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**Country Paper of**

**Supreme Audit Court of I. R. Iran**

**SANA: Electronic Auditing System**

**A Development Model**

## **1- Introduction:**

To improve the state management system, especially in the sensitive field of resource utilization and the consumption of national budget, and to safeguard public funds through exerting continuous financial control, Supreme Audit Court (SAC) has established Electronic Auditing System (SANA). Through this system, a huge bulk of information related to the performance of administrative agencies is provided to SAC by different sources inside and outside auditees. Then, it is filtered, classified and organized, and finally processed, analyzed and interpreted.

Achieving clear and reliable analytical and descriptive information about the performance of administrative agencies, SAC auditors will be able to make the most possible partial and well-founded judgments through using assessment and performance analysis models.

Timely, comprehensive and effective investigations of activities, transactions and financial decisions of administrative agencies will be carried out, the level of security and safety of the state financial and executive actions will be raised, and the possibility of making error and abuse, and committing fraud, corruption, and crimes in the process of using public resources will decrease.

SAC's SANA plan is one of the biggest system development projects based on Information and Communication Technology (ICT) in Iran, and will undoubtedly have ample meaningful effects on the administrative system of the country and how to use financial resources and spend liquidity of public sector. This project has been implemented broadly on a national level, and will connect more than 3,000 active administrative and executive spots of ministries, agencies, organizations, and public or state-owned companies or enterprises using public funds. Through this system, one of the biggest data centers is established in public sector of the country, and for the first time, the possibility of timely or immediate investigation of the performance and financial measures of the administrative agencies and carrying out controls and different audits is provided. SANA plan is a unique project nationwide, and one of the significant representations of the realization of electronic government (e-government), or better to say, national electronic governance.

## **Main Objectives of SANA Plan:**

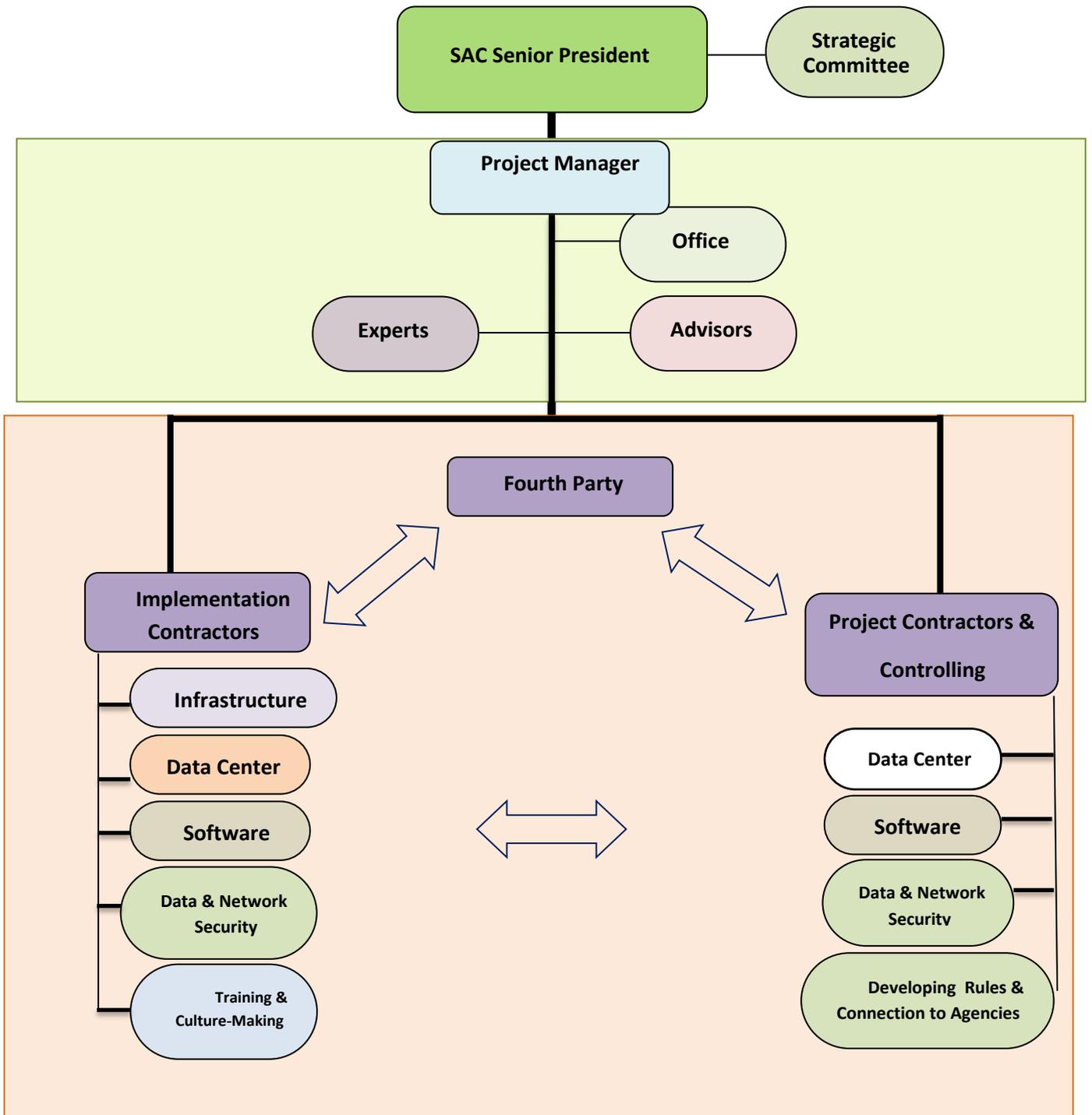
- Using ICT capabilities in the field of electronic auditing;
- Increasing speed, precision, accuracy and comprehensiveness of monitoring and auditing;
- Achieving good interaction and communication between agencies and Supreme Audit Court, and development and integrity of databases and basic information;
- Maintenance and availability of detailed comprehensive information of auditors and instant access to the information;
- Applying methods of powerful electronic auditing while not being influenced by social and political changes;
- Reducing the bulk of evidence and documents attached to reports;
- Creating a safe and secure platform for sharing information with the least possible errors and preventing the disclosure of information;
- Reducing the possibility of change in the exchanged information;
- Facilitating the analysis and investigation of financial performance of ministries and public companies;
- Updating rules and regulations of electronic auditing and control of financial and budgetary performances of ministries and public companies;
- Preventing the interference of interests, developing a unified approach, and systematizing electronic auditing;
- Offering the necessary consultation on-line to the agencies using budget in order to prevent violations;
- Accelerating the investigation of crimes and financial and budgetary abuses;
- Extending the scope of comprehensive electronic auditing and developing a regulated system.

## **2- SANA Implementation Management Structure**

To develop a plan with such an operational scope, varied technological aspects and numerous legal, managerial, financial and administrative sensitivities, all resources and potentialities of the country in the fields of software, hardware, and brain ware (both on infrastructure and operation-application levels) should be utilized in the best way.

To overcome the bureaucratic limitations in the public sector and to develop the most useful initiative for SAC to lead SANA plan effectively, outsourcing under a regulatory system was taken into account. In this system, project management, strategic committee, fourth party (helping employer in guiding the plan effectively), and different contractors in charge of engineering responsibilities, design, implementation and operationalization of projects are predicted.

## Implementation Management Structure



### 3- SANA Operational Parts

Fourth party is the axis of project coordination and management. In fact, fourth party is considered as the representative of employer in project management.



#### The main duties of the fourth party are as follows:

- Gaining knowledge about the mission, operational range, policies and general framework of project implementation and detailed project planning;
- Recognition and documentation of SAC existing situation in the fields of software, hardware, network connection, and procedural framework related to project implementation;
- Recognition, evaluation, and accreditation of project contractors and all legal and natural people demanding to cooperate with SAC in the implementation of electronic auditing plan;
- Preparation of tender documents, technical evaluation of received proposals and cooperation with SAC in determining tender winners according to approved criteria and indicators;
- Reviewing and confirming the list of needed items for projects declared by contractors, controlling and ensuring the project integrity, and technical examination and confirmation of purchased items;
- Technical investigation of SANA plan and related projects' development process, recognition and determination of possible reviews and modifications, and offering proper suggestions to project manager for intended changes in future actions;

- Controlling the documentation process of project activities and measures by all parties, and organizing and implementing proper procedures of information gathering about the process of project progress;
- Developing and controlling policies of training SAC managers and staff, and users and staff of all ministries, organizations, public companies, and all institutions which are influenced by the implementation of the new system;
- Besides the fourth party, five other subsectors are active in the operational part of SAC electronic auditing system: communication infrastructure and connection to agencies, data center, comprehensive software system, information and network security, training and re-training human resources.

### **3-1 Communication Infrastructure & Connection to Agencies**

Using the latest facilities of communication technology, SAC communication network provides the possibility of communication and data and information sharing between administrative agencies nationwide and SAC general offices in centers of provinces and headquarters. This network is multi-layered, and in its different layers, SAC special communication potentialities along with the state's general communication potentialities are employed.

#### **Progress Status of Infrastructure Project & Connection to Agencies**

- Designing & installing SAC national network in the state's telecommunication platforms;
- Implementing the value-added service of video-conference;
- Raising the capacity of communication channels to fiber optics;
- Holding the tender of selecting the administrator of connection to agencies;
- In the contract of connection to agencies, 3700 spots are tentatively activated and connected to SAC. Regarding the gradual process of connection to agencies, and also creating the atmosphere of interaction with agencies, this sub-project will continue its activity till the end of the completion of SANA plan.

### **3-2 Data Centers:**

SAC data center is the main environment for maintaining and gathering operating data of administrative agencies. Applying varied software and hardware capacities (including the possibility of massive data storage, service providers of data management, classification procedures, information search and recovery, guarantee procedures of information security, ...), this data center simultaneously prepares the ground for access to and utilization of agencies' operating data and their processing

across the country round the clock for all network users (with different levels of classified access and organizational definition).

There are two data centers in SAC electronic auditing system:

- a) 26 provincial data centers (construction of data centers in 5 provinces is dependent on the necessary preparations in provincial centers.)
- b) Main data center. The major requirements of this data center are as follows:
  - Implementation based on TIA-942 Standard and best practices in the construction of data centers (Tier 1 type in provincial data centers & Tier 3 in data center of the headquarters);
  - Implementation according to local standards and codes such as the "Passive Defense" requirements;
  - High accessibility to information and services;
  - Appropriate scalability;
  - High security based on modern standards;
  - High manageability.

#### **Performed Measures:**

- Designing the construction of 26 provincial data centers and its 100 percent progress;
- Designing the main data center and its 100 percent progress;
- Holding tenders, determining and signing contract with the contractor of the main data center.

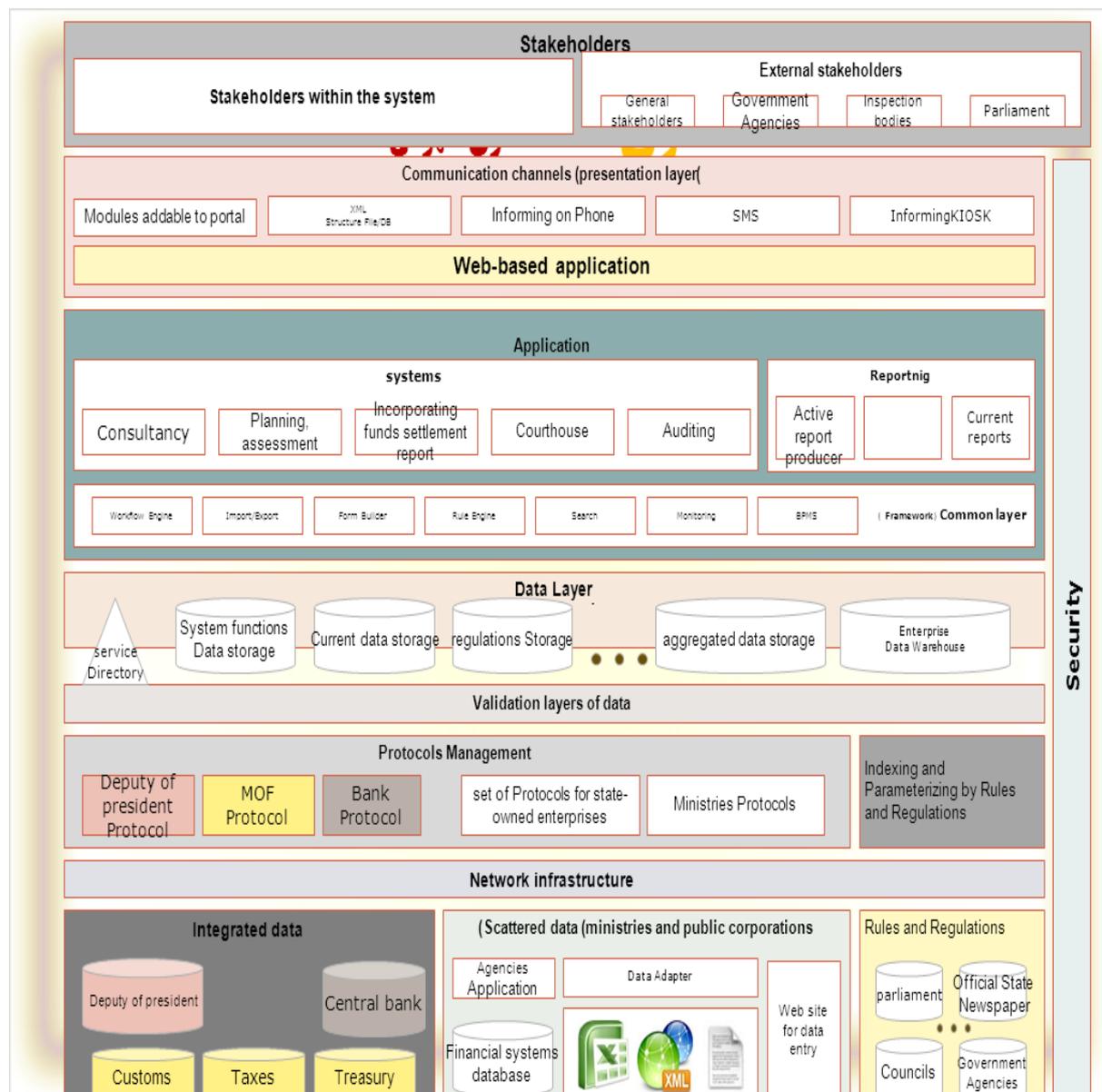
### **3-3 Comprehensive Software System**

SAC software system, which is the most essential part and, in fact, the heart of the system, provides the possibility of different necessary processing of operating data of executive agencies and compiling various audit and performance evaluation reports. This system is multi-layered, evolutionary, and extensible, and is able to include gradually a varied series of different software packages in framework fields (operating systems and basic software platforms), and also application (different programs and procedures of audit and performance assessment).

Through this system, utilizing value-added services such as data mining and knowledge management is possible, and the ground for implementation of decision-making and expert systems is prepared. Through the future development of SAC comprehensive software and with the application of methods such as data warehouse management and integrated databases management, a new capacity in the synergic utilization field of the agencies' operating data is created, and SAC auditors and evaluators will be able to do their own investigations and auditing within pre-defined

indicators, and to prepare, present, and publish, in the shortest period of time, comprehensive, efficient, timely, and accurate regulatory reports.

From the conceptual point of view, SANA software structure consists of seven major sub-sections: 1- Data gathering 2- Data validation 3- Protocols 4- Data warehouse 5- Framework 6- Application 7- Communication channels. The whole connection among these sub-sections is presented in the following chart:



**The implementation stages of this software system are as follows:**

- Designing software details and defining protocols;
- Pilot data gathering under defined protocols;
- Preparing software framework;
- Preparing information systems;
- Software pilot;
- Guarantee and maintenance.

**Progress Status of SANA Software Implementation**

- Doing comparative study;
- Recognizing SAC requirements and designing the needed software;
- Holding the tender of selecting the implementation administrator;
- Performing the project's administrative measures from mid-June, 2011.
- Application of SANA system for information gathering related to the auditees' internal controls and analyzing them in 2014

It is predicted that the activities related to the preparation of the necessary communication protocols for receiving information from scattered and central databases of administrative agencies are implemented till the end of December. Moreover, the software implementation in the SAC headquarters and general offices of provinces, and the software pilot implementation for receiving information from two administrative agencies are completed till the end of June, 2012.

**3-4 Information & Network Security**

Due to the extension and special sensitivities of SAC electronic auditing system nationwide, it is essential to consider the necessary safety and security measures in different parts and layers of this system and apply them in an integrated and coordinated way to the whole system. In this regard, it is required that all protocols of data, information and network security, based on the latest accepted international standards, be implemented in different layers and levels of SAC presentation framework, data center, software, all system application levels, and all connected spots to network across the country.

**The implementation stages of projects are as follows:**

- Planning and preparation.

Providing the services of security consultation is as follows:

- Developing SAC policies and security strategies;

- Supervising perfectly the security implementation in the SAC headquarters and two selected provinces as to SAC's software field and carrying out security tests;
- Supervising perfectly the security implementation in the SAC headquarters and two selected provinces as to SAC's data center field;
- Preparing the operational plan and determining projects and necessary actions to cover other security requirements;
- Carrying out permeability tests on software and offering implementation strategies to remove the recognized security problems;
- Holding training courses on ISMS (Information Security Management System), course of information security basics, course of information security using the topics of CEH course, CCSP course, and CLSSP course.

### **Progress Status of Information & Network Security Projects**

- Designing the necessary security mechanisms;
- Holding the tender of selecting security advisor;
- Selecting advisor.
- implementation

### **5-3 Training and institutionalization**

The successful implementation and performance of SAC's electronic auditing system (SANA) on a national level is totally dependent on all-out sympathy and support of SAC's managers and personnel, and also cooperation and collaboration of officials and authorities of organizations, state-owned enterprises and their affiliated staff. In this regard, the following measures should be taken into account:

- Recognition and evaluation of users' educational needs in all operational fields of the new system such as network and communication, hardware, software, and application systems, new methods of auditing and performance evaluation, security considerations, ...
- Developing training policies and integrated planning in accordance with them while considering the potential and realized capacities and abilities;
- Guidance and effective implementation of educational programs with the use of all existing capabilities and potentials, especially the facilities provided by Information and Communication Technology (ICT), including distance training, electronic training, course presentation depending on learner's individual preparation, applying multi-media and training through video-conference.

### **Project Progress Status in Training & Culture-making**

- a) Completion of designing the mechanisms of necessary training:
- 1) In the training part, the objective is to identify the training needs of special beneficiaries in SAC, the educational planning based on the priority of beneficiary groups, and to hold training courses as a result of identifying educational needs. With regard to the progress of SANA project, these trainings are gradually carried out. In line with the completion of fiber optics cabling stages, the purchase and installation of fiber optics equipment, design of provincial data centers, and the selection of the executor of provincial data centers construction, the need for teaching personnel in the SAC headquarters and provinces is felt and is being satisfied based on a schedule.
- b) Holding training courses:
- 2) According to obtained results from studies and needs assessment, training programs are classified into five categories, and are being carried out with priority:
    - Training courses and public seminars on SANA project including seminar on public familiarity with SANA software and its role in SAC;
    - Training courses and seminars on SANA software project including IT audit, COBIT and IDEA courses, familiarity with Word processors, Excel, and databases (Access);
    - Training courses and seminars on SAC data centers project such as familiarity with provincial data centers and how to use and support their equipment, familiarity with the main and back-up data center and how to use and support its equipment, and holding the specialized courses of network, MPLS, and fiber optics;
    - Training courses and seminars on SANA security project such as seminar on familiarity with the security requirements of training course and familiarity with the security requirements and how to use them;
    - Training courses and seminars on the project of setting the working rules and management of auditees' connection to SAC. The related courses will be designed and taught in the first three months of 1391 (2012) for the beneficiary group.

### **SANA Propagators Plan Implementation**

Electronic auditing system (SANA) is a national plan with the aim of creating a unified and coordinated electronic monitoring system in SAC through developing systems and ICT (Information & Communication Technology) infrastructures to make the beneficiaries' quick, correct, and timely access to necessary information possible for the sake of creating financial discipline and safeguarding public funds.

Regarding the bulk of this project and the necessity of interaction between SAC's internal and external beneficiaries, including administrative agencies, it is essential to prepare the ground for information-giving and culture-making at the levels of beneficiaries through communication mechanisms. Therefore, in line with the realization of this objective, training, culture-making, and management committee of SANA project intends to start "SANA Propagators Plan" in order to choose the people interested in the propagation of knowledge and culture of using Information and Communication Technology (ICT) as to the project achievements in administrative agencies. This group will start its activity after getting through the necessary trainings as SANA project propagators.