



FUSION FOR ENERGY

The European Joint Undertaking for ITER and the Development of Fusion Energy

THE GOVERNING BOARD

DECISION BY THE GOVERNING BOARD OF THE EUROPEAN JOINT UNDERTAKING FOR ITER AND THE DEVELOPMENT OF FUSION ENERGY APPROVING A REPORT ON THE STAFFING NEEDS OF FUSION FOR ENERGY

THE GOVERNING BOARD OF THE EUROPEAN JOINT UNDERTAKING FOR ITER
AND THE DEVELOPMENT OF FUSION ENERGY,

Having regard to the Statutes annexed to the Council Decision (Euratom) No 198/2007¹ of 27 March 2007 establishing the European Joint Undertaking for ITER and the Development of Fusion Energy (hereinafter "Fusion for Energy") and conferring advantages upon it,

Whereas:

- (1) The Governing Board, during its fourth meeting on 18 December 2008, requested the Director to provide a detailed report of the staffing needs of Fusion for Energy and that an ad-hoc group composed of the Chairs and Vice-Chairs of the Fusion for Energy instances examine this report,
- (2) On the basis of the report provided by the Director and the assessment of that report by the ad hoc group, the Governing Board at its meeting of 18 March 2008 invited the Director to prepare a revised version of the report for approval at the next Board meeting,

HAS ADOPTED THIS DECISION:

Article 1

The annexed report on the staffing needs of Fusion for Energy is hereby endorsed.

Article 2

This Decision shall have immediate effect.

Done at Barcelona, 8 July 2008

For the Governing Board

Carlos Varandas
Chair of the Governing Board

¹ OJ L90, 30.03.2007, p. 58.



REPORT ON THE STAFFING NEEDS OF FUSION FOR ENERGY

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A. Introduction

At its meeting of 18 December 2007, the Governing Board decided that an ad-hoc group comprising the Chairs and Vice-Chairs of the Fusion for Energy's (F4E) Governing Board, Executive Committee and Technical Advisory Panel be constituted to examine the staffing needs of F4E and report back to the Board.

On the basis of a report provided by the Director and the assessment of that report by the ad hoc group, the Governing Board, at its meeting of 18 March 2008, invited the Director to prepare a revised version of the report for the next Board meeting.

The report of the Staffing Needs will serve as the basis for the planning of the staffing requests of the Joint Undertaking and may be reviewed as necessary in the future.

1. MISSION AND ACTIVITIES OF THE JOINT UNDERTAKING

The European Joint Undertaking for ITER and the Development of Fusion Energy (Fusion for Energy) is a Joint Undertaking created under the Euratom Treaty by a decision of the Council of Ministers of the European Union.

Fusion for Energy is established for a period of 35 years from 19th April 2007 and is located in Barcelona, Spain. The organisation has the following Members:

- Euratom, represented by the European Commission;
- the Member States of Euratom;
- third countries which have concluded cooperation agreements with Euratom in fusion that associate their respective research programmes with the Euratom programmes and which have expressed their wish to become Members.

The current Members are therefore the 27 Member States of the European Union, Euratom and Switzerland as a third country. Each Member sits in the Governing Board – the main body which supervises the Joint Undertaking.

The tasks of the Joint Undertaking are as follows as foreseen in the Statutes:

In relation to ITER:

- (a) to oversee preparation of the ITER project site;
- (b) to provide components, equipment, materials and other resources to the ITER Organisation;
- (c) to manage procurement arrangements vis-à-vis the ITER Organisation and, in particular, associated quality assurance procedures;
- (d) to prepare and coordinate Euratom's participation in the scientific and technical exploitation of the ITER Project;
- (e) to coordinate scientific and technological research and development activities in support of Euratom's contribution to the ITER Organisation;
- (f) to provide Euratom's financial contribution to the ITER Organisation;

- (g) to arrange to make human resources available for the ITER Organisation;
- (h) to interface with the ITER Organisation and carry out any other activities in furtherance of the ITER Agreement;

In relation to the Broader Approach:

- (i) to provide components, equipment, materials and other resources for Broader Approach Activities;
- (j) to prepare and coordinate Euratom's participation in the implementation of Broader Approach Activities;
- (k) to coordinate scientific and technological research and development activities;
- (l) to provide the Euratom financial contribution to Broader Approach Activities;
- (m) to arrange to make human resources available for Broader Approach Activities;
- (n) to carry out any other activities necessary for meeting Euratom obligations in furtherance of the Broader Approach Agreement with Japan.

In relation to DEMO:

- (o) to prepare and coordinate a programme of research, development and design activities other than ITER and Broader Approach Activities, in preparation for the construction of a demonstration fusion reactor and related facilities, including the IFMIF;

Other:

- (p) to carry out any other activities in furtherance of its overall objectives, including activities to raise public awareness of the Joint Undertaking and its mission.

2. FRAMEWORK FOR THE STAFFING OF THE JOINT UNDERTAKING

The staff allocation ("Establishment Plan") of F4E is adopted annually, together with the budget. The Establishment Plan sets the number of posts for each grade in each category and the number of permanent and temporary posts authorised within the limits of the budget appropriations.

Following the adoption of the Resources Estimate Plan by the Governing Board, the Commission includes the F4E budget and establishment plan for the following year in the draft Community budget, which is afterwards adopted by the Budgetary Authority of the European Communities (Council and Parliament).

The Establishment Plan, together with the budget, is proposed by the Director to the Governing Board on the basis of the Resources Estimate Plan of the year before and becomes definite after adoption of the budget by the Governing Board and the adoption of the Community Budget by the budgetary authority.

For 2008, the procedure has now been completed.

For 2009, the Governing Board has adopted the Resource Estimates Plan which indicates Fusion for Energy's estimated needs for 2009, including its Establishment Plan (Annex I: Establishment Plans for 2008 and 2009).



3. TYPES OF PERSONNEL

As a Community body applying the Staff Regulations and the Conditions of Employment of Other Servants of the European Communities, the Joint Undertaking can employ the following personnel: Permanent Officials, Temporary Agents, and Contract Agents.

Permanent Officials and Temporary Agents are divided into two broad categories; AD (Administrators) and AST (Assistants). For the purpose of this report, both of these categories are considered as professionals. The number of authorised posts for Permanent Officials and Temporary Agents is set out and limited in the Establishment Plan.

It is important to note that, although in other Community bodies the amount of high level and specialised staff is limited, it is extremely important to allow Fusion for Energy to employ a sufficient number of senior and experienced staff with important scientific and technical expertise in fusion development, as well as in the management of such scientific and technological projects. As a consequence, Fusion for Energy will have to be able to offer contracts and positions corresponding to the high level expertise required in order to be able to attract the appropriate candidates, in particular those coming from industry.

Contract Agents are support staff hired by the Joint Undertaking, within the limits of the budgetary resources allocated for this purpose in its budget, to exercise secretarial and other support activities. Therefore, Contract staff does not figure in the "Establishment Plan".

In addition, the Joint Undertaking has the possibility of using Seconded National Experts, on the basis of the rules adopted by the Governing Board at its meeting of October 2007. Seconded National Experts are not directly employed by the Joint Undertaking and they are therefore not considered staff of the Joint Undertaking. Therefore, Seconded National Experts do not figure in the "Establishment Plan". Their number is only limited in terms of the overall budget envelope shared with Contract agents.

4. BASIC SCENARIOS AND ASSUMPTIONS

When considering the technical staffing needs for the F4E, theoretically two main scenarios can be envisaged:

Scenario 1:

The technical follow-up of ITER-related contracts is limited to periodic reporting (ITER Field Teams have a strong role in this scenario), and there is no direct involvement of F4E in Broader Approach (BA) projects beyond coordination of the work conducted mostly by the Voluntary Contributors.

Scenario 2:

The technical follow-up of ITER-related contracts is fully undertaken by F4E (the ITER Field Teams have a weak role in this scenario), and there is an establishment of a dedicated structure as to what concerns the EU contribution to JT-60SA.

These two scenarios are consistent with the common understandings on ITER procurement agreed by the parties, as well as on BA procurement.

NB: The situation closer to reality, as resulting from the experience of implementation of the ITER project up to present date, is scenario 2 (where a strong DA involvement is foreseen) while scenario 1 is briefly commented in the final table summarising the needs of the ITER Department.

It should be noted that this Report is based on the current status of ITER (regarding its structure, programming, design, etc.) and the information available at this stage. Depending on the progress of ITER these scenarios are subject to change.

Considering the responsibilities assumed by F4E in discharging Euratom's obligations under the ITER and BA Agreements, F4E is responsible to its Governing Board for the work it contracts. It must therefore be in a position to exert these responsibilities and to that effect must "attract specialised scientific and technical staff of the highest calibre²" commensurate with its responsibilities. Experience from procurement in large public procurement institutions, including at CERN and JET, has demonstrated that to minimise risks of cost increases and delays, the provision of an adequate number of qualified staff for the technical and administrative follow up of contracts is necessary and essential. Furthermore, this will also be beneficial in the medium to long term since the personnel costs are relatively low in comparison to the cost of industrial contracts that their expertise will help reduce.

In the present analysis and considering the spread of expertise in the Fusion Community, it is assumed that consortia will be formed to deal with large share of R&D work, allowing F4E to exert a high level monitoring function consistent with its responsibilities.

It is further anticipated that the ITER Organization (IO) will delegate the Domestic Agencies' (DA) responsibilities to contract out major design activities also in the case of "build-to-print" components. The proposed staffing plan may accommodate this request in the interest of the ITER Project, if it is assumed that:

- EU research organisations can provide a significant design and R&D contribution in particular in the areas of diagnostics, TBM and Heating & Current Drive (CD).
- Engineering Design Contracts are placed with specialised economic operators to support F4E in the preparation of design and technical specifications.

In the case that the main assumptions given above are not true, the staffing level in both the following scenarios will have to be revisited and reinforced accordingly.

In particular if the Associates can not provide the expected support, Fusion for Energy will require an estimated additional number of 100 professionals.

In addition, this assessment assumes that F4E will not be in charge of the transportation of the ITER components (both the EU ones and those manufactured by the partners) to the ITER site. If this task, instead of being carried out by IO, will be assigned to F4E, the staff will need to be increased accordingly.

On the basis of the above, F4E will:

- act as the Contracting Agency for all in-kind procurements within the scope of EU contribution to the ITER project, utilizing technical specifications approved by the ITER

² Cf. whereas (15) of the Council Decision establishing the European Joint Undertaking for ITER

IO and when appropriate prepared with the support of the F4E or, in some cases, developing technical specifications based on general functional requirements from ITER;

- have a minimum technical involvement in the 10% of EU procurement to be allocated to Japan, and it is equally assumed that this will be under the clear technical and financial responsibility of the Japanese counterpart (Japan assuming the full responsibility vis-à-vis ITER as any other Japan in-kind contribution);
- contract out design and R&D activities to research organisations or economic operators for the development of parts of the EU in-kind contribution to ITER that still require development to reach the level in which technical specifications can be written and hence approved by the ITER IO;
- be the interface for all EU procurements with the French Safety authorities' inspectors supervising the manufacturing and testing of components according to the agreed Quality Assurance (QA) and Quality Control (QC) procedures;
- provide technical support for all aspects related to the follow-up and monitoring of the implementation of the agreements between Euratom and France or the ITER France Agency for the discharge of obligations relative to site preparation and site support, as well as supporting Euratom where necessary in its participation as a party to the ITER Agreement;
- conclude technology activities launched previously under EFDA;
- assume full responsibility for the technical and administrative follow-up of F4E Contracts, assuming that relevant support to the technical follow-up can be provided by research organisations or economic operators.

In addition, the following assumptions have also been made:

- in the first years (2008 to 2012 on the basis of the Project Plan and also depending on the final approved ITER schedule) R&D activities in support of the preparation of the technical specifications are still needed;
- in 2012 (depending on the final ITER schedule) and on the basis of the Project Plan the R&D activities will decrease and the number of fabrication contracts will increase;
- all EU in-fund contributions shall be directly managed by the ITER Organization for all technical aspects and no human resources will be allocated by F4E in these areas.

NB: These basic assumptions are similar to those drafted in the previous Report of the ELE Preparatory Group on the staffing needs (see Annex II). Furthermore, the outcome of that same Report has been taken into account to prepare this present document. The overall figures remain similar in both reports although they are now presented in a more detailed way and are adapted to the current situation of the ITER project.

5. DETAILED ANALYSIS OF TECHNICAL STAFFING NEEDS

F4E foresees a management structure encompassing roles and functions and involving at each stage a link between the operational departments for ITER and Broader Approach and the service departments for Contracts and Procurement and Resources.

For each component, the organisation will identify a Technical Responsible Officer (TRO) and a Procurement Responsible Officer (PRO), responsible to establish and discuss at working level the Procurement arrangement (PA) with ITER IO and to define the Procurement Strategy (PS) related to the in-kind contribution of the said Procurement Arrangement, both to be approved by F4E management.

In this process, the TRO and the PRO will be assisted by specialists in matters concerning Quality Assurance, Quality Control, Configuration Control, Safety, Legal, Intellectual Property Rights, Financial and other functions as appropriate.

Against this background, the following structure has been proposed by the F4E management as the basis to justify its Resource Estimates Plan.

6. ORGANISATIONAL STRUCTURE

The basic Organisational Structure of F4E was approved by the Governing Board for which the detailed version is shown in fig. 1 below.

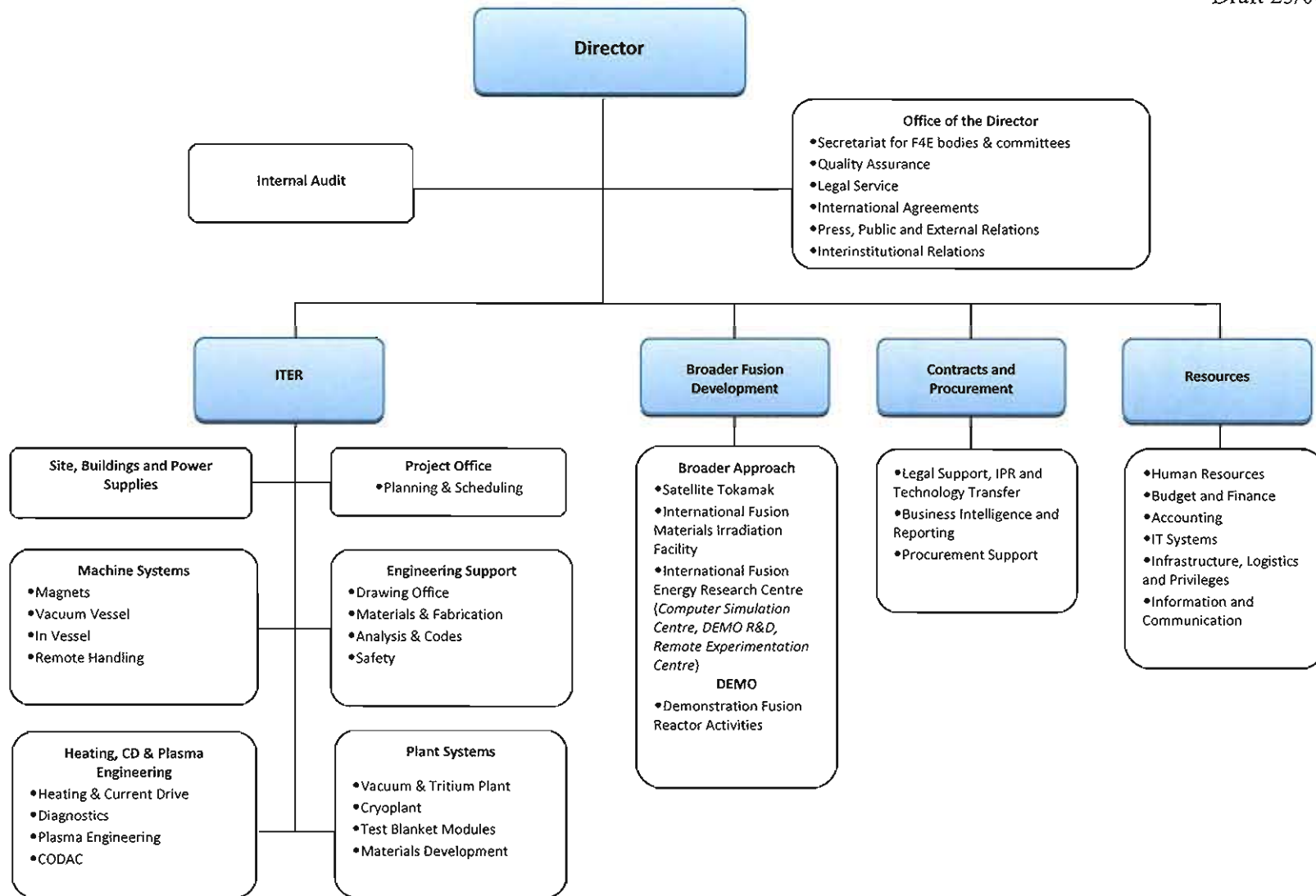


Fig.1 – F4E Organisational Structure

B. The ITER Department

The ITER Department provides the core technical functions for the procurement of the items and services that form the European in-kind contribution to ITER. The main areas for which a core of expertise is necessary to adequately prepare and follow up the procurements are:

- Site and Buildings
- Magnets
- Vacuum Vessel
- In-Vessel
- Vacuum & Tritium Plant
- Cryoplant
- Test Blanket Modules
- Remote Handling
- Heating & Current Drive Systems
- Diagnostics
- Safety

The Head of Department is assisted in his functions by the Project Office with expertise in the areas of project management, configuration control, QA, planning and scheduling. In addition, the function of component costing is conducted in close consultation with the Contract and Procurement Department, while the QA function is coordinated with the QA function assumed by the Office of the Director.

In addition, an Engineering Support Division will provide assistance to address issues of design changes and non conformities during the fabrication phase. This function is intended to facilitate F4E negotiations with regard to ITER and with research organisations and economic operators as concerns the technical and economical aspects of the contracts.

The main functions of the ITER Department are to:

- negotiate with ITER, in conjunction with the Contracts and Procurement and Department, the technical content of the Procurement Arrangement;
- negotiate with ITER the need and credit for additional design support for reaching the Build-to-Print level for relevant components;
- analyse designs from a risk assessment point of view to identify modifications that could provide cost savings or lead to a reduction of the risk;
- support ITER in the preparation of the technical specifications of the “build-to-print” components, and review ITER specifications for consistency with the original content of the Procurement Arrangements;
- prepare Design and R&D specifications for the development of parts of EU in-kind contribution to ITER at Functional Specification level which still require development to reach the point at which technical specification can be written;
- provide input to the Contracts and Procurement Department on cost estimates, commitments and cash flow for the contracting of all the activities related to the Procurement Arrangements;



- assist the Contracts and Procurement Department in;
 - performing market review and suppliers selection;
 - issuing tenders or calls for proposals, reviewing and evaluating offers, negotiating and proposing adjudication of contracts;
 - evaluating over costs due to design changes and non-conformities;
- provide technical follow-up of contracts;
- provide QA support in all ITER-related activities, and follow the technical evolution of the procurements according to procedures agreed with ITER.
- liaise with the ITER Organization and the suppliers to continuously check the configuration of the item as well as the interfaces among work packages in the same PA;
- monitor the scheduling of the different procurements and their interaction with the overall ITER and site schedule;
- provide periodic reporting on the status of advancement of projects, and, together with the Contracts and Procurement Department and the Resources Department, earned value, budgetary updates and forecast;
- provide technical support to Euratom (represented by the European Commission) in the ITER Council;
- initiate commitments and payments in the financial circuit of F4E as to what concerns ITER;
- approve the closure of contracts in collaboration with the Contracts and Procurement Department;
- continue the follow-up, until completion, of the technology contracts launched previously under EFDA;
- Support the Resources Department in the preparation and organisation of awareness raising events and other public/press related activities.

Based on a description of the work to be performed by each structure and on the current assumptions for the timing of ITER in kind procurement the complement of staff is provided for the period 2008-2012.

The personnel required in the next years is following the development of contractual activities. The profile of demand relies on available staffing arrangements (established officials, temporary agent contracts, national experts, support staff contracts and outsourcing of services in order to minimise F4E personnel once the ITER construction activities are completed.

It should be underlined that some of the F4E personnel might provide, at the end of the construction, direct support to the ITER Organization for installation and commissioning on site and, later, operation and maintenance. Some other staff might be used by F4E in activities linked to the obligations for the development of a programme of activities in support of DEMO).

The staffing profile reaches a peak in each of the different areas according to the time when the manufacturing of the components takes place. The resources needed for the follow up of such contracts is assumed to be outsourced in most cases to research organisations and , still guaranteeing F4E's ability to monitor such outsourced activities.

In order to be able to ensure an appropriate follow-up of the progress of technical activities of industrial contracts, it may be necessary to outsource some of this technical follow-up, to avoid, in particular, hiring F4E personnel that will not be needed once the ITER construction phase is completed.

The staffing needs of the ITER Department are summarized in Table I. The number of staff has been calculated by taking into account the F4E activities in the ITER Department and considering that a single person cannot be allocated contemporarily to more than 4 activities.

Table II indicates the value of the budget that a staff member will have to manage for each area, both for grants and procurements.

The ITER Department will undertake the responsibility of a full technical follow-up of contracts with the exception of the follow-up for construction on site (made through A/E), including buildings, power supplies, water cooling systems.

It is also assumed that System Integration is the responsibility of the ITER International Organisation and therefore only 1 person is foreseen in F4E to follow this task. Moreover, in the ITER Department no planning has currently been foreseen towards ITER Operation, which is at the time a task under EFDA. If the present situation evolves it will imply an increase in the number of required F4E staff linked to these tasks.

The list of the total EU contribution to the ITER procurement allocation, as agreed during the ITER negotiations, is presented in Table III.

Finally, Table IV provides an indicative list of the Procurement Arrangements to be launched during the period 2008-2012, while Table V shows an indicative list of the contracts due to be awarded during the period 2008-2012.

It is currently estimated that the whole EU contribution to ITER will require a total of approximately 220 contracts. Amongst those, 130 are expected to be for in-kind procurement of systems and components and about 90 are expected to be for service contracts (to provide engineering support and supervision during construction). The value of the procurement contracts is expected to be in the range of 2 M€ to 60 M€ (12 M€ in average). The value of service contracts is expected to be approximately in average 2 M€.

Some specific services such as QA, engineering analysis and CAD services, should be partly outsourced and are not considered in the detailed tables.

1. Project Office

1.1 Specific Assumptions

This structure will be mainly in charge of monitoring the conformity of the procured components (both during design and manufacture) with the ITER interfaces for technical and schedule baseline, applying the QA procedures agreed with ITER and the French Safety authorities. It will closely interact with the Contracts and Procurement Department as to what concerns overall cost of the EU contribution in-kind and in cash to ITER.

1.2 Specific Functions

The specific functions of the Project Office structure are to:

- provide support in the preparation of the Procurement Arrangements and supervise, monitor and guarantee the integration among Workpackages belonging to the same PA;
- liaise with both the ITER Organization and the TROs and PROs in F4E on issues concerning the technical, cost and scheduling baseline;
- provide support and coordinate the preparation of documents, such as monitoring reports, and contribute to the Work Programme and Project Plan;
- liaise with ITER on the transportation and logistics of EU components;
- coordinate the storage and the workflow of the ITER-related documents (i.e. specifications, CAD models and drawings, input from suppliers, etc.) inside F4E according to Quality Assurance requirements;
- establish and maintain planning and scheduling for ITER construction and operation, and provide support to the planning and scheduling of Broader Approach activities;
- provide support in the update of the F4E Industrial database and of the main F4E technical document storage system;
- provide support to the whole ITER Department on QA-related activities, in collaboration with the Office of the Director;
- provide support to the Head of Department in the preparation of specific documents and presentations.

2. Site and Buildings

2.1 Specific Assumptions

For all aspects related to Site Construction and Buildings, an Architect Engineer (A/E) shall be contracted (as part of the EU in-kind contribution) and shall report for all technical matters to ITER. Therefore, all functions of interface with the various companies actually performing the construction and the monitoring of the work on site are completely assigned to the A/E and F4E retains only a periodic, high level monitoring of advancement of works. Furthermore, detailed functions of planning, detailed budgeting and periodic reporting are left to the A/E.

The A/E shall also take care of all aspects of interfacing the CAD systems of the individual suppliers, in civil engineering area.

The development of the actual Neutral Beam (NB) power supplies shall be done within the contracts for the development of the Neutral Beam Test Facility and thus only monitoring shall be required for this specific part. The activities related to the power supplies of the Heating Systems will be dealt with inside the corresponding Division.

All activities relative to the low voltage distribution in the ITER complex building can be specified in detail and contracted by the A/E.

2.2 Specific Functions

The specific functions of the Site and Buildings structure are to:

- perform a high level monitoring of the construction activities on site by directly managing the A/E contract;
- interface with the ITER Organisation for all issues concerning the site;
- in association with the Contracts and Procurement Department, negotiate with the ITER Host country organization the exact sharing of activities between Europe and the Host country;
- provide support to the Commission on the relationship with the Host country in relation to the implementation of its obligations (follow-up, contentious situations etc.);

2.3 Number and value of estimated large contracts

Site and Buildings: according to the ITER Agreement, the estimated value of contracts will reach approximately 800 M€ during the period 2008 – 2012.

Power Supplies: the value of contracts will reach approximately 1 M€ for grants and an approximate value of 40 M€ for procurements during the period 2008 – 2012.

The demand of staffing is foreseen to reach its peak in 2009.

3. Machine System Division

3.1. Magnets

3.1.1 Specific Assumptions

It is assumed that the Magnets structure shall have the duty to implement a certain number of R&D activities for the development of magnet technology in the EU at a level comparable with EFDA effort.

It is also assumed that the structure shall resort to contracts with qualified research organisations or economic operators in the area of superconductivity for testing, Quality Control and production monitoring and follow-up.

Finally, it is assumed that the structure shall resort to contracts with qualified research organisations or economic operators to provide support to the ITER IO for the completion of design and technical specifications as needed. The number of personnel will reach its peak in 2009.

3.1.2 Specific Functions

The specific function of the Magnets structure is to maintain a base level of expertise on Magnets Technology for Fusion by contracting R&D activities with research organisations or economic operators and following up their implementation (continuity with EFDA activities), and directly manage the ITER in-kind contributions in this area.

3.1.3 Number and value of estimated large fabrication contracts

Magnets: the value of contracts will reach approximately 2 M€ for grants and an approximate value of 450 M€ for procurements during the period 2008 – 2012.

3.2. Vacuum Vessel

3.2.1 Specific Assumptions

The Vacuum Vessel structure shall have the duty to implement a certain number of R&D activities for the development of this technology in the EU.

It is also assumed that the structure shall resort to contracts with qualified research organisations or economic operators to provide support to the ITER IO for the completion of design and technical specifications as needed. The number of personnel will reach its peak in 2010.

3.2.2 Specific Functions

The specific function of the Vacuum Vessel structure is to maintain a base level of expertise on this technology (continuity with EFDA activities) necessary for the in kind procurements, and directly manage the ITER in-kind contribution in this area.

3.2.3 Number and value of estimated large fabrication contracts

The value of contracts will reach approximately 5 M€ for grants and an approximate value of 230 M€ for procurements during the period 2008 – 2012.

3.3. In Vessel

3.3.1 Specific Assumptions

It is assumed that the In Vessel structure shall implement a certain number of R&D activities for the development of high heat flux components technology in the EU. It is also assumed that the structure shall resort to contracts with qualified EU research organisations or economic operators to provide support to the ITER IO for the completion of design and technical specifications as needed. The number of personnel will be at its highest in 2013.

3.3.2 Specific Functions

The specific function of the In Vessel structure is to maintain a base level of expertise on high heat flux components technology (continuity with EFDA activities) necessary for the in kind procurements, and directly manage the ITER in-kind contribution in this area.

3.3.3 Number and value of estimated large fabrication contracts

The value of contracts will reach approximately 6 M€ for grants and an approximate value of 190 M€ for procurements during the period 2008-2012.

3.3. Remote Handling

3.3.1 Specific Assumptions:

It is assumed that the Remote Handling (RH) structure shall resort to contracts with qualified EU laboratories and industries to provide support to the ITER IO for the completion of design and technical specifications as needed. The number of personnel will be at its highest in 2011.

3.3.2 Specific Functions

The specific function of the Remote Handling structure is to provide a continuous effort throughout ITER construction in order to provide reliable procedures and tools. As such, the continuity of activities undertaken in the past by the Commission and EFDA in relation to the development of the Remote Handling structure is necessary and has to be guaranteed.

There is a strong probability that specialized design and R&D will be provided by EU research organisations or economic operators in this area, and as such the corresponding contracting and follow-up has to be provided by F4E.

3.3.3 Number and value of estimated large fabrication contracts

The value of contracts will reach approximately 10 M€ for grants and an approximate value of 70 M€ for procurements during the period 2008 – 2012.

4. Heating, Current Drive and Plasma Division

4.1 Heating & Current Drive

4.1.1 Specific Assumptions:

It is assumed that the Heating & CD structure shall undertake contracts with qualified EU research organisations or economic operators to provide support to the ITER IO for the completion of design and technical specifications as required.

It is also assumed that for all Heating Systems the detailed specifications shall be derived from design contracts placed with EU research organisations or economic operators. The number of personnel will be at its highest in 2009.

4.1.2 Specific Functions

The specific function of the Heating & CD structure is to ensure the continuity for activities of development in the Heating Systems area, which needs to be guaranteed. This area shall require continuing effort throughout ITER construction to reach reliable performance.

Specialized design and R&D activities are expected to be provided by EU research organisations or economic operators in this area; corresponding contracting and follow-up is also to be provided (NB Test Facility Bed and development of the Gyrotron Units).

4.1.3 Number and value of estimated large fabrication contracts

The value of contracts will reach approximately 30 M€ for grants and an approximate value of 200 M€ for procurements during the period 2008 – 2012.

4.2 Diagnostics

4.2.1 Specific Assumptions

It is assumed that for all diagnostics the detailed specifications shall be derived from design contracts placed with research organisations or economic operators. The number of personnel will be at its highest in 2009.

4.2.2 Specific Functions

The specific function of the Diagnostics structure is to ensure the continuity of activities of development of diagnostics, which has to be guaranteed. This area shall require continuous effort throughout ITER construction in order to reach reliable components and systems.

Specialized design and R&D activities are expected to be provided by the EU research organisations or economic operators in this area; corresponding contracting and follow-up is to be provided.

4.2.3 Number and value of estimated fabrication contracts

The value of contracts will reach approximately 40 M€ for grants and an approximate value of 30 M€ for procurements during the period 2008 – 2012.

4.3 Plasma Engineering

4.3.1. Specific Functions

The specific function of the Plasma Engineering structure is to ensure an effective interfacing with the ITER IO and to support the analysis of the implications of plasma scenarios and performance on the design and manufacturing of the EU in-kind components for ITER, in particular taking into account the ITER design review, a base level of plasma engineering expertise is required within F4E. As such, and in close cooperation with EFDA, F4E will contract design and R&D work with qualified research organisations and economic operators.

4.4 CODAC

A base level of activity in CODAC for interfacing with ITER function has to be attained, and in some cases subcontracting software development in the EU may be required.

The value of contracts will reach approximately 2 M€ for grants during the period 2008 – 2012.

5. Plant System Division

For the Vacuum, Tritium Plant and Cryoplant the value of contracts will reach approximately 5 M€ for grants and an approximate value of 170 M€ for procurements during the period 2008 – 2012. The actual construction of the equipment related to tritium management is relatively late in the ITER schedule, but the systems design has to be prepared early enough to ensure compatibility with buildings and safety requirements.

In what regards the Test Blanket Modules, the value of contracts will reach approximately 20 M€ for grants and an approximate value of 20 M€ for procurements during the period 2008-2012.

Finally, regarding Materials Development the value of contracts will reach approximately 10 M€ for grants and an approximate value of 10 M€ for procurements during the period 2008-2012.

5.1 Cryoplant

5.1.1 Specific Assumptions

It is assumed that this structure shall resort to contracts with qualified research organisations and economic operators and industries to provide support to the ITER IO for the completion of design and technical specifications as needed. The number of personnel will be at its highest in 2011.

5.1.2 Specific Functions

The specific function of the Cryoplant structure is to provide a direct management of the ITER in-kind contribution in this area. However, the specialised design activities are foreseen to be mostly outsourced to EU laboratories and industry, and in that case only follow-up will be provided on the corresponding contracts.

5.1.3 Number and value of estimated large fabrication contracts

Cf. supra.

5.2 Vacuum and Tritium Plant

5.2.1 Specific Assumptions

It is assumed that this structure shall resort to contracts with qualified research organisations and economic operators and industries to provide support to the ITER IO for the completion of design and technical specifications as needed.

It is also assumed that the detailed specification of the Tritium system shall be derived from design contracts placed with laboratories that may also act as main contractors for these highly-specialized systems. The number of personnel will be at its highest in 2011.

5.2.2 Specific Functions

The specific function of the Vacuum and Tritium Plant structure is to ensure the continuity of the development activities in the field of Vacuum and Tritium Technology. Specialised design activities are foreseen to be provided by research organisations and economic operators in this area and in that case only follow-up will be provided on the corresponding contracts. It is also to be noted that there will be a direct management from F4E of the ITER in-kind contribution in this area.

5.2.3 Number and value of estimated large fabrication contracts

Cf. supra.

5.3 Test Blanket Modules

5.3.1 Specific Assumptions

It is assumed that the structure shall resort to contracts with qualified EU research organisations and economic operators for the development of the design and for the follow up of the construction of Test Blanket Modules (TBM). The number of personnel will be at its highest in 2009.

5.3.2 Specific Functions

The specific function of the Test Blanket Modules structure is to contract design and R&D activities in support of the development of the design of the EU TBMs, at the level necessary to produce technical specifications and contracting the construction of EU TBMs. This activity is voluntary, carried out by the EU through F4E, as it is not included in the ITER IO scope of activities and therefore not credited by ITER.

It is therefore aimed to maintain a base level of expertise on breeding blanket technology (continuity with EFDA activities) necessary for in-kind procurements.

5.3.3 Number and value of estimated large fabrication contracts

Cf. Supra.

5.4 Materials Development

5.4.1 Specific Assumptions

It is assumed that the structure shall resort to contracts with qualified EU research organisations and economic operators.

5.4.2 Specific Functions

The specific function of the Materials Development structure is to ensure the R&D activities which are required, in particular, in support of the design of the EU TBMs. Like the Test Blanket Modules this activity is voluntary, not included in the ITER Organisation scope of activities and therefore not credited by ITER.

5.4.3 Number and value of estimated large fabrication contracts

Cf. supra.

6. Engineering Support Division

Engineering services provide a certain number of shared services, initially mainly to the ITER Department but later on also to the Broader Approach Department. The Engineering Support Division is a horizontal structure concentrating the general functions of these services in order to obtain a better usage of resources and avoid duplication.

It is noted that Engineering Services shall need a substantial IT support (the minimum requirement being one professional working full time), particularly for its CAD Office. This resource is not indicated here under point 6 as currently it is assumed to belong within the Resources Department.

6.1. CAD Office

6.1.1 Specific functions

The CAD Office shall provide support to all the ITER Project structures for the following activities:

- detailing of ITER drawings when necessary (e.g. production of 2D drawings from 3D models);
- management, verification, storage and workflow of all reference models/drawings received from ITER and from the suppliers;
- liaison with both ITER and suppliers on all matters concerning CAD data;
- storage of all manufacturing drawings as well as built drawings received from sub-suppliers;
- analysis of the implications of design modifications and/or non-conformities to support negotiations with suppliers and the ITER Organisation.

It is expected that the F4E CAD Office shall have a ‘front-end’ function vis-à-vis the contractors:

- receiving and transmitting CAD data from contractors in both CATIA format and native (if applicable);
- receiving and transmitting ITER CAD data in CATIA format;
- developing and documenting drawing standards and CAD rules that shall be used by all contractors;
- providing training/advice function to the contractors for CATIA v5 and ENOVIA-SMARTEAM PLM system.

6.2. Analyses and Codes

The Analyses and Codes structure shall contain the bulk of engineering competences of F4E. This structure, organised as a task force, shall perform the following functions:

- provide support for urgent decisions during manufacturing of components;
- provide support for non-conformance analyses together with the CAD Office;
- provide support for design revisions and cost-saving efforts.



6.2.1 Specific functions

This structure shall provide a rapid response analysis capability in all the main areas of competence for the design and verification of a tokamak device. It shall not surrogate design functions that are proper to the ITER IO nor shall it be involved in extensive verifications that can be contracted to specialized research organisations and economic operators.

Given the nature of the work a pool of the following expertise is expected:

- Structural Analysis;
- Thermohydraulics;
- Electromagnetic Analyses;
- Neutronics.

6.3. Materials and Fabrication

6.3.1 Specific functions

This structure shall centralize a certain number of specific technology expertises that are required both in the accurate follow-up and definition of R&D activities and during the revision of specifications, and quality control during fabrications.

Given the nature of the work a pool of the following expertise is expected:

- Brazing/Welding Technology;
- Vacuum Technology (leak testing methods, materials and design practice for Vacuum etc.);
- Advanced Materials for Fusion (ceramics, CFC);
- Mechanical Technology (Casting, Forging, Sintering, Large Components Machining, non-ferrous alloy metallurgy);
- Non destructive examination methods.

This structure can act as a pool of competence maintaining also a fusion-oriented R&D programme in the areas of competence.

6.4. Safety

6.4.1. Specific functions

It is assumed that licensing activities shall be completely moved to responsibility of the ITER IO. Therefore, this structure shall have has main function to contract the R&D activities and Safety Analyses that are still required during construction prior to the start of operations. It will also provide expertise on Safety regulations to be captured in relevant F4E contracts.

Table I– Assumed Professional Staff Needs

	2008	2009	2010	2011	2012
Heads Dpt/Divs, Coordination, QA	7	8	8	8	8
Project Office	8	10	11	11	11
Site & Build.					
Buildings	6	8	8	8	8
Power Supp.	2	3	3	3	3
Magnets	8	15	15	15	15
Vessel	5	7	10	10	10
In-Vessel	5	10	13	13	13
Remote Handling	6	9	9	9	9
Heating & CD	7	11	11	11	11
Diagnostics	8	13	13	13	13
Plasma Eng.	3	3	3	3	3
CODAC	1	2	2	2	2
Vacuum & Tritium	2	4	5	6	6
Cryoplant	4	4	4	5	5
Test Blanket	4	7	7	7	7
Material Dev.	1	2	2	2	2
CAD Office	1	1	2	2	2
Analyses & Codes	5	5	5	5	5
Materials and Fabrication	3	7	7	8	8
Safety	4	5	5	5	5
TOTAL	90	134	143	146	146

NB1: The additional requirements in relation to scenario 1 are about 15 persons for years 2011-2012

NB2: Overall growth profile to be adjusted according to the procurements schedule; an additional number of 15-20 support staff will be used.



Table II – Total Value Grants/Procurements vs Manpower

	Grants 2008-12 (mEuro)	Procurements 2008-12 (mEuro)	Total Manpower 2008-12 pmy	Managed Budget per staff member (mEuro/pmy)
Site & Buildings	0.6	838.1	52	16.1
Magnets	2.1	447.8	68	6.6
Vacuum Vessel	5	230.6	42	5.6
In-Vessel	5.8	189.6	54	3.6
Remote Handling	6.3	72.8	42	1.9
Heating & CD	32.5	195.5	51	4.5
Diagnostics	35.2	29.7	60	1.1
Plasma Engineering	3.6	3.5	15	0.5
CODAC	1.3	-	9	0.1
Vacuum & Tritium Plant	6.9	164.5	23	3.8
Cryoplant			22	
Test Blanket Modules	20.1	16.2	32	1.1
Material Development	15.5	3.7	9	2.1
Analyses & Codes	4.3	5.9	33	0.3
Safety	8.1	2.2	24	0.4

Table III - Total contribution of Euratom to ITER Procurement - Allocation / Direct Capital

Sharing ratio of in-kind procurements				kIUA	EU ³	JA ⁴	EU to JA ⁵	Fund ⁶	EU to Fund
1.1	Magnet	Toroidal Field Magnet windings	1A	85.20	100%				
			1B	82.30			100%	9.4%	7.736
		Toroidal Field Magnet Structure	2A	51.40	10%	5.140	90%	90%	46.260
			2B	47.70			100%	7%	3.101
		Magnet Supports	2C	22.85					
		Poloidal Field Magnet 1 & 6	3A	13.60	50%	6.800			
		Poloidal Field Magnet 2 to 5	3B	33.60	100%	33.600			
		Correction coils	3C	2.60					
		Central Solenoid magnet	4A	39.60					
			4B						
		Feeders	5A	26.15					
		Feeders sensors	5B	18.05					100%
		Toroidal Field Magnet Conductors	6A	215.00	20%	43.000	25%	10%	21.500
		Central Solenoid Magnet Conductors	6B	90.00			100%	100%	90.000
		Poloidal Field Magnet Conductors	6C	74.25	13%	9.653			
1.5	Vacuum vessel	Main Vessel including Blanket Manifolds and Hydraulic Connectors	1A	124.20	80%	99.360			
		Shielding	1B	37.30					
		Equatorial Ports	2A	24.50					
		Upper Ports	2B	22.10					
		Lower Ports	2C	31.91					
1.6	Blanket system	Blanket First Wall	1A	87.00	30%	26.100	10%	10%	8.700

EU contribution to Fund: Maximum of 46,45%

155,985

³ Percentage of the procurement package to be allocated to Euratom
⁴ Percentage of the procurement package to be allocated to Japan
⁵ Percentage of the procurement package to be transferred from Euratom to Japan
⁶ Percentage of the procurement package allocated to the ITER Organisation directly and paid through the common fund



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	Blanket Shield	1B	58.00	10%	5.800				
	Diagnostic First wall		8.50						100%
	Port Limiters	2	7.40						
	Blanket Module Connections	3	10.00						
1.7	Divertor	Cassette Integration	1	11.20	100%	11.200			
		Outer Target	2A	28.50			100%	0%	0.000
		Inner Target	2B	20.20	100%	20.200			
		Dome	2C	15.00					
		Plasma-Facing Component Tests	2D	8.00					
2.2	Machine Assembly	Assembly operation	1	50.30					100%
		Assembly Tooling 3-11	2A	22.00					
		Assembly Tooling 1-2,12-13	2B	20.40					100%
2.4	Cryostat	Cryostat Factory	1A	60.00					
		Cryostat Assembly	1B	17.00					
2.7	Thermal Shield	Thermal Shield		28.80					
3.1	Vacuum Pumping & Fuelling	Cryopumps	1	11.20	88%	9.856			12%
		Roughing Pumps	2	6.70					12%
		Leak Detection	3	5.00	88%	4.400			12%
		Standard Comp.	4	5.30					12%
		Pellet Injector	5	5.00					12%
		Gas Injector Valve Boxes + Glow Discharge Cleaning Conditioning system	6	7.70					12%
2.3	Remote Handling Equipment	Blanket Remote Handling Equipment	1	27.90			100%	0%	0.000
		Divertor Remote Handling Equipment	2	12.00	100%	12.000			
		Transfer Cask System	3	16.40	50%	8.200			
		Viewing/Metrology Systems	4	6.80	100%	6.800			
		Neutral Beam Remote Handling Equipment	5	6.00	100%	6.000			
		Hot Cell Maintenance Equipment	6	44.30					100%

2.6	Cooling Water System	Blanket +Divertor 1A	1A	33.70									
		Vacuum Vessel and Neutral Beam	1B	27.40									
		Piping Outside Vault	1C	12.50							100%		
		Heat Rejection and component Cooling Water: Material and transportation	2A	38.50									
		Heat Rejection and component Cooling Water: Engineering and On-site Assembly	2B	36.20							100%		
3.2	Tritium Plant	Tokamak Exhaust Processing System	1	13.00								12%	
		Storage & Delivery	2	14.50								12%	
		Hydrogen Isotopes Separation	3	6.20	88%	5.456						12%	
		Atmosphere Detritiation	4	30.20			50%	50%	15.100			50%	
		Water Detritiation	5	14.50	88%	12.760						12%	
		Tritium Analysis & Control	6	3.50								100%	
												50%	
3.4	Cryoplant Cryodistribution	Cryoplant	1	63.00	50%	31.500						50%	
		Cryolines	2	17.60									
		Cryodistribution components	3	16.20									
4.1	Pulsed Power Supply	High Voltage Substation Assembly	1A	6.00	100%	6.000							
		High Voltage Substation Materials	1B	21.00									
		AC/DC Converters	2	82.20									
		Switch, Discharge Circuits	3	69.00									
4.1	Steady State Power Supply	Emergency Assembly	8A	5.70	100%	5.700							
		Materials + Transportation	8B	14.30	100%	14.300							
			8C	20.00	25%	5.000							
6.2	Building	Concrete Buildings	1	323.50	100%	323.500							
		Steel Frame Buildings	2	68.80	100%	68.800							
6.3	Waste	Waste Treatment Storage	1	9.10	100%	9.100							
6.4	Radiological Protection	Radiological Protection	1	4.20	100%	4.200							
5.1	Ion Cyclotron	Ion Cyclotron Antenna	1	4.50	88%	3.960					12%	Fund. M 15. 5. 08 5	



Heating & Current Drive	Main Transmission Line	2	4.80						12%		
	Radio Frequency Power Sources	3	18.00								
	Power Supply	4	6.90								
5.2 Electron Cyclotron Heating & Current Drive	Equatorial Launcher	1A	7.30			88%	0%	0.000		12%	
	Upper Launcher	1B	8.90	88%	7.832					12%	
	Transmission Line	2	17.90							12%	
	Radio Frequency Power Sources	3	32.50	31%	10.075	31%	0%	0.000			
	Power Supply	4	13.90	92%	12.788						
5.3 Neutral beam Heating and Current Drive	Assembly and Testing	1	3.80	100%	3.800						
	Beam Source and High Voltage Bushing	2	9.50	50%	4.750	50%	50%	4.750			
	Beamline components	3	3.90	50%	1.950	50%	50%	1.950			
	Pressure Vessel, Magnetic Shielding	4	11.90	50%	5.950	50%	50%	5.950			
	Active Correction and Compensation Coils	5	6.10	100%	6.100						
	Power Supply for Heating Neutral Beam	6	62.50	38%	23.750	62%	62%	38.750			
	Diagnostic Neutral Beam	7	21.10								
5.5 Diagnostics	Magnetics	A	3.30	25.0%	0.825	14.2%	0.0%	0.000		21,5%	
	Neutron Systems	B	10.10	25.0%	2.525	14.2%	0.0%	0.000		21,5%	
	Optical Systems	C	25.70	25.0%	6.425	14.2%	0.0%	0.000		21,5%	
	Bolometry	D	6.70	25.0%	1.675	14.2%	0.0%	0.000		21,5%	
	Spectroscopic	E	22.50	25.0%	5.625	14.2%	0.0%	0.000		21,5%	
	Microwave	F	17.70	25.0%	4.425	14.2%	0.0%	0.000		21,5%	
	Operational Systems	G	11.00	25.0%	2.750	14.2%	0.0%	0.000		21,5%	
	Standard Diagnostics	N	40.50	25.0%	10.125	14.2%	0.0%	0.000		21,5%	
4.5 Command Control and Data Acquisition and Communication	Control and Data Acquisition		50.00							100%	

Total (~)	3020,71	33%	994.955	16%	243.797	11%	46.45%	155.985
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From (sharing): Common Understandings on Procurement Allocation
(N-12 ROM Att. 5.1)
And (cost): Final report of negotiations on the Joint Implementation of the ITER project -
Tokyo, 1 April 2006





Table IV - Indicative list of the Procurement Arrangements to be launched within 2008-2012

Procurement Arrangements related to EU contracts starting before 31-Dec-2012 as resulting in F4E Primavera database @ 18-Feb-2008
EU11 MAGNETS
< IPL - PA for 11.6AEU TF Conductors Rec'd from IO
< IPL - PA for TF Radial Plates & Covers issued by IO
< IPL - PA for TF Coils 11.1AEU TF Winding Packs & part of 11.2A Magnet Structures (Case Finishing)] Rec'd from IO
< IPL - PA for Pre-Compression Rings (PCRs) as part of PP 11.2A Rec'd from IO
< IPL - PA for 11.6C PF Conductors Rec'd from IO
< IPL - PA for 11.3A (PF6) & PP 11.3B (PF2-PF5) Rec'd from IO
EU15 VACUUM VESSEL
< IPL - PA for 15.1A Vacuum Vessel Rec'd from IO
EU16 BLANKET SYSTEM
< IPL - PA for 16.1B Blanket Shifeds Rec'd from IO (Draft Tender Package App'd by IO)
< IPL - PA for 16.1A Blanket First Wall Rec'd from IO (Tender Package App'd by IO)
EU17 DIVERTOR
< IPL - PA for 17.2A PFC Rec'd from IO
< IPL - PA for 17.1 Cassette Body & Integration Rec'd from IO
EU23 REMOTE HANDLING
< IPL - PA for 23.02 DIVRH Rec'd from IO (Date TBC)
< IPL - PA for 23.05 NBI RH Rec'd from IO
< IPL - PA for 23.03 Transfer Cask Rec'd from IO
EU31 VACUUM PUMPING & FUELING
< IPL - PA for 31.01 Torus & Cryostat Cryopumps (Tech Specs & Build-to-Print Dwgs) Rec'd from IO
< IPL - PA for 31.01 Cryopump Valve Boxes & Conn. Cryo Jumper (Build Specs) Rec'd from IO
< IPL - PA for 31.01 NBI Cryopumps (Tech Specs & Build-to-Print Dwgs) Rec'd from IO
< IPL - PA for 31.01 DNB Cryopump (Build-to-Print Dwgs & Tender Specs) Rec'd from IO
< IPL - PA for 31.03 Leak Detection System (Build to Spec) Rec'd from IO
EU32 TRITIUM PLANT
< IPL - PA for 32.05 WDS Tanks Rec'd from IO
< IPL - PA for 32.03 HISS Rec'd from IO (Detailed Design (DD-Func. Specs & CATIA Model)
< IPL - PA for 32.05 WDS Rec'd from IO (Detailed Design (DD-Func. Specs & CATIA Model)
EU34 CRYOPLANT AND CRYO-DISTRIBUTION
< IPL - PA for 34.1EU He Cryoplant Functional Specs & Layout Dwgs for Issued by IO
< IPL - PA for 34.1EU N2 Cryoplant & 80K Loop Functional Specs & Layout Dwgs Issued by IO
< IPL - PA for 34.1EU Anc Equip Functional Specs & Layout Dwgs Issued by IO
EU41 PULSED POWER SUPPLIES
< IPL - PA for 41.1A & 8B HV Substation & AC Distribution System Rec'd from IO
EU43 STEADY STATE ELECTRICAL POWER NETWORK
< IPL - PA for 43.8A SSEPN Rec'd from IO
EU51 ION CYCLOTRON HEATING & CURRENT DRIVE
< IPL - PA for 51.01 ICRH Antenna Rec'd from IO
EU52 ELECTRON CYCLOTRON HEATING & CURRENT DRIVE
< IPL - PA for 52.1B UL Rec'd from IO
< IPL - PA for 52.04 EC H&CD Power Supplies Rec'd from IO
EU53 NEUTRAL BEAM HEATING & CURRENT DRIVE
< IPL - PA for 53.04 NBI-1 Vessels, Magnetic Shielding, Drift Duct Rec'd from IO
< IPL - PA for 53.05 NBI-1 ACCC Rec'd from IO
< IPL - PA for 53.06 NBI-1 EU Power Supply Rec'd from IO

< IPL - PA for 53.01 NBI-1 Assy & Testing Rec'd from IO
EU62 BUILDINGS & CIVIL INFRASTRUCTURES
< IPL - PA for PF Coils Fabrication Bldg (B52) Rec'd from IO
< IPL - PA for Tokamak Complex (B11, B14 & B74) and Assy Hall (B13) Rec'd from IO
< IPL - PA for Cryoplant Compressor Bldg (B51A) Rec'd from IO
< IPL - PA for Cryoplant Coldbox Bldg (B51B) Rec'd from IO
< IPL - PA for Hot Cell Bldg (B21) Rec'd from IO (DATE TBD)
< IPL - PA for Cryoplant Water Pumping Station Rec'd from IO
< IPL - PA for Emergency Power Supply Bldg Rec'd from IO
< IPL - PA for Magnet Power Conversion Bldgs (B32&B33) Rec'd from IO
< IPL - PA for Cooling Water Basins Rec'd from IO
< IPL - PA for Site Services Bldg (B61) Rec'd from IO
< IPL - PA for NBI Power Supply Bldg (B34) Rec'd from IO
< IPL - PA for Pumping Station Rec'd from IO
< IPL - PA for Personnel & Access Control Bldg Rec'd from IO (DATE TBD)
< IPL - PA for Electrical Substation Yard Rec'd from IO
< IPL - PA for Control Bldg Rec'd from IO
< IPL - PA for Low Level Rad Waste Bldg Rec'd from IO
EU64 WASTE TREATMENT
< IPL - PA for Radwaste processing system
< IPL - PA Site Services Bldg Process Equipment
EU65 RADIOLOGICAL PROTECTION
< IPL - PA for Radiological Monitoring & Protection and Environmental Monitoring Systems



Table V – Indicative list of Contracts to be awarded within 2008-2012

Bidding for EU procurement contracts starting before 31-Dec-2012 as resulting in F4E Primavera database @ 18-Feb-2008
EU11 MAGNETS
Call-for-Tender & Contract Signed for TF Winding Packs
Call-for-Tender & Contract Signed for Prototype Double Pancake
Call-for-Tender & Contract Signed for Pre-Compression Rings
Call-for-Tender & Contract Signed for Assembly of TFWP into Coil Cases
Call-for-Tender & Contract Signed for PF Conductor
Call-for-Tender & Contract Signed for TF Coil Radial Plates & Covers
Call-for-Tender & Contract Signed for PF Coils
EU15 VACUUM VESSEL
Call-for-Tender & Contract Signed for Main Vessel Sector Plates
Call-for-Tender & Contract Signed for Main Vessel Sector Forgings
Call-for-Tender & Contract Signed for Main Vessel
Call-for-Tender & Contract Signed for Manifolds & Diagnostics
EU16 BLANKET SYSTEM
Call-for-Tender & Contract Signed for Blanket Shields
Call-for-Tender & Contract Signed for Blanket First Wall
EU17 DIVERTOR
Call-for-Tender & Contract Signed for CFC
Call-for-Tender & Contract Signed for the PFCs
Call-for-Tender & Contract Signed for Cassette Body Manufacture and Assembly
EU23 REMOTE HANDLING
Call-for-Tender & Contract Signed for Viewing/Metrology Systems Prototypes
Call-for-Tender & Contract Signed for DIVRH-MAM
Call-for-Tender & Contract Signed for DIVRH-CMEE
Call-for-Tender & Contract Signed for DIVRH-PTOOL
Call-for-Tender & Contract Signed for Transfer Cask System (11 Casks + 3 ATS + TBD Spares)
EU31 VACUUM PUMPING & FUELING
Call-for-Tender & Contract Signed for Torus & Cryostat Cryopumps
Call-for-Tender & Contract Signed for Cryopump Valve Boxes
Call-for-Tender & Contract Signed for 34 Conn. Cryo Jumper
Call-for-Tender & Contract Signed for NBTF Cryopump
Call-for-Tender & Contract Signed for NBI-1Cryopump
Call-for-Tender & Contract Signed for NBI 2 & 3 Cryopumps
Call-for-Tender & Contract Signed for DNB Cryopump
EU32 TRITIUM PLANT
Call-for-Tender & Contract Signed for WDS Tanks
Call-for-Tender & Contract Signed for Hydrogen ISS
Call-for-Tender & Contract Signed for WDS - Main
EU34 CRYOPLANT AND CRYO-DISTRIBUTION
Call-for-Tender & Contract Signed for He Cryoplant Design & Final Spec
Call-for-Tender & Contract Signed for N2 Cryoplant & 80K Loop Design & Final Spec
Call-for-Tender & Contract Signed for Anc. Equip. Design & Final Spec
EU41 PULSED POWER SUPPLIES
Call-for-Tender & Contract Signed for HV Substation and AC Distribution
EU43 STEADY STATE ELECTRICAL POWER NETWORK
Call-for-Tender & Contract Signed for SSEPN
EU51 ION CYCLOTRON HEATING & CURRENT DRIVE
Call-for-Tender & Contract Signed for ICRH Antenna



EU52 ELECTRON CYCLOTRON HEATING & CURRENT DRIVE
Call-for-Tender & Contract Signed for UL 1 CVD DWDs
Call-for-Tender & Contract Signed for UL Windows
Call-for-Tender & Contract Signed for UL Port Plug & Structures
Call-for-Tender & Contract Signed for UL MMW Comp'ts
Call-for-Tender & Contract Signed for UL Auxiliary Systems
Call-for-Tender & Contract Signed for BPS & MHVPS
EU53 NEUTRAL BEAM HEATING & CURRENT DRIVE
Call-for-Tender & Contract Signed for EU NBI-2 Power Supply
Call-for-Tender & Contract Signed for for NBTF Infrastructures
Call-for-Tender & Contract Signed for ISTF Ion Source Power Supply
Call-for-Tender & Contract Signed for ISTF Ion Source
Call-for-Tender & Contract Signed for 1MV NBTF Power Supply
Call-for-Tender & Contract Signed for 1MV NBTF Ion Source
Call-for-Tender & Contract Signed for EU 1MV NBTF Accelerator
Call-for-Tender & Contract Signed for EU 1MV NBTF Beamline Comp'ts
Call-for-Tender & Contract Signed for NBI-1 Vessels, Shielding & Drift Duct
Call-for-Tender & Contract Signed for NBI-1 & 2 ACCC
Call-for-Tender & Contract Signed for EU NBI-1 Power Supply
Call-for-Tender & Contract Signed for NBI-1 Assy
Call-for-Tender & Contract Signed for NBI-2 Vessels, Shielding & Drift Duct
EU62 BUILDINGS & CIVIL INFRASTRUCTURES
Call-for-Tender & Contract Signed for Technical Assistance for SRB
Call for Tender & Contract Signed for A/E
Call-for-Tender & Contract Signed for Non-Safety Bldgs A/E
Call-for-Tender & Contract Signed for Seismic Isolation Pads
Call-for-Tender & Contract Signed for Excavations
Call-for-Tender & Contract Signed for Tokamak Complex Foundation Raft
Call-for-Tender & Contract Signed for Assy Hall Crane
Call-for-Tender & Contract Signed for Assy Hall Elec Systems
Call-for-Tender & Contract Signed for Mech Systems of Tokamak Complex & Assy Hall Mech Systems
Call-for-Tender & Contract Signed for Cryoplant Water Pumping Station
Call-for-Tender & Contract Signed for Civil Works
Call-for-Tender & Contract Signed for Cryoplant Compressor Bldg (B51A)
Call-for-Tender & Contract Signed for Cryoplant Coldbox Bldg (B51B)
Call-for-Tender & Contract Signed for Hot Cell Bldg
Call-for-Tender & Contract Signed for Emergency Power Supply Bldg
Call-for-Tender & Contract Signed for Port Cell Doors
Call-for-Tender & Contract Signed for Magnet Power Conversion North Bldg (B32 &33)
Call-for-Tender & Contract Signed for Cooling Water Basins
Call-for-Tender & Contract Signed for Pumping Station Civil Infrastructure
Call-for-Tender & Contract Signed for Personnel & Control Acces Bldg
Call-for-Tender & Contract Signed for Electrical Substation Yard (B36)
Call-for-Tender & Contract Signed for Control Bldg
Call-for-Tender & Contract Signed for Low Level Rad Waste Bldg
Call-for-Tender & Contract Signed for NBI Power Supply Bldg (B34)
Call-for-Tender & Contract Signed for Site Services Bldg (B61)



C. Other Departments

Director & Office of the Director

Specific Functions: The main tasks of the Officer of the Director are:

- Provide the secretariat for the Governing Board, Executive Committee and Technical Advisory Panel
- Provide legal analysis and advice to the Director and to other Departments of Fusion for Energy on general matters
- Assist the Director in relations with the EU Institutions, the Court of Auditors, EU Agencies and Bodies as well as CCE-FU, EFDA and the Associations
- Prepare the Quality Management System of Fusion for Energy and advise the Director its implementation and liaise with the ITER Organisation
- Assist the Director in relations with the ITER Organisation, Japan/JAEA and the other ITER Domestic Agencies and other international bodies
- Contribute to the preparation of implementation agreements under international agreements
- Ensure relations with the press and public and supervise the organisation press events, interviews by the Director

Assumed Professional Staff Needs

Task/Position	2008	2009	2010	2011	2012
Director	1	1	1	1	1
Secretariat for F4E bodies and committees	1	1	1	1	1
Quality Assurance	1	1	1	1	1
Legal Service	2	2	2	2	2
International Agreements	1	1	1	1	1
Press, Public and External relations	1	1	1	1	1
Inter-institutional Relations	1	1	1	1	1
Assistance	0	2	2	2	2
TOTAL	8	10	10	10	10

In addition, 4-5 support staff will be necessary.

Internal Audit

Specific Functions: The main tasks of the Internal Audit are to:

- provide internal auditing and advisory services to internal management on dealing with risks, by issuing independent opinions on the quality of management and control systems and by issuing recommendations for improving the conditions of implementation of operations and promoting sound financial management;
- define the most appropriate procedures and methods in relation to auditing;
- assess the suitability and effectiveness of internal management systems and the performance of departments in implementing programmes and actions by reference to the risks associated with them;
- assess the efficiency and effectiveness of internal control and audit systems applicable to every budgetary implementation operation;
- present findings and recommendations (both verbally and in the form of written reports);
- follow-up and review corrective measures taken by the management resulting from audits;
- submit to the Director and the Governing Board an annual internal audit report.

Specific Assumptions: A number of auditing activities may be outsourced to external companies, under the responsibility of the Internal Auditor.

Assumed Professional Staff Needs

Task/Position	2008	2009	2010	2011	2012
Internal Audit	2	2	3	3	3
TOTAL	2	2	3	3	3

An additional number of 1-2 support staff will be needed.

Broader Fusion Development Department

The main tasks of the Broader Fusion Development Department are to:

1) Broader Approach Activities:

- prepare and coordinate the Euratom participation in the implementation of Broader Approach Activities; provide the Euratom financial contribution to Broader Approach Activities;
- coordinate scientific and technological research and development activities with the Japanese Domestic Agency and the Euratom participant countries;
- coordinate the in-kind contributions by the Euratom participant countries that provide components, equipment, materials and other resources for Broader Approach activities;
- where necessary, provide components, equipment, materials and other resources for Broader Approach Activities;
- where necessary, arrange to make human resources available for Broader Approach Activities;
- where applicable, develop, design, analyse and draft the technical specifications for the procurement of highly specialised components according to area of expertise and responsibility, and analyse design from a risk assessment point of view to propose modifications that could bring to either possible cost savings or to a reduction of the risk;
- prepare Procurement Arrangements for the in-kind contributions by Euratom and submit them to the Japan Domestic Agency;
- prepare the corresponding back to back Arrangements with the participating European countries;
- monitor the execution of the back to back Arrangements and approve the attribution of credits in Europe according to the BA procurement allocation;
- evaluate and approve Procurement Arrangements proposed by the Japanese domestic Agency;
- provide cost estimates, commitment and cash flow for the contracting of the activities related to the Procurement Arrangements under direct responsibility of F4E in collaboration with the administrative departments;
- evaluate/approve design changes, non-conformities and over-costs;
- monitor the scheduling of the different procurements and their interaction with the overall Broader Approach schedule;
- ensure the technical follow-up and monitoring of contracts, analyse and evaluate reports and deliverables in accordance with the regulations and contractual provisions applicable;

- provide technical support to Euratom (represented by the European Commission) in the Broader Approach Steering Committee;

2) DEMO Activities:

p.m.

3) General:

- provide periodic reporting on status of advancement of projects, earned value, budgetary updates and forecast and ensure the proper administration and update of files and archives related to the above tasks;
- contribute to the annual activity report exercise and any other reports such as the Project Plan, the Resource Estimates Plan and the Budget;
- provide information for the establishment of the Resource Estimates Plan and Budget;
- contribute to the reporting including annual report and response to the Court of Auditors and other bodies;
- contribute to the development and implementation of homogenous and compatible procedures norms and methods to process and access financial and contractual information or documents.

1. JT-60SA

Specific Functions

According to the decisions adopted by the Broader Approach Steering Committee on the establishment of a single, albeit geographically distributed, Integrated Team working under the leadership of the Project Leader and the two EU/JA Implementing Agencies Project Managers, the functions of the European JT-60SA Home Team is summarised as follows:

- To jointly form, with the JA complement in Naka, a well integrated Joint Integrated Team that will:
 - Integrate the machine design: define overall machine design and interfaces, perform configuration management, define and maintain requirements, project tools, a common quality program, a common cost basis, and a common schedule.
 - Perform component level design and analysis to the extent needed for component interfaces to be defined and remain stable.
- To assure that the machine design and construction respond to the EU fusion programme interests and wishes, as agreed with JA in the final design report of JT-60SA.
- To closely work in partnership with the EU Contributors on the detailed design activities of their competence and hence guarantee that all the technical activities conducted in the EU Contributors are consistent with the Project Plan and annual work programmes.
- To carry out the design and purchasing of systems not procured by the Contributors (for example the TF Coils Cold Test Facility & Tests).

- To, during the procurement phase being executed by the Voluntary Contributors, integrate further the design towards its assembly, monitor the work progress/schedule, manage non-conformances, etc.

Specific Assumptions

In establishing the minimum manpower needs, some additional assumptions have been made:

- CAD, IT, and Administrative support will be provided by the host.
- Additional resources will be drawn from F4E staff based in Barcelona from the ITER, Resources, and Procurement Departments for: QA, analysis, materials, Codes and Standards, CAD, Risk Management, Personnel Admin, legal matters, Contract Admin.

2. IFMIF-EVEDA

Specific Functions

Unlike JT-60SA, the EU participating countries have taken on the technical work for IFMIF-EVEDA. Moreover, in the Project team in Rokkasho, the Project Leader is European, the Leader for the Target facility, where the Japanese play a major role, is also European and also the Leader for Design Integration, still to be selected, has been assigned to the EU.

This should allow EU to master the overall project and also the parts of the project where it will not be directly performing most or all of the technical work. The two System Groups inside EU, on the Accelerator and on the Test facility, include some of the best specialists in the respective fields in EU and should assure a very satisfactory outcome of the EVEDA.

Specific Assumptions

For IFMIF-EVEDA, the assumption is that most of the technical work will be carried out by the Project Team and by the Teams present at the Voluntary Contributors. However, from 2011 an extra 2 staff will be required in order to assist with (or carry on) the negotiations for the construction of IFMIF.

3. IFERC

Specific Assumptions

None.

4. DEMO

Specific Assumptions

The amount of staff foreseen for DEMO is too low and should be reconsidered following the Report of the Facilities Review Panel and when the policy decisions are taken on the way forward to DEMO.



Summary Table Broader Fusion Development Department

Task/Position	2008	2009	2010	2011	2012
Head of Department	1	1	1	1	1
JT-60SA	6	7	7	7	7
IFMIF/EVEDA	0	1	2	4	4
IFERC	0	1	1	1	1
DEMO	0	1	2	2	2
TOTAL	7	11	13	15	15

An additional number of 7-9 SNEs from the participant countries will be needed.

Contracts and Procurement Department

Specific Functions

The Contracts and Procurement Department (C/P-D) will have an important role in preparing, launching and controlling the implementation of the contracts needed by F4E. In particular its tasks will be:

- to manage, together with the ITER Department, all in-kind procurements within the scope of EU contribution to the ITER and Broader Approach projects;
- to identify, in the European Union preferably, firms liable to answer our calls for proposals and tenders;
- to motivate firms to unite through long term consortia or according to temporary grouping so as to be able to initiate an Industrial Policy for Fusion in the European Union to answer ITER needs but also DEMO and production reactors in the future;
- to contract out design and R&D activities for the development of parts of EU in-kind contribution to ITER, this will be done in close partnership with the ITER Department from the very beginning of the writing of the technical specifications;
- be associated with the ITER Department as the main interface for all the EU procurements with the French Safety authorities supervising the manufacturing and testing of components according to the agreed QA and QC procedures;
- to negotiate with ITER the actual content of the Procurement Arrangement, in close collaboration with the ITER Department for all technical issues;
- to help to establish a proper estimation of costs (commitments and payments) for the contracts to be signed by F4E in collaboration with the ITER Department;
- to establish the procurement strategies needed for the definition of the calls for proposals and tenders;
- to organise and issue calls for proposals and tenders;
- to review, with the Departments involved, the offers from research organisations and economic operators, evaluate and negotiate (when possible) and propose adjudication of contracts;
- to launch an industrial strategy with the appropriate policy so as to identify the firms likely to contract with F4E, ensure market awareness and a proper selection of suppliers;
- to define and implement an assessment of suppliers;
- to validate the closure of contracts;
- to analyse the result of proposals and tenders so as to obtain a comprehensive knowledge of costs and if any, explanations for over-costs and delays;

- to provide legal support when needed for the contracting consequences (including IPR) of the implementation of the agreements established by Euratom with France for the discharge of obligations relative to site preparation and site support. This will be all the more important as the efficient managing of these consequences will have a strong impact on the running of the project in Cadarache (including exploitation contracts);
- to contribute to the annual activity report exercise and any other reports such as the Project Plan, the Resource Estimates Plan and the Budget.

The Department will also be in charge of:

- the financial management of the operational contracts;
- the development and implementation of the legal framework within which contracts and procurement will be prepared,
- developing an overall industrial strategy of F4E in the short term but also in the long term with the preparation of DEMO, and the relations with industry,
- the assessment of suppliers, the preparation of the Intellectual Property (IP) Policy and its implementation,
- the relations with other Contracts and Procurements Departments belonging to other DAs.

The Department will need to contribute with the other Departments in the project preparation phase so as to prepare a sound scientific project with clear objectives and a reliable timetable, and to identify the technical and industrial challenges of the project and the budget and human resources required.

Specific Assumptions

The Department will need to work ‘hand in hand’ with the other departments so as to allow the identification of a rigorous risk assessment, important to identify the elements which could influence the project, to evaluate them and make possible changes to the undertaking of the project before, during and after our calls for tenders.

The Department will need to assist all parties during the different project phases since it will most likely require constant re evaluation. This assistance will contribute to the appropriate decisions to be made by F4E regarding the different project parameters (resources, schedule etc.).

The Department will also need to work hand in hand with the ITER Department and the Resources Department so as to develop an effective cost and schedule consciousness and a comprehensive awareness of the budgets needed and authorised so as to prevent unrealistic budget programming that could imply less credibility of F4E in the eyes of the Governing Board and the Executive Committee.

The Department will be structured around 3 groups:

The Legal Support, Intellectual Property and Technological Transfer Group: responsible for ensuring F4E of the conformity of procurements, of giving support in the understanding and

use of our legal commercial framework, of proposing the evolution of our legal framework (if necessary), assisting F4E in managing Intellectual Property and Technology Transfer.

The Suppliers Relations and Reporting Group: responsible for providing support for the: planning and scheduling activities; the update of the F4E Industrial database and of the main F4E technical document storage system; the preparation of specific documents and presentations; the assessment of the suppliers with an accurate follow-up of the contracts.

The Procurement and Contracts Support Group: responsible for the preparation and launching of procurement strategies and then calls for proposals and tenders; organisation of the evaluation of proposals, tenders and selection, in collaboration with the other Departments, of the most suitable contractor; the follow up contracts and grant agreements from the legal and financial point of view; the authorisation of payments, in agreement with the other relevant departments; the implementation of necessary contract amendments; the termination of contracts.

Assumed Professional Staff Needs

Task/Position	2008	2009	2010	2011	2012
Head of Department	1	1	1	1	1
Legal Support, IPR and Technology Transfer Group	5	6	7	7	7
Suppliers Relations and Reporting Group	2	4	6	6	6
Procurement and Contracts Support Group	9	20	22	22	22
TOTAL	17	31	36	36	36

An additional number of 4-6 support staff will be needed.

Resources Department

The Resources Department manages the overall resources of F4E as well as the related policies, and is therefore the underlying base for the administration of the Joint Undertaking.

It is in charge of, in particular, the human resources, budget, finance and accounting, IT systems, logistics and infrastructure and the information and communication activities, as well as of the relationship with the Community Institutions and the F4E Host State.

Specific Functions

- in the context of the Departments' responsibilities, manages the relationship with other institutions (European Commission, Parliament, Court of Auditors, etc.) and the inter-agency network;
- manages the relationship with the F4E Host State including the application of the Host Agreement and the provision of Privileges and Immunities for F4E and its staff;
- coordinates the follow up and application of the recommendation(s) of the Internal Audit and Court of Auditors;
- hosts and supports the Accounting service;
- prepares and coordinates the annual budget of F4E and monitors its execution;
- prepares the Resource Estimates Plan and Annual Budget, in collaboration with the other Departments, and ensures coherence with the Work Programmes and the Project Plan;
- coordinates and establishes the financial circuits, the manual of procedures and the organisation of the relevant financial training;
- contributes to the annual activity report exercise and any other reports;
- manages and executes the Administrative expenditure of F4E including the contractual & financial management of procurement contracts for administrative support;
- proposes the framework of the Internal Control Standards, updates them regularly and verifies their good application within the services;
- maintains the Financial Regulation and Implementing Rules, in collaboration with the other relevant Departments and provides support on their implementation;
- makes payments, collect revenues, recovers amounts receivable and manages the treasury;
- keeps, prepares and presents the accounts, implements the accounting rules & methods and the charts of account, and lay down and validate the accounting systems;
- prepares and launches the appropriate procedures for the administrative contracts necessary to ensure an adequate infrastructure and services for the Joint Undertaking;

- supervises and monitors the human resources' policy within F4E in terms of appraisal, promotion systems, recruitment, equal opportunities, coordination of training priorities, career development and the coordination with the planning and budget function;
- manages the human resources of F4E, including the follow-up of the establishment plan and its related financial aspects (publication, recruitments, etc.);
- manages all the HR related procedures stemming from the Staff Regulations, the CEOS and the Implementing Rules and ensures their homogeneous application;
- supports the personnel on the application of the Code of Good Administrative Behaviour;
- coordinates the personnel data protection policies and its application within F4E, and ensures that all Data processed by the organisation are respecting the relevant regulations including the financial regulation, the staff regulations and related personal data protection rules ;
- ensures a secure IT architecture in line with the F4E legal requirements, processes and activities (mainly around procurement, contract management by building and maintaining the required IT systems and workflows as needed. ;
- maintains and develops the different central database and the IT applications necessary for the good execution of the tasks entrusted to F4E and its mission. In particular maintains and develops the IT system for Human Resources, Budget, Contracts, Planning, etc ;
- ensures the supply, management and maintenance of the IT equipment and software of F4E, as well as maintains and coordinates the inventory of all the assets;
- acts as the Information Resource Manager (IRM);
- ensures the management of the Document Administration Centre (DAC) which includes the registering of all incoming and outgoing mail, the central offices as well as the management of the Mail Management System (rules, access, ...), as well as any other systems necessary for the management of documents, such as IDM;
- coordinates the logistics aspect related in particular to technical support, office management, communal areas, office moves and more generally to the overall working conditions;
- ensures the security of the persons and goods within F4E;
- ensures a proper infrastructure for F4E and follows up with the Host State the provision of the F4E building;
- implements an information and communication policy;
- ensures the provision of information as well as the internal and external communication of F4E (intranet, website).

Specific Assumptions

The Resources Department needs to have a stable critical mass of staff to ensure the operational capacity of the organisation. A number of administrative, HR, IT and other services, which are staff intensive, are outsourced to the limits allowed by the nature of a European public service organisation, in particular the need to comply with legal and financial regulations and the principles of confidentiality and transparency.

For example, for IT systems, some of the benefits on IT services that apply to Commission Executive Agencies can not apply to F4E as legally speaking it is a Joint Undertaking (i.e. we need to host and support our own email service). The approach is that to in order to ensure legal compliance and security of data for F4E official documents and technical specifications, F4E will manage such services until the F4E operational environment is stabilised and, subject to legal compliance, outsourcing of specific no mission critical systems may follow.

The administrative services outsourced will in particular include:

- calculation of salaries, pensions, mission and social security related costs;
- medical services for the entry into service and annual check ups;
- translation services;
- publication services;
- training for staff;
- IT services relating to the development of IT systems, both for operational and administrative functions;
- cleaning and maintenance services;
- moving services;
- travel and transport services;
- safety and security services.

Assumed Professional Staff Needs

Task/Position	2008	2009	2010	2011	2012
Head of Department	1	1	1	1	1
Assistance and co-ordination	1	1	2	2	2
Security	1	1	1	1	1
Budget, Finances	3	4	5	5	5
Accounting	2	3	3	3	3
Administrative Procurement	2	2	2	2	2
Human Resources	5	6	6	6	6
IT	3	4	4	4	4
Logistics	2	2	2	2	2
Information and Communication	1	2	3	3	3
TOTAL	21	26	29	29	29

An additional number of 22-30 support staff will be needed, in particular for: administrative support; secretarial support; financial support; receptionist and



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telephonist; logistical support; mail clerks; technical maintenance; encoding and registration of all incoming and outgoing mail; IT helpdesk and support; encoding and validation of data (financial, accounting, HR, etc.); archiving; safety.

D. Summary Table⁷⁸

Based upon the above analysis, the following figures for professional staff can be estimated according to the scenarios described above.

Department	2008	2009	2010	2011	2012
Director & Director's Office	8	10	10	10	10
Internal Audit	2	2	3	3	3
ITER	90	134	143	146	146
Broader Fusion Development	7	11	13	15	15
Contracts and Procurement	17	31	36	36	36
Resources	21	26	29	29	29
TOTAL	145	214	234	239	239

⁷ The total number of support staff (Contract Agents) is estimated to be between 51 and 63.

⁸ Following the adoption of the Resource Estimates Plan 2008-2012 on 18 December 2007, Fusion for Energy requested 199 posts from the budgetary authority. As this Report was drafted afterwards, the request for F4E staff in front of the budgetary authority will need to be adjusted in the following years starting from 2010 (where the difference will be requested).



Annex I – F4E Establishment Plan for 2008 and 2009

Staff Establishment Plan for 2008 and 2009

Categories and Grades	2008		2009	
	Permanent Posts	Temporary Posts	Permanent Posts	Temporary Posts
AD16			0	0
AD15			0	0
AD14		1	0	1
AD13	1		1	1
AD12	8		8	8
AD11	12		12	0
AD10	14		4	10
AD9	10	24	10	38
AD8	4		4	0
AD7			0	10
AD6	2	35	2	47
AD5			0	4
Total AD Grade	51	60	41	119
	111		160	
AST11			1	0
AST10	1		1	0
AST9			1	0
AST8	1		0	0
AST7			1	0
AST6	1		1	0
AST5	1		6	0
AST4	1		2	0
AST3	2	25	1	25
AST2	1		0	0
AST1	1		0	0
Total AST Grade	9	25	14	25
	34		39	
Total Posts	60	85	55	144
	145		199	

Annex II – Main assumptions and Staffing Estimates stemming from the Report of the CCE-FU Preparatory Group on the detailed analysis of ELE technical staffing needs (extracts from the report)

On the basis of an input paper and detailed technical analysis of anticipated needs performed by EDFA, the group examined the staffing needs of the ELE on the basis of a provisional functional organisation structure. In this context, two main scenarios were identified by the group:

- First Scenario: few detailed designs and technical specifications to be developed by the ELE; technical follow-up of contracts limited to periodic reporting (strong role of ITER Field Teams).
- Second Scenario: few detailed designs and technical specifications to be developed by the ELE; Technical follow-up of contracts fully undertaken by ELE (minimum role of ITER Field Teams).

These two scenarios are consistent with the common understandings on ITER procurement agreed by the parties. The scenario by which most of the detailed designs has to be developed by the Domestic Agencies is not considered since it would imply a decision by the parties in the ITER Council.

Taking into account the ITER staffing, the group saw the second scenario as most realistic although it was concluded that staffing levels for some functions should be reinforced - steady-state power supplies, CODAC, IFMIF, QA, programme/risk management and plasma engineering.

Finally, the existence of a third scenario was identified by the group in which not only does the ELE have the full responsibility for the follow-up of contracts but that it should also develop many of the detailed designs of the components to be procured in the absence of "build to print" specifications from ITER.

Based upon the above analysis, the following figures for professional grade ("AD") level staff can be estimated according to the second scenario described above corresponding to a "fully operational" phase in 2009:

Total Staff: 153, of which Director (1), Internal Auditor (1), ITER Project (91), Fusion technology (15), Engineering Services (20), Programme Management and Administration (25).

NB: Since technicians, CAD personnel, assistants and clerical staff at Assistant "AST" level were not included in this analysis, an estimated number of 90 staff was considered necessary in 2009, bringing the total amount to 243.



**Annex III – Comparison with other ITER Domestic Agencies
(indicative figures)**

	Technical Staff	Administration	Total
Japan	84	0	84
Russia	73	7	80
Korea	65	0	65
India	130	20	150
US	60	4	64
China	?	?	?

Notes:

1. All the other ITER Domestic Agencies are responsible for approximately 10% of ITER
2. In most Domestic Agencies, the ITER Team is hosted by an existing organisation that provides all services linked to Contracts, Procurement and Administration.
3. Figures are based on information provided in October 2007