, or 33,333 francs per year over three years respectively (the purchase request must be duly justified and defended before being approved);
- Authorization by the Office of the Controller if the budget is available;
- The original order form is registered for accounting purposes by the Expenditures Control Section in the AIMS finance module, which allocates a commitment number. The Procurement Section then places the order;
- After delivery of the goods and services, 90 per cent of invoices are sent to the accounting section which pre-registers them, and the rest are sent directly to the program manager;
- The original invoice must be signed by the program manager;
- After the signed invoice is returned, it is reconciled with the order form and registered for payment.

43. The purchasing limits have been lowered with a view to increasing the number of requests for offers in order to obtain better prices³. This has increased the administrative workload of the Procurement and Contracts Division. In order to obtain better conditions, certain contracts are grouped together by several international organizations using Interagency Procurement Contracts, such as for the purchase of personal computers.

44. Purchasing procedures are supported by two small subsidiary IT applications, i.e. a supplier's databank and checking of commitments. A new software package would allow requests for offers, order forms, suppliers' contracts and checking of commitments to be managed. The functional features of suppliers' management are already contained in the Payables module. It will be sufficient to complement this information with the suppliers' contracts used by the Procurement and Contracts Division. This will make the use of subsidiary software packages obsolete and will enable this Division to be incorporated in the AIMS administrative system, thus providing better coordination with the expenditures accounts.

Recommendation N^o5:

“In order to rationalize and streamline the purchasing procedure, WIPO should introduce the Purchasing module during 2007 following the PeopleSoft Upgrade by referring

³ Office Instruction No. 21/2006 Rev.: “Procurement and Purchase, General Principles, Framework and Procedures.”

– if possible – to the experience of other international organizations such as the High Commissioner for Refugees which already uses this module.”

45. There is now potential for optimization in relation to the flow of information between the Procurement and Contracts Division and the Finance Department in order to ensure that payments are made smoothly at the operational level. The Procurement and Contracts Division should take the following measures:

- Indicate on the order form whether a copy of the expenditures account invoice for delicate contracts should be forwarded to it;
- Add to each order, for all suppliers, the compulsory invoicing address in order to avoid payment delays. Moreover, the invoice should contain the order form number or, failing that, the name of the official that placed the order;
- Any invoice must without fail be forwarded by the internal mail service to the expenditures account section for pre-registration.

Finance Department – AIMS accounting system:

46. The Finance Department has about 40 people distributed among the Investment, Income, Expenditures and Travel and Missions Support Sections. All colleagues have access to the AIMS accounting system. This will be subject to a major upgrade at the beginning of 2007, at the same time as the XP upgrade for offices.

47. From 2010 onwards, United Nations organizations must implement the International Public Sector Accounting Standards (IPSAS – www.ifac.org). The Finance Department will set up a project for the introduction of the new standards.

48. According to IPSAS Standard N°17, tangible fixed assets must be reported. The fundamental issues here are those of the date of reporting of assets, the determination of their accounting value and the reporting of corresponding amortization expenses. In order to comply with this obligation, WIPO should have an appropriate IT solution available. The Inventory application currently in place is an isolated solution which cannot satisfy new accounting needs.

Recommendation N°6:

“In order to allow the introduction of the new IPSAS accounting standards, WIPO should replace the current application with the PeopleSoft Assets module.”

Information Technology (IT) Division:

49. The IT Division and the PCT Information Systems Division, which are under the supervision of the WIPO Chief Information Officer (CIO), consist of 92 people and comprise, *inter alia*, the following services and sections:

- the Technical Service;
- the IT Program Support Section;
- the Web and Administrative Applications Service;
- the Business Applications Section;

- the Information Security Section.

50. Following the savings of the past few years, the IT Division is planning to invest in information technologies by modernizing the technological equipment and harmonizing the software packages in place. For this purpose, the WIPO program plans to invest, *inter alia*, in the following areas:

- PCT: unification and integration of systems;
- Madrid system: enhanced use of information technologies in order to rationalize and continue the automation of working procedures;
- New investments in the technical infrastructure which has depreciated in the past few years, by using the benefits of sub-contracting the International Computing Center (ICC);
- Consolidation of the main administrative processes through the incorporation of a modern human resources management software package, the purchasing module, the strengthening of controls by means of effective reporting, the modernization of the sale of publications and the preparation of financial modules in order to meet the IPSAS accounting standards;
- Improvement of the Organization's information and asset security.

51. The implementation of these ambitious programs requires not only an appropriate budget, but also the availability of qualified people to bring these projects to a successful conclusion.

52. WIPO has planned to devise a comprehensive and up-to-date IT strategy in order to improve the planning of IT development. Based on the Organization's overall strategy, this IT strategy should encompass the longer term visions and goals, and define the guidelines for the achievement of aims.

Recommendation N^o7:

“I support WIPO's initiative to introduce a detailed IT strategy with a timeframe of four to six years in order to carry out continuous planning. This strategy should provide for an IT investment plan with coherent, concrete, prioritized and coordinated projects, and for implementation within a realistic timeframe. This information should be an integral part of the documentation made available to Member States so as to allow them to prepare and take all the necessary IT-related decisions. In the same context, the Organization should ensure that it budgets, in line with the future strategic plan, for amounts sufficient to modernize and harmonize the IT infrastructure, and to take account of personnel resources needs.”

53. IT security should be coherent and form an integral part of the overall IT strategy and IT projects introduced in the Organization.

54. IP protection is a key element for the Organization and the clients, as a result of which the Information Security Section needs to be equal to the requirements. Its portfolio of activities for 2006 comprises, *inter alia*:

- Coordinating IT security activities within the Organization;
- Establishing, introducing and updating security rules, standards and procedures;
- Raising awareness of and training colleagues, in particular those newly arrived;
- Controlling access rights;
- Managing IT risks;
- Verifying security and business continuity planning;
- Auditing the implementation of security measures and reporting the current state of affairs to management (monitoring).

55. My colleagues noted that in 2006 an audit was undertaken by an external consultant according to ISO security standard 17799:2005⁴. The aim was to evaluate the security policies and to make recommendations on the policies, procedures and organization. The audit report reveals that WIPO is on the right track concerning IT security but that a staff of two is not sufficient to carry out all the necessary tasks. It recommends the recruitment of three new colleagues over a period of six or 12 months respectively, to strengthen the team.

56. Following this audit, the Security Section's technical capacities were reinforced by the hiring of another specialist. However, the question arises as to whether a staff of three is sufficient, given the full range of activities and new challenges linked to the new security project. By way of example, there is currently insufficient budget and resources to conduct IT security campaigns and systematic awareness-raising training courses for colleagues.

57. From January 2007 onwards, a Security Change Project has been put in place in order to identify potential sources of optimization both in terms of physical security and the Organization's information and asset security.

Recommendation N°8:

“I invite the Organization to solve the issue of insufficient resources for the Information Security Section in order to ensure that all the tasks necessary for protection of WIPO's assets can be carried out as well as possible.”

58. Project managers are subject to numerous constraints and must carry out their projects successfully in at times difficult conditions. In Switzerland, different development methods exist (including those proposed by certain suppliers) and terminology may vary between them. Despite the diversity of methods, the goals to be achieved by the IT projects are the same everywhere. These goals stem from the:

⁴ L'ISO/CEI 17799:2005 establishes the guidelines and general principles for preparing, implementing, maintaining and improving the management of information security within an organization (source: <http://www.iso.org>).

- higher principle of sound management of loans granted (principles of effectiveness and efficiency);
- principle of legality (compliance) and,
- principle of the correct keeping of accounts (principles of integrity, availability and reliability).

These principles cover all the conventional notions of security and quality of information processing.

Recommendation N°9:

“In order to ensure a good percentage of success for IT projects, I encourage WIPO to use throughout the Organization a uniform project method such as HERMES (www.hermes.admin.ch) or PRINCE2 (www.prince2.com) in order to make the preparation of complex projects more professional and to facilitate communication between the different specialized services.”

59. Once it is produced, each IT solution requires support, maintenance and subsequent development activities in the operating phase. In order to harmonize and streamline the procedures for change management, the British method of the Information Technology Infrastructure Library (ITIL–www.itil.org) – has been developed. This is a series of concepts which are ever more widespread in global organizations in order to optimize IT services.

Recommendation N°10:

“I invite WIPO to use throughout the Organization a uniform incident and change management method such as ITIL, in order to harmonize procedures and make those procedures more professional.”

THE AIMS ACCOUNTING SYSTEM AND ITS ENVIRONMENT

The new Accounting System:

60. The Enterprise Resource Planning (ERP) systems, such as PeopleSoft, SAP 3/3 and Oracle, are now used in numerous large firms throughout the world. The PeopleSoft product was originally designed for human resources management. Now, it offers different versions according to the size and sector of the firm, and comprises four major functional areas:

- Finance/accounting;
- Human Resources;
- Customer Relationship Management (CRM)/marketing/sales;
- Logistical chain/production.

61. Following a request for proposals, WIPO selected the PeopleSoft product in 2002. The new accounting system known as the Administrative Integrated Management System (AIMS) replaces the old FINAUT mainframe system for accounting and the Budget Expenditure Tracking System (BETS) for reporting. The following modules of the PeopleSoft version 8.4 are currently in place at WIPO:

- Income;
- Expenditure;
- General Ledger;
- Billing.

One of the advantages of AIMS is the various possibilities of launching a search (queries) and of producing reports.

62. The first two modules, Expenditure and General Ledger, were produced in January 2004, followed by the implementation of Income and Billing in the autumn of the same year. This time lag is explained by the fact that Expenditure and General Ledger required only a small amount of configuration (Customization). Income and Billing, by contrast, were significantly adapted – i.e. programmed – to the specific processes and needs of WIPO.

63. The operation of the project for the introduction of AIMS has not been subject to detailed analysis. My colleagues have, however, noted the following points:

Project Management: AIMS has enjoyed good project sponsoring and good project management. The necessary resources have been made available for the project and users' collaboration was guaranteed. This commitment has enabled WIPO to minimize the risks of poor results and non-satisfaction of expectations. The persons concerned – business technologies and users – have been trained according to their specific needs;

Dependency on External Consultants: WIPO has encouraged the transfer of knowledge between external consultants and the internal maintenance team. Back-up is provided after the new system has been introduced;

Cost: WIPO has tried to introduce standard solutions and to customize a program only if the business processes required it. According to the information obtained, the PeopleSoft accounting software was selected on the basis of its configuration possibilities.

64. AIMS has about twenty incoming or outgoing interfaces with its surrounding applications. From the point of view of IT, my colleagues noted that the interfaces are closely monitored. With the transfer to the ICC, it is the ICC which will monitor the interfaces.

ERP Mapping System and Development:

65. As already mentioned at the beginning of this report, one of the aims of the audit was to understand the IT environment of the AIMS accounting system. For this purpose, the Annex to this report has been prepared showing about ten applications which have links with the accounting system. The mapping system reveals considerable diversity in the IT landscape, which is largely a reflection of the diversity of the business processes.

66. The major asset of an ERP system is its capacity to integrate several functional areas as referred to in paragraph 60. Such integration has several benefits: easier IT management, reduction in the number of interfaces, reduction in manual checks, productivity gains etc.

67. Integration would allow WIPO to consolidate the IT back-up for the main administrative processes such as human resources, procurement and contracts, the sale of publications and asset management in order to meet the requirements of the new IPSAS accounting standards.

Recommendation N°11:

“WIPO should introduce a project into the strategic plan in order to provide for the development of the AIMS system, by incorporating the other “satellite” administrative solutions so as to benefit more from the advantages of an ERP system and to achieve productivity gains. Such a procedure would reduce the diversity of the IT landscape, decrease the number of interfaces and comply with the new IPSAS accounting standards.”

AIMS Upgrade Project and Managed Hosting at the International Computing Center (ICC):

68. Since November 2006, preparations have been under way for upgrading the AIMS PeopleSoft Software version 8.4. to version 8.9., with the aid of external consultants. This new version requires the use of more up-to-date and higher performance hardware. The computers located in the WIPO premises do not meet these requirements. Negotiations are therefore in progress to transfer the management of AIMS to the ICC. This transfer will have the following benefits in relation to the current situation:

- New more powerful computers for production, testing and development;
- Availability of operating equipment 24 hours a day, seven days a week, which is not now the case. The AIMS production team is available only during normal WIPO working hours;
- Furthermore, the ICC would allow a recovery and continuity plan to be implemented with a starting period for operations within 24 hours, which is not currently the case. For this purpose, the machines currently in use at WIPO remain available for back-up;
- Finally, the migration and professionalization of the operation will allow clearer separation of the functions between the management of the production system and development. Similarly, they will allow functions to be separated between the administrators of the production databank and the WIPO developers who now have access to production data in case of emergency;
- WIPO must document the operational, maintenance and development procedures, and define the distribution of tasks between the AIMS technical team and the ICC.

69. The ICC offer contains the cost of migration and the operating costs with machines that are leased, renewable every five years. This migration will also require the migration of the ORACLE databank from version 9 to version 10.

Recommendation N° 12:

“WIPO should implement these managed hosting plans with the ICC as quickly as possible so as to increase support, ensure continuity of operations and the separation of functions between the developers and the operation.”

Operation of the AIMS Accounting System:

70. The Web and Administrative Applications Service consists of the following sections:

- the Internet Services Section; and,
- the Administrative Applications Service:
 - Finances System Unit (“AIMS Technical Team”);
 - Human Resources System Unit.

71. Checks have shown that a formal procedure had been introduced to provide support and management for the changes to the AIMS accounting system. As good practice requires, three levels of support exist:

- the first level is provided by three super users from the Finance Department as representatives on the business side;
- the second level is provided by the Finance System Unit (AIMS Team) which receives and examines the changes to be made. The decision to implement them is taken during periodical meetings with the super users;
- the third level is provided by the external firm Cedar Consulting UK. Two consultants work partly on the spot in Geneva, and partly in their office in England by means of remote access. WIPO is very satisfied with the quality of their work.

72. Users can participate in the management of changes and enter their incident or improvement requests on a form for forwarding to the super user in charge. The Web and Administrative Applications Service proposes to optimize the procedure by introducing the ITIL methodology (see paragraph 59 above).

73. The Finances System Unit consists of four people working full time, including one on temporary contracts (in-house consultant with a Special Services Agreement). These colleagues have both technical and business knowledge, which is of great value in the operation of a system such as AIMS. Replacement in case of absence or leave is guaranteed within the Unit.

74. Colleagues in the Finances System Unit have followed specific training programs in order to ensure that their skills in the mainframe environment are reconverted to skills in a client/server environment. Moreover, a permanent transfer of knowledge takes place between external consultants and the AIMS team. The technical documentation, including the descriptions of configured elements, is comprehensive. Since the reversion has been successful, the quality of the team’s work is now very good. The Organization should be

careful not to lose this precious knowledge and should ideally award a permanent contract to all the key colleagues in the Finances System Unit (AIMS) and in the Human Resources System Unit (Sigagip).

75. Nowadays, the separation of tasks between development and operation is not guaranteed. This is one of the reasons for which I believe that the transfer to the ICC should be made as quickly as possible (see Recommendation No. 12).

76. The Finances System Unit is inundated with requests and will remain so, despite the transfer of operations to the ICC, taking into account the new challenges and projects from 2007 onwards. For this reason, a solution should be found quickly in order to guarantee the operational continuity of the accounting system and the good quality of this Unit's activities, as well as settling quickly the issue of insufficient resources.

77. Good practice requires that a post implementation audit is organized after a system has entered into production or a major release. Such an audit allows the project results to be examined and an evaluation of whether the goals have been achieved in an effective and efficient manner. It also serves to draw lessons for future projects. I invite the WIPO management to discuss this issue.

78. Users of the Income and Expenditures sections are on the whole satisfied with the new accounting system. In its current state, AIMS PeopleSoft is more or less user-friendly and good from an ergonomic point of view. In Income, the configurations before and after the module was introduced have facilitated the work of users. As part of a continuous process of optimization, many "normal" operations which do not pose a problem are automated. The gain in time and productivity is used to deal with special cases which are much less numerous but which require great manual effort and in terms of time on the part of the user. For example, a client wishing to protect a trademark pays in advance but does not indicate all the information necessary for reporting. Accounts will have to make all the necessary searches in order to obtain the missing information.

79. Periodical meetings known as "clinics" are organized in order to allow users to exchange information and training. In the context of the AIMS upgrade, users must follow a new kind of training. User documentation is detailed and comprehensive. However, there is no summary documentation linking the business processes to the financial operations covered by AIMS. It would be important to consolidate essential information, especially for newly arrived colleagues.

Recommendation N°13:

"In my opinion, it would be useful to introduce consolidated summary documentation linking the business processes to the financial operations covered by the AIMS accounting system."

80. Users do not always follow the procedure introduced in case of office automation problems and contact the colleagues working in the Finances System Unit, who are already overworked – located on the same floor – instead of calling the central Helpdesk. I invite those in charge to consider a solution to relieve the AIMS technical team of their burden."

AIMS Security:

81. A security concept exists for the AIMS accounting system, which is in the course of being updated. In 2003, the Information Security Section carried out an AIMS Security Review with the aim of evaluating the state of security of the UNIX operating system, the Oracle database and the PeopleSoft application. My colleagues have noted that the work is monitored and that a large part of the recommendations in the related report have been introduced.

82. The list of users of the AIMS system contains about 150 names, including all the program managers with access to the monthly reports produced by the Business Objects software. In 2006, only 43 per cent of users used the system. Requests for access are made by delegation of the Finance Department to the three super users. The three super users send the request to the manager responsible for implementing these rights. The concept of access rights is defined by the document "Security Design Documentation". The access rights consist of profiles containing a number of roles. These roles can be specified in more detail in permission lists, and also with specific access to certain pages and functions. There is a separation between the functional tasks of business users and the maintenance tasks of the AIMS technical team.

83. On the basis of this list of 150 users, my colleagues have noted a number of users who no longer work for the Organization. The manager immediately did what was necessary to remedy the situation. Moreover, there is an "auxiliary" list of about 100 users subdivided into functional blocks with the respective roles. A functional definition was missing for the 50 or so program managers who nevertheless had very restricted access.

Recommendation N°14:

"I invite WIPO to introduce a more formal procedure for the management of users, in particular for the requests for authorization and departure announcements, and to restrict the use of the system only to people using these functions."

84. Through the analyses undertaken, my colleagues did not note any aspects which would have led them to make observations concerning the security of user privileges in AIMS. Monitoring of the technical implementation of access rights was not included in this audit.

CONCLUSIONS

85. The observations which I can make as a result of this audit can be summarized and grouped together as follows:

Aim: Increasing Productivity

– In the PCT area, the unification and integration of systems is a requirement, given the very rapid development observed in previous years. The Organization should promote further the use of modern technologies by the national offices of Member States (cf. Recommendation N°1).

– For the Madrid and Hague systems of trademarks and industrial designs respectively, the use of information technologies should be strengthened and become more user-friendly in order to rationalize and continue the automation of working procedures. Synergies should be sought with the reprogramming in progress of IT systems in the PCT area (cf.: Recommendation N^o2).

– WIPO should consolidate the main administrative processes by incorporating up-to-date human resources management software, the purchasing module, the strengthening of controls by means of effective reporting, the modernization of the sale of publications and the introduction of an appropriate financial module in order to satisfy the IPSAS accounting standards (cf.: Recommendations N^{os}3, 4, 5 and 6).

Means to Achieve the aim: Strategies and Investments

– A human resources strategy should be developed and take into account the results of the Desk-to-Desk Assessment Project (cf: Recommendation N^o4).

– Similarly, WIPO should devise a comprehensive and up-to-date IT strategy which will serve as a basis for establishing the programs and activities for the 2008-2009 biennium. In order to face up to the numerous challenges in the field of IT, it is essential to have a coherent strategy in harmony with WIPO's general strategy. The necessary investments should be justified on the basis of the IT strategy and plan (cf.: Recommendation N^o7).

– In order to respond to these integration challenges, a real ERP strategy should be devised. The harmonization of software packages and interfaces would reduce the diversity of the IT mapping system and allow productivity gains to be made (cf. Recommendation N^o11).

– The Organization should invest in the technical infrastructure which has deteriorated during the past few years, by benefiting from the advantages of ICC sub-contracting. It should equip itself with the requisite financial means and staff resources in accordance with its future strategic plan (cf. Recommendation N^o7).

– It is planned to enhance the Organization's information and asset security by means of the Security Change Project. WIPO should resolve the issue of making a sufficient number of qualified staff available to prepare for future challenges (cf.: Recommendation N^o8).

Increasing Operating Efficiency and Security:

– The project to implement the new AIMS accounting system has been a success. The positive result was, inter alia, possible because the Organization managed the risks linked to the business processes and project management well. It should take these good experiences into account in its new project, with the aim of upgrading AIMS.

– WIPO should consider the introduction of a project management method and a management concept for routine incidents and changes throughout the Organization (cf. Recommendations N^{os}9 and 10).

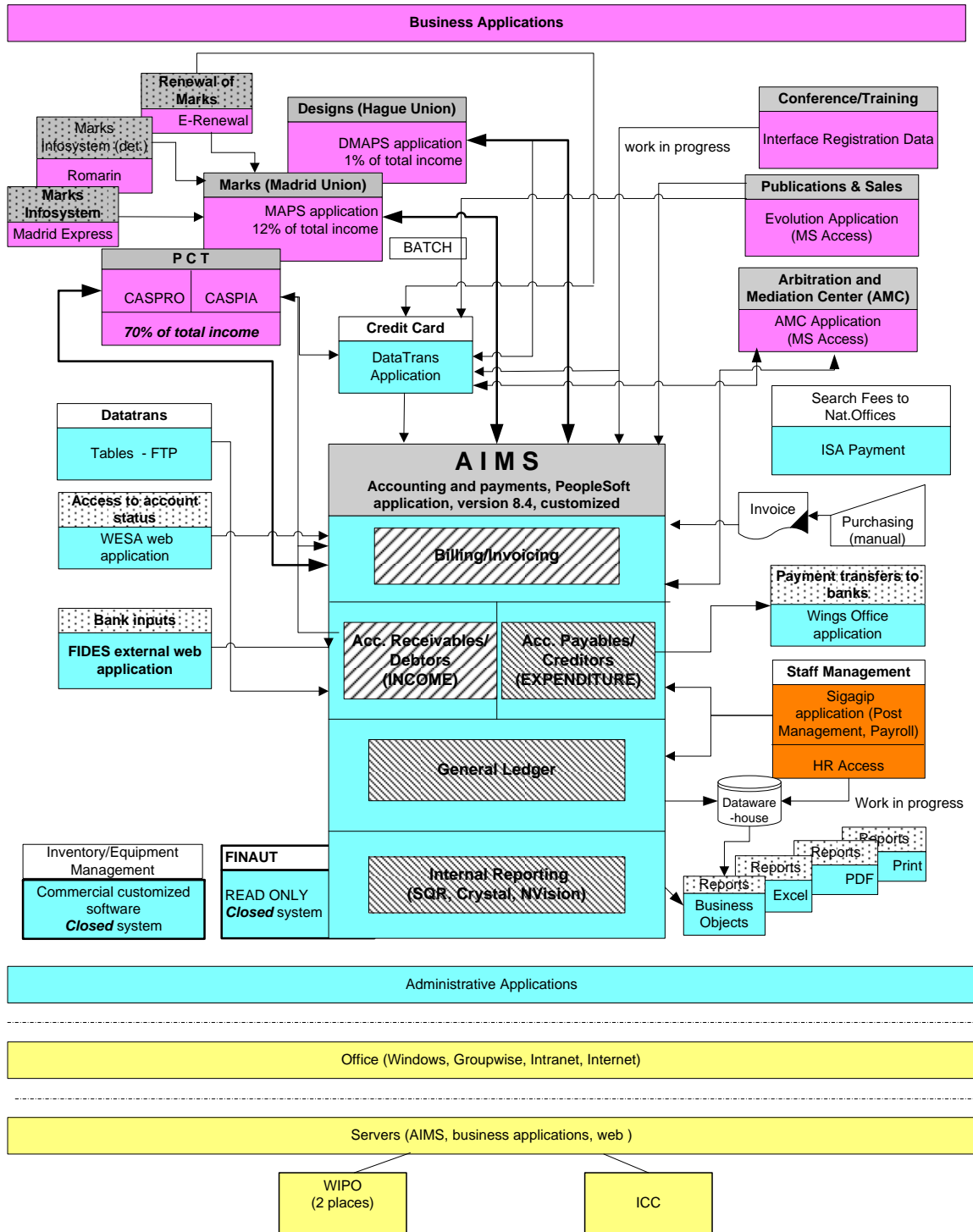
– The transfer of the accounting system operation to the ICC will allow the risks to be reduced in relation to disaster recovery and business continuity. At the same time, it will be possible to improve the separation of tasks between development and production both in terms of applications and databases (cf. Recommendation N° 12).

– The situation relating to the functioning, support and use of the accounting system has been considered good. Potential sources of optimization have been identified in relation to collaboration between the Procurement and Contracts Division and the Expenditures Section, knowledge retention and the excessive workload of technical staff, consolidation of documentation and the process of announcing changes in user management (cf. Recommendations N°s 13 and 14).

86. In an ERP system such as AIMS PeopleSoft, one of the risks is in terms of planned adaptations at the time of installation or subsequently. When a new release has to be installed, these non-standard parts require particular effort. At WIPO, the Income and Billing modules have been heavily customized. These two programs should be subject to particular attention during the 2007 upgrade and be verified during a future audit.

87. I am convinced that the Organization will be able to meet its numerous challenges relating to IT, if it takes account of the good experience gained when its new accounting system was introduced and if it benefits from the excellent skills demonstrated by its staff.

**Chart of the AIMS PeopleSoft Accounting System Environment
(as at December 11, 2006)**



Explanations: application/web access heavily customized modules modules close to PeopleSoft standard

[Annex II follows]