



IAEA

الوكالة الدولية للطاقة الذرية

国际原子能机构

International Atomic Energy Agency

Agence internationale de l'énergie atomique

Международное агентство по атомной энергии

Organismo Internacional de Energía Atómica

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Charge d'Affaires
Permanent Mission of the USA to the IAEA
Wagramer Str. 17 -19
A-1220 Vienna

2004-07-27

C O P Y : C O P I E

Sir,

I have the honour to refer to the U.S. Support Programme and am pleased to provide the attached new cost-free expert task proposal for your consideration. This task proposal is a general request for the recruitment of suitable expertise. A typical job description is attached. Further job descriptions are available on request.

The Department of Safeguards would appreciate the nomination of more than one candidate. This will allow the Department to perform an evaluation of candidates that will result in the most suitable candidate being selected for the task. So that this process may proceed on a timely basis I have listed the proposal below along with a closing date for nominations and expected start date. Also in order to facilitate the selection process I would like to ask you to send the candidates' Curriculum Vitae and an Agency Personal History Form with the nomination. Of course all information will be treated as confidential.

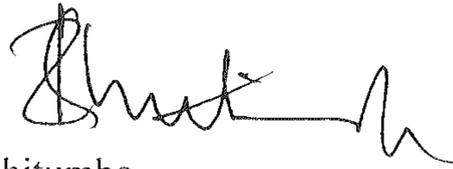
SP-1 Number	Title	Expected Start Date	Closing Date f. Nominations
03/ISH-002	Expert: IAEA Safeguards Information System Re-engineering Project (IRP)	January 2005	August 2004

I will inform you of the result of the evaluation as soon as a decision is made. The final documentation for the successful candidate can then be completed through the Support Programmes Administration and the Division of Personnel.

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I would also like to take this opportunity to express the appreciation of the Agency for the valuable contribution provided by your Support Programme to the Agency's safeguards efforts.

Accept, Sir, the assurances of my highest consideration.



K. Chitumbo
Acting Deputy Director General
Department of Safeguards

Enclosure

cc: Ms. S. Pepper, USSP Coordinator
Mr. M. Farnitano, US Mission

SP-1 TASK PROPOSAL PART

1. Task Proposal

- 1.1 Task Proposal ID: 03/ISH-002 Date received in SPA: 2003-08-19
- 1.2 Task Title: Expert - IAEA Safeguards Information System Re-engineering Project (IRP)
- 1.3 Requester / Division / Section: Costantini / SGIT / IIS
- 1.4 Is this a CFE task? No
- 1.5 Task Category: D
- 1.6 Is this a joint task for MSSPs? No
- 1.7 Is multiple acceptance required? No

If 1.6 or 1.7 is yes, indicate the reason:

2. Project

- 2.1 Project ID: SGIT-001 Project Type:
- 2.2 Project Title: IAEA Safeguards Information System (ISIS)
- 2.3 Project Manager / Division / Section: Smith,P / SGIT / ISH

3. Safeguards Requirement Identification

3.1 What is needed, why and when:

Background

The work of the Department has changed significantly, since the discovery of Iraq's clandestine nuclear programme in 1991, with the adoption of Strengthened Safeguards measures, the Additional Protocol and Integrated Safeguards. These measures involve a substantial increase in analysis of information, whether submitted by Member States or collected as a result of Agency verification activities. Many new functions have been added to ISIS since 1991, but due to severe budget limitations there has never been the opportunity to invest in a comprehensive reorganization of the information systems. As a consequence, the new functions have been added in a piecemeal fashion, and there are substantial difficulties in integrating the different parts of the system.

This reduces significantly the efficiency and effectiveness of ISIS, and results in an increased workload for the users of the system, who cannot navigate easily within the different applications, and need to spend a considerable amount of time in reconciling information from different sources. Moreover, this manual handling is error-prone, therefore increasing the risk of providing inaccurate assessments about the absence of undeclared nuclear material or activities, i.e. the core business and the statutory obligations of the Department of Safeguards.

Some parts of the current ISIS, for instance the NPT Accounting and the Computerized Inspection Report, were developed more than 20 years ago, and need to be migrated urgently to a state-of-the-art platform. Keeping the status quo will increase the risk of failure of the system, as well as expose SGIT to the inevitable loss of knowledge due to the imminent retirement of the last staff members who participated in the design of the current system.

Two studies, funded by MSSP task USA D 1288, were carried out from September 2002 to March 2003 in order to develop an overall plan for the ISIS re-engineering project and to evaluate the benefits which a successful completion of the project would bring to the Department. The plan, presented to and accepted by

Safeguards management on 2003-01-07, foresees a phased project with defined sub-projects with deliverables, milestones, and checkpoints. The project structure is modular to enable early implementation of those subprojects that bring the maximum benefits.

What is needed

Assistance is required from Member States to provide support, both direct and indirect, to the project. The IRP plan estimates that internal SG resources to the extent of 30 full-time equivalent staff for the whole duration of the project will be needed.

Involvement of SGIT staff is essential in order to ensure:

- A transfer of knowledge of the internals of existing systems to the contractor
- A transfer of knowledge of the new systems from the contractor to SGIT staff

This involvement is critical for two reasons. Firstly the software systems to be replaced are by and large custom-developed and detailed knowledge of how they currently function is vital to be able to replace them with modern future-proof systems that meet the Department's requirements. Secondly to avoid becoming dependent on outside contractors for future maintenance and enhancement of the newly delivered systems, it is extremely important that SGIT staff play a substantial role in the design and development of the new systems.

On top of that, involvement of SG staff outside SGIT is also essential for the success of the project:

- To provide detailed user requirements of the subcomponents of the system;
- To contribute in monitoring and evaluating the deliverables;
- To verify the conformance of the final product to the specifications and needs of the users;
- To ensure smooth transition from the current to the new system.

Member States can support the project through provision of cost-free experts including, but not limited to, the following roles:

- To be included in the development project teams;
- To replace the SG resources reallocated to the IRP;
- To provide training on the new technologies to be used in the new system;

Why is it needed

As pointed out above, the main reasons for the IRP are:

- To improve the effectiveness and the efficiency of the work of the Department;
- To reduce the possibility of errors due to manual handling of data coming from different parts of the system;
- To reduce the risk of loss of knowledge related to staff turnover;
- To reduce the risks of failure of the older part of ISIS.

When is it needed

The implementation phase of IRP is expected to start in early 2004, and last for 3.5 to 4 years.

Resources are therefore needed in the timeframe 2004-2007.

Timely start of the project is of the paramount importance, because delaying implementation now may force us into an emergency situation later on, at a time when resources are even more stretched. Moreover, with staff turnover the situation can only deteriorate in the future.

3.2 How will the task results be used and by whom:

The task results will be beneficial to the whole Department of Safeguards, including, but not limited to:

- The users of ISIS, who will be able to perform their work more comfortably, efficiently and effectively;
- Member States, who will receive more timely information from the verification activities of Safeguards;
- SGIT, who will be able to use more efficiently and effectively its resources, concentrating its efforts on a lower number of different platforms and on state-of-the-art systems;
- SG, who will be able to free up critical resources from the obligation to perform repetitive tasks and reallocate them to core business activities.

3.3 Consequences if task is not performed:

The consequences of inaction follow directly from the exposition above, and are of two types:

- Increased risk of failing to meet our safeguards obligations, due to a potentially error-prone system, with manual operations and non-optimized business processes;
- Reduced efficiency and effectiveness, due to the high complexity of the systems, the multiplicity of platforms, retention of core software implemented using outdated programming languages, the variety of user interfaces which are not always user-friendly.
- The risk of loss of relevant knowledge and experience with the imminent retirement of the older developers should also be mentioned again.

4. IAEA Proposed Work Outline

4.1 Major task stages with timing:

Implementation of the IRP is expected to start during 4Q 2003 and to take from 3.5 to 4 years to complete.

4.2 Support Division(s) / Section(s): SG / ALL

4.3 End User Division(s) / Section(s): SG / ALL

4.4 Estimated duration in months:

5. Safeguards Approval Process - not displayed

6. Acceptance by MSSP(s)

6.1 MSSP(s) to which the task is proposed:

Date accepted:

Agency Task ID:

ARG
AUL
BEL
CAN
CZ
EC
FIN
FRA
GER
HUN
JPN
NET
ROK
RSA
RUS
SWE
UK
USA

JOB DESCRIPTION FOR PROFESSIONAL POSTS

The following job description should be completed in duplicate and forwarded through your Departmental Administrative Officer to the Division of Personnel when (1) a classification review of an existing post is proposed, (2) a new post is established requiring classification and recruitment action, or (3) the duties of a post have changed significantly. Where there is an incumbent in the post, the description should be completed jointly by the incumbent and immediate supervisor. If the post is vacant, the immediate supervisor should complete the description. Considerable care should be given in completing the job description as it will serve as the primary source of information in evaluating the grade level of the post and in preparing the vacancy notice.

Part I. GENERAL DATA

1. This job description is being submitted for the purpose of:

- a) Requesting a review of the classification
- b) Issuing a vacancy announcement
- c) Re-describing the duties of an existing post
- d) Other (please explain): **Cost Free Expert (CFE)**

2. Location of post:

- a) Department **Safeguards**
- b) Division **Safeguards Information Technology**
- c) Section **ISIS Re-engineering Project (IRP)**
- d) Unit

3. Functional title and current grade of post: **Change Control Expert, P-5 (CFE)**

CCOG code:

4. Present incumbent's name:

Former incumbent's name:

If new post, please indicate
date of establishment:

5. Incumbent's supervisor

- a) Name **Livio Costantini**
- b) Functional title **IRP Project Manager**
- c) Grade **P-5**

6. Date post was last reviewed:

7. List the major changes in the duties of the post which have taken place since the last review. Note that existing posts will not be reviewed for reclassification purposes unless the duties and responsibilities have changed substantially since the current grading of the post was established and appear to be of a lasting nature. For reclassification procedures please refer to AM II/3, paragraphs 31-34.

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8. Please show under this item the organizational structure of the Division. This can be done easily by inserting in the blank boxes the appropriate information. The "organizational" chart should show specifically (a) where the post is located in the hierarchy of the Department, (b) who reports to the post holder, (c) to whom the post holder reports.

Department level: **Safeguards**

Division level: **Safeguards Information Technology**

Section level: **Project Head (P5) IRP**

Unit level: **Incumbent**

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9. If applicable, please list characteristic quantitative data relevant to the post. For example, in the case of an Editor, the number of pages edited may be of relevance for determining time spent on a task.

The incumbent ensures an optimal Configuration Management framework is in place for the IAEA Safeguards Information System (ISIS) Re-engineering Project (IRP) and all changes to products are managed efficiently and reflected in the contract with the prime supplier.

ISIS is a multi-platform combination of applications that supports core Safeguards activities. ISIS has applications that are currently maintained on two architectures, mainframe and client-server (i.e. LAN). The mainframe applications (accounting, inspection reporting and safeguards management) are written in Natural with an ADABAS database engine and have been developed over the last twenty years, whereas the client-server applications (EMIS, SPRICS, IRIS, DSS, IDP-Tracking, etc.) are SQL Server database applications that have been developed more recently. The mainframe-based parts of ISIS are made up of over 10,000 objects (modules and maps) and process an average of 20,000 transactions a day against databases made up of 200 tables holding over 30 million records.

About 900 NMA printouts are provided to the Inspectorate and other Safeguards Divisions on a monthly basis from a database containing more than 24 million records as of the end of 2000 and increasing at about 10 percent per year. Approximately 17000 foreign transactions declared by shippers and receivers are matched each year.

State declared information is also received and processed under the Additional Protocol to safeguards agreements, with a minimum of 12 protocol declarations expected each year from each states subject to the protocol. A database is

maintained comprising several thousands records submitted by Member States that participate in the Reporting Scheme. A database is also maintained which currently comprises 350 state confirmed incidents of illicit trafficking in nuclear materials and other radioactive sources. In addition, a database currently comprising several hundred of records is maintained for State reports concerning neptunium and americium.

The IRP is a high-risk project. Failure to deliver is not an acceptable option and a great deal of future functionality required to support future Safeguards activity, such as open source, additional protocols, Nuclear Material Accountancy and other important activities performed in the Department of Safeguards will depend on the success of the IRP. The IRP plan estimates that the project will cost over \$29 million for equipment, software and contracts over a 3-4 year period. IRP is an umbrella project and it will involve over 35 separate sub-projects with a significant degree of parallelism. Current human resource estimates show approximately 86 person years of work to be carried out by the contractor and 79 person years of work by shared IAEA resources, working together in combined project teams.

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10. What are the main purposes (objectives) of the post? (Overall role/functions of the post with stress being placed on the more important aspects.)

Under the general supervision of the Project Head, the incumbent is responsible for the IRP Change Control and Configuration Management. The control of change means the assessment of the impact of potential changes to items under Configuration Management, their importance, their cost and a judgement decision by the incumbent in collaboration with the members of the Change Control Board on whether to include them in the IRP project or not. Specifically,

- Establish the CM infrastructure and environment
- Ensures developers and integrators have the appropriate tools to build and to test their work
- Facilitates product review, change and defect tracking activities
- Writes the Configuration Management Plan
- Reports “change request” based progress activities
- Administer change control
- Administer change control board meetings
- Update affected documents
- Negotiate with contractors on the contractual implications of changes

As member of the Technical Advisory Group, the incumbent provides guidance and assists the Project Board in the evaluation of the technical aspects of the project.

Part II. JOB DESCRIPTION

Guidelines for Preparation:

This form is intended to obtain information about the job and not about the individual who may occupy the job, although it may be difficult to separate the job from the incumbent. Supervisors should ensure that the form describes the characteristics of the job that needs to be done and not the characteristics of the person doing the job. It is suggested that the description of each major duty begin with an action verb.

READ THROUGH THE ENTIRE FORM BEFORE STARTING TO COMPLETE IT

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1. Summarize the major duties and responsibilities of the position in order of importance and indicate in the margin the percentage of time spent on each (most jobs contain no

more than 5 or 6 major responsibilities). First state what is being done, then how it is being done.

% of time: Duty/responsibility:

70%

Configuration and Change Request Management

- Drafts the Configuration Management Plan
- Defines how project/product artifacts are to be named, marked and numbered, and oversees implementation of the identification scheme. The identification scheme covers hardware, system software, COTS products and all application development artifacts (e.g. plans, models, components, test software, results and data, executables, etc.).
- Defines and verifies at what points during the project/product lifecycle baselines (baselines provide an official standard on which subsequent work is based, and to which only authorized changes are made) are to be established.
- Defines and monitors the process by which problems and changes are submitted, reviewed and disposed.
- Defines the membership and procedures for processing change requests and approvals to be followed by the Change Control Board.
- Defines the content, format and purpose of the requested reports and configuration audits and oversees their execution.
- Drafts retention policies, and the back-up, disaster and recovery plans.
- Maintains official records of all change requests.
- Assesses the impact of changes on all project dimensions and recommends required actions.
- Documents the actions and monitors their execution up to, and including, confirming their completion.
- Reports on status of change requests and progress of actions.
- Recommends tools for building and testing work activities and ensures they are properly used.
- Monitors process efficiency by ensuring that the bureaucratic overhead associated with the Configuration and Change Request Management process is consistent with the maturity of the product.

30%

Technical Advisory

- Ensures that realistic estimates of costs, timescales and resource requirements are submitted to the Project Board for approval.
- Supports the Project Board in reviewing the progress of the project and preparing special reports on the status of the project.
- Provides technical advice to the Project Board and the Project Head as required
- Participates in the selection of the contractor, evaluation of the bids and the negotiations with the short listed supplier(s)
- Reviews and analyzes the project implementation plan, all end-users requirements and the proposed solutions, to identify potential issues.

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2. What are the minimum knowledge requirements of the job? (These need not be equivalent to those of the present incumbent.)

Level and field of study of university degree (or the equivalent acquired through training or self-study)

University degree in computer science, or equivalent certified knowledge acquired through practical experience in developing and managing large information systems and with training in project management and configuration management.

Minimum length and type of practical experience required:

Essential:

At least 15 years experience in the development and management of major information systems with a minimum of 5 years of recent experience in outsourcing and project, budget, and human resources, management.

Extensive experience in the management of several major IS development projects of varied nature.

Comprehensive knowledge of relevant development life cycles, project management practices, configuration management activities, human resources and financial management, and ability to apply this knowledge to achieve the project goals.

Good knowledge of different hardware and software platforms and ability to identify impact of architectural choices on development, integration, and maintenance.

Good knowledge of Safeguards' policy framework, management structures, principles and reporting procedures.

Knowledge of ISIS is an asset.

Demonstrated experience in chairing technical and decisional meetings, and ability to streamline reporting for senior management.

Demonstrated ability to exercise diplomatic and prudent judgement on sensitive issues.

Desirable:

Knowledge of CMM framework and its implementation in the Safeguards department.

- at national level

10 years experience in the development and management of complex computer systems. Extensive experience with software

configuration management procedures.

- at international level

5 years experience in the development and management of large information systems. 5 years recent experience in configuration management and outsourcing.

Language(s):

- proficiency required

Fluency in English essential.

Demonstrated ability to produce reports in technical English.

- other languages preferred

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3. Work Role: What does the job require the incumbent to do (i.e. describe the analysis, interpretation, adaptation, innovation, planning, co-ordination, and directing that the job requires)?

The incumbent must arbitrate between users requesting changes to system requirements documents, and the contractors and in-house staff developing the systems. The negotiation must take into account the possible delays and cost increases that such changes will incur, versus the essentiality of the request. The incumbent must work with the change control board(s) for the project(s), to ensure priorities are established and development guidelines followed.

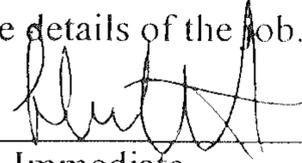
-
4. What subject matter (diversity of work) does the job cover and what is the depth of treatment of the subject matter?

- **Thorough understanding of vendor contracts and their legal framework.**
- **Practical knowledge of management practices of large software implementation projects.**
- **Expertise in the implementation of configuration and change requests management practices.**
- **Working knowledge of enterprise data modelling.**
- **Working experience in documenting detailed and complex functional requirements and design specifications for large information processing systems.**
- **Knowledge of Safeguards policies, standards and procedures.**

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5. Describe the control exercised or guidance given by the supervisor in terms of planning, controlling and reviewing the incumbent's work, e.g. how often do you meet, how are priorities handled, how is work achieved, how are instructions given.

The supervisor develops an annual work plan with the incumbent. This schedule is tied to the overall project plan. The incumbent meets with the supervisor as needed, but at least monthly to review results achieved, milestones reached, future milestones and deviations from the plan. The incumbent is responsible for establishing priorities within his area of competence. Instructions are given either orally, via e-mail or written, depending on the importance of establishing an audit trail.

This is an accurate and complete description of the details of the job.

_____	_____		<u>23/06/04</u>
Incumbent	Date	Immediate Supervisor	Date

Printed name: _____

Printed Name: L. Costantini

	<u>040628</u>
Division Director	Date

Printed name: D. Schriefer

<u>A. Baute-Wiles</u>	<u>040629</u>
Administrative Officer	Date

Printed Name: A. Baute-Wiles

(Personnel - JD/P Apr. 1998)