POSC Caesar

Work Plan for POSC Caesar 2003

POSC Caesar's Work Plan for 2003 consists of six parts: administration, ISO 15926, planned projects, PISTEP, POSC Caesar (NO), and potential projects in year 2004 or later.

The Board of POSC Caesar has decided that the membership fees shall primarily be used to fund the administration of POSC Caesar, necessary ISO processes and the maintenance of POSC Caesar Reference Data Library (RDL). Any extension of the RDL has to be funded directly by the membership.

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- New RDS
- Updating the RDL
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The results of all activities - when completed - will be made available for the members of POSC Caesar.

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1 Administration

POSC Caesar shall improve the services for the membership by being more accessible and more visible in 2003.

1.1 Housing and administrative functions

POSC Caesar will be renting offices, meeting room and IT facilities from DNV. In the agreement with DNV there will also be an option for renting more office facilities for upcoming projects.

POSC Caesar will also hire skilled personnel from DNV for necessary administrative tasks. The list of tasks includes:

- ✓ Management
- ✓ Accounting/Legal issues
- ✓ Web Site
- ✓ Meetings
- ✓ Member Administration
- ✓ Organising courses, seminars/conferences
- ✓ Marketing

1.2 Reference Data System (RDS)

The RDS is POSC Caesar's most important tool and most of its value is stored in this system. It has to be updated to cope with the IS version of ISO 15926 Part 2.

A functional specification of the RDS based on the FDIS version of ISO 15926 Part 2 will be developed by December 1, 2003. (The costs for updating the specification to the IS-version and actually building the system has to be planned funded for in 2004.)

1.3 Management and Technical Courses

POSC Caesar shall offer the membership at least one management course and two technical courses during 2003.

1.4 Conference/seminar and membership meetings

POSC Caesar shall offer the membership at least one conference/seminar and/or one membership meeting during 2003 in addition to the Annual Meeting in May.

1.5 Brochure

As part of the marketing of the Association, POSC Caesar will produce a brochure every year presenting the main activities, major achievements and important events in the near future.

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2 ISO 15926

POSC Caesar is accountable for the administration of the international standard "ISO 15926 *Integration of life-cycle data for process plants including oil and gas production facilities".*

Today ISO 15926 consists of five parts:

- Part 1 *Overview and fundamental principles*
- Part 2 *Data model*
- Part 4 *Initial reference data*
- Part 5 *Procedures for registration and maintenance of reference data*
- Part 6 *Scope and methodology for developing additional reference data*

The plan is to extend ISO 15926 with two additional parts during year 2003:

- Part 3 *Geometry and Topology*
- Part 7 *Templates*

2.1 Final Draft International Standard (FDIS) version of Part 1 and 2

Matthew West, (Project Manager) Shell, Jan Sullivan, InfoLogic, Hans Teijgeler, Fluor, and David Price, EuroSTEP, will resolve issues put forward through the ballot of the DIS version of Part 2 and develop a FDIS version. The FDIS version will be sent out for ballot as soon as possible and no later than April 30. POSC Caesar is funding the work of Jan Sullivan, David Price and partly Matthew West.

POSC Caesar management will do the FDIS version of Part 1 and send it to the ISO system for ballot. POSC Caesar funds this work.

2.2 NWI/TS version for Part 3 Geometry and Topology

2.2.1 Objectives

The project shall extend the data model in Part 2 of ISO 15926 to include 2- and 3D modelling of objects in subsurface, facilities and plants by producing a New Work Item and Technical Specification (NWI/TS) proposal and a Technical Specification (TS) for a Part 3 in ISO 15926.

2.2.2 Benefits

ISO 15926 standard integrates data across disciplines and phases, but to be able to cope with 2- and 3 dimensional data in subsurface modelling, structural analysis, CAD systems, etc., the data model has to be extended. This will make it possible to integrate pre-concept data, simulation data in the concept phase, and 3D design data as well as facility information with subsurface information.

The solution providers will make these results available for the end-users. Suppliers, engineering and oil companies will benefit from improved work processes.

2.2.3 Organisation

David Leal, Caesar System, does the work of producing necessary documentation for a NWI/TS. Expertise from Geographic Information Systems (GIS) in ISO TC211 and expertise in 3D from ISO 10303 will also be involved in the development of Part 3.

The membership of POSC Caesar is involved through meetings, mailed documents, and the ISO process. It is important to include heavy 3D users in EPC, oil companies, and of course, software developers in the review process.

2.2.4 Project plan

The project started in February 2003 and is planned to end in June 2004. Important milestones are:

- ✓ Annual Meeting
- ✓ ISO meeting in June
- ✓ Membership meeting in September
- ✓ ISO meeting in October
- ✓ NWI/TS proposal to ISO system in December
- ✓ TS available in June, 2004

2.2.5 Deliverables

The project started in February 2003 and is planned to end in June 2004 with a Technical specification. By the end of this year, a NWI/TS will be sent out for a balloting process in the ISO system.

2.2.6 Maintenance and enhancement

POSC Caesar will maintain and enhance the document describing ISO 15926 Part 3 when needed.

2.2.7 Costs

The total cost of this project is estimated to EUR 0.2 millions. VAT is not included.

2.2.8 Funding

The Norwegian Oil Industry Association and DNV have initiated the project and each has sponsored EUR 30 000. Additional EUR 125 000 is needed to complete the project.

2.3 New Work Item/Technical Specification (NWI/TS) version for Part 4, 5, and 6

ISO 15926 Part 4 exists as TS proposal but only according to ISO 15926 part 2(DIS).

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ISO 15926 Part 5 and Part 6 already exist as TS proposal.

The work to develop a TS proposal for all three parts according to ISO 15928 Part 2 (IS) will be done in 2005.

2.4 NWI/TS version for Part 7 Templates

2.4.1 Objectives

The project shall develop rules for implementing the data model in ISO 15926 Part 2, produce documents for a New Work Item and a Committee Draft-Technical Specification for Part 7 in ISO 15926, send it to ISO system for balloting, and update the documents to an ISO Technical Specification.

2.4.2 Benefits

The data model in ISO 15926 Part 2 is very generic. Next to the advantages of such genericity, it has the disadvantage of being difficult to instantiate in a consistent way across implementers. Templates as given in Part 7 provide the means to implement the data model and the RDL in an unambiguous way.

The solution providers will make these results available for the end-users. Suppliers, engineering and oil companies will benefit from improved work processes.

2.4.3 Organisation

Hans Teijgeler (Project Manager), Fluor, Ian Glendinning, AVEVA, Magne Valen-Sendstad, POSC Caesar, Ono Paap, Fluor, and David Price, EuroSTEP, are developing the NWI/TS proposal. It will be sent to ISO system for ballot in October.

The membership of POSC Caesar is involved through meetings, mailed documents, and the ISO process.

2.4.4 Project plan

This work really started back in 1998 and has been ongoing since then. Hans Teijgeler and Ono Paap have done major part of the work in 2001 and 2002. Due to several changes in the data model, the Template document has been through many revisions. The project plan is now:

- ✓ NWI/TS to ISO system in October 2003
- ✓ ISO meeting in October
- ✓ ISO meeting in February
- ✓ TS available in June, 2004

2.4.5 Deliverables

The project started in February 2003 and is planned to end in June 2004 with a Technical Specification. By the end of this year, a NWI/TS will be sent out for a balloting process in the ISO system.

2.4.6 Maintenance and enhancement

POSC Caesar will maintain and enhance the document describing ISO 15926 Part 7 when needed.

2.4.7 Costs

This project has up to year 2003 required at least 6-8 man-year. Necessary funding for completing the project is estimated to be EUR 75 000.

2.4.8 Funding

A major part of work has been funded by Fluor. AVEVA has also made a significant contribution. POSC Caesar is funding Magne Valen-Sendstad and David Price, EuroSTEP.

3 Ongoing and planned projects for extending the RDL and creating templates

Ongoing projects and projects planned to be started up in 2003 for extending the RDL and/or creating templates are listed below:

3.1 Co-operation And Standards for life Cycle Assessment Data in Europe (CASCADE)

3.1.1 Objectives

Life Cycle Assessment (LCA) is a method for systematically assessing the environmental impact of a product through all of its life-cycle stages: from the extraction and the processing of raw materials to manufacturing, transportation and distribution, and finally reuse, maintenance, recycling and final disposal. Usually standard LCA has four main stages: goal definition and scoping, inventory analysis, impact assessment and interpretation. It requires a massive use of materials' and processes' data.

LCA can be used to evaluate the impact of an existing product or process, but increasingly LCA is being used at the design stage of new products where the need for changes can be more easily identified and the cost of making those changes is a minimum.

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The project is preparing standardised computer-sensible representations of the data types defined in the ISO 14040 series as part of ISO 15926-4. This will be the database of standard LCA terminology. This data repository will have interfaces to ISO 10303 and ISO 13584 for use of this computer sensible data also within these standards. This data from ISO 15926-4 will also be made available in XML format.

3.1.2 Benefits

Data representations for LCA based on ISO 15926 will secure the longevity, stability and independence needed, including accessibility, comparability and quality assurance of data used in LCA. Furthermore, the project will form a basis for closer co-operation between ISO TC207 SC5 which is responsible for the development of the ISO 14040 series of LCA standards and ISO TC184 SC4 which is responsible for standardisation of industrial data in general.

3.1.3 Organisation

The project is an EU funded project with the following participants: ENEA(I), LCA consultants (DK), CAESAR Systems (UK), CPM (SW), Ecobilan (I), Environment Agency (UK), Ferroday Limited (UK), POSC Caesar (NO), Prè (NL), Rolls-Royce (UK), SEPA (UK), and ISML (I) where ENEA has the project manager.

3.1.4 Project plan

The project started in 2002 and ends December 2003. POSC Caesar shall provide all the RDL within December 2003.

3.1.5 Deliverables

The main deliverables will be:

- a model for LCA data representation (ISO 15926-2)
- a web repository (ISO 15926-4) for terminology of computer - understandable data from the ISO 14040 series, in particular ISO 14048 for LCA data , including also a chemical database
- validated with a trial set of data and case studies
- a software demo for management of data and LCA studies
- Guidelines for collection, treatment and quality of LCA data

3.1.6 Maintenance and enhancement

This extension of POSC Caesar's Reference Data Library (RDL) will be available for all members of POSC Caesar for at least 12 months before some or all of it becomes public available through ISO 15926. POSC Caesar's membership fees will cover the costs of maintenance of this extension.

3.1.7 Costs

POSC Caesar's budget for this project is EUR 0.1 millions. VAT is not included.

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3.1.8 Funding

All POSC Caesar's work in this project is covered 100% by the European Union.

3.2 Extending the RDL to include exploration and reservoir evaluation

3.2.1 Objectives

The project shall extend the reference data library for all subsurface activities covering exploration including drilling, reservoir evaluation and production.

3.2.2 Benefits

All technical information – subsurface and facilities – will be based on one common data model as given in ISO 15926. This makes it possible to integrate G&G data with facility data during concept evaluation and production. Integration of real time data and 3D information below and above surface will be the requirement of remote operation of offshore oil and gas field.

The solution providers will make these results available for the end-users. Suppliers, engineering and oil companies will benefit from improved work processes.

3.2.3 Organisation

The work will be organised as a virtual project with a project manager located in the offices of POSC Caesar, Bærum. There will be arranged workshops in the beginning of the project to bring the participants up to speed and later to create ownership for the solutions.

A global Technical Advisory Network (TAN) will be established that consists of skilful engineers from the solution providers, and companies funding the project.

3.2.4 Project plan

The project will be divided into manageable and well-defined work activities with deliverables. The priorities and deadlines will be defined according to the needs of the industry.

The project starts as soon as it is funded.

3.2.5 Deliverables

The project shall deliver reference data in batches every second month after starting up.

3.2.6 Maintenance and enhancement

This extension of POSC Caesar's Reference Data Library (RDL) will be available for all members of POSC Caesar for at least 12 months before some or all of it becomes public available through ISO 15926. POSC Caesar's membership fees will cover the costs of maintenance of this extension.

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3.2.7 Costs

The total costs of this project are estimated to EUR 0.15 millions. VAT is not included.

3.2.8 Funding

The offshore industry will be asked to fund this project.

3.3 Transforming NORSOK's Data Sheets to ISO 15926's Data Sheets

3.3.1 Objectives

The project shall convert NORSOK's data sheets that are in use in the Norwegian offshore industry today to a set of generic data sheets that are in compliance with ISO 15926.

There are more than 300 NORSOK data sheets and they are given on the web site: http://www.nts.no/norsok/. Piping and valves will not be included in this work.

3.3.2 Benefits

The project is a major step forward to make the data sheets in the NORSOK's standards a part of the global oil and gas industry. Furthermore, it will make the engineering data much more accessible for sharing and exchange across disciplines, organisations and geographical distances.

Some solution providers will make these results available for the end-users. Suppliers, engineering and oil companies will benefit from improved work processes in engineering and procurement.

3.3.3 Organisation

The work will be organised as a project under leadership of Aker Kværner. Discipline and POSC Caesar technology competence will be available through out the entire project period. The staff will be located in the offices of POSC Caesar, Bærum.

Review teams (Work Groups) within different disciplines will be established to secure ownership and commitment from the whole offshore industry.

3.3.4 Project plan

The project will be divided into manageable and well-defined activities with deliverables and deadlines. The priorities and deadlines will be defined by the needs of Norsk Hydro's Ormen Lange project. The following disciplines will be covered:

Discipline:	Number of data sheets
Mechanical Equipment	30
Process	50

Architectural	11
Electrical	12
Drilling	2
HVAC	1
Material	33
Safety	23
Telecommunication Systems	4
Field Instrumentation / Metering	35
IEC 61508	

The project starts June 2003 and terminates June 2004.

3.3.5 Deliverables

The project shall deliver reference data and generic data sheets compliant with ISO 15926.

3.3.6 Maintenance and enhancement

These extensions of POSC Caesar's Reference Data Library (RDL) and Data Sheet Library (DSL) will be available for all members of POSC Caesar for at least 12 months before some or all of it becomes public available through ISO 15926. POSC Caesar's membership fees shall cover the costs of maintenance of these extensions.

3.3.7 Costs

The total costs of this project are estimated to approximately EUR 1.4 millions. VAT is not included.

3.3.8 Funding

Norsk Hydro's Ormen Lange project is funding this major project.

3.4 Extending the reference data library to include common breakdown structure for ship equipment

3.4.1 Objectives

The project shall extend the reference data library for equipment for ships.

3.4.2 Benefits

The RDL will be extended to include equipment for ships.

3.4.3 Organisation

The work will be as an internal DNV project.

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3.4.4 Project plan

The project period is January to December 2003.

3.4.5 Deliverables

The project shall deliver reference data in batches every second month after starting up.

3.4.6 Maintenance and enhancement

This extension of POSC Caesar's Reference Data Library (RDL) will be available for all members of POSC Caesar for at least 12 months before some or all of it becomes public available through ISO 15926. POSC Caesar's membership fees will cover the costs of maintenance of this extension.

3.4.7 Costs

The total costs of this project are estimated to EUR 0.1 millions. VAT is not included.

3.4.8 Funding

DNV is funding this project.

3.5 Statoil - SAP Material Master

3.5.1 Objectives

The project shall classify the equipment in Statoil's SAP Material Master according to functionality as given in ISO 15926.

3.5.2 Benefits

The project will provide a good basis for extending the classification to include information from data sheets within each class.

3.5.3 Organisation

The work will be organised as a project with a project manager located in the offices of POSC Caesar.

3.5.4 Project plan

The project period is March-May, 2003.

3.5.5 Deliverables

The project shall deliver an appropriate set of classes for all equipment in Statoil's SAP.

3.5.6 Maintenance and enhancement

No extra work.

3.5.7 Costs

The total costs of this project is estimated to EUR 0.03 millions. VAT is not included.

3.5.8 Funding

Statoil is funding this project.

3.6 Norwegian Defence - SAP Material Master

3.6.1 Objectives

The project shall establish a database for equipment based on ISO 15926 for a Norwegian Maritime Defence's (FLO-SJØ) project.

3.6.2 Benefits

The project will extend POSC Caesar's RDL with relevant equipment information and provide experience with exchanging data between SAP and ISO 15926 environments.

3.6.3 Organisation

The work will be organised as a project with a project manager located in the offices of DNV.

Norwegian Defence is interested in co-operation with the Oil and Gas industry on the development of reference data.

3.6.4 Project plan

The project starts April 2003 and ends February 2004.

3.6.5 Deliverables

The project shall deliver a structure database according to ISO 15926, both software and equipment information.

3.6.6 Maintenance and enhancement

This extension of POSC Caesar's Reference Data Library (RDL) will be available for all members of POSC Caesar for at least 12 months before some or all of it becomes public available through ISO 15926. POSC Caesar's membership fees will cover the costs of maintenance of this extension.

3.6.7 Costs

POSC Caesar's part of the project is restricted to EUR 0.04 million. VAT is not included.

3.6.8 Funding

The Norwegian Defence Department is funding this project.

3.7 Reference data library for piping

3.7.1 Objectives

There is an ongoing collaboration activity between suppliers, EPC and oil companies to standardise the classification of article codes for piping and piping parts. This work is primarily based on NORSOK standard for piping and valves, but includes proprietary views as well. The reference data of this work shall be included in POSC Caesar's reference data library and in due time become a part of ISO 15926. POSC Caesar's RDS will be used to establish mapping options between different proprietary classification systems existing today.

The NORSOK's standard for piping and valves is given on the web site: http://www.nts.no/norsok/.

3.7.2 Benefits

This is an important step forward to make NORSOK's standard for piping and valves a part of the global process industry including oil and gas. Furthermore, establishing mapping possibilities between existing proprietary solutions today will make the piping information much more accessible for sharing and exchange across phases, organisations and geographical distances.

The solution providers will make these results available for the end-users. Suppliers, engineering and oil companies will benefit from improved work processes.

3.7.3 Organisation

The work will be organised as a project with a project manager and a steering committee. Discipline and POSC Caesar technology competence shall be available through out the entire project period. The staff will be located in the offices of POSC Caesar, Bærum.

A global Technical Advisory Network (TAN) will be established that consists of skilful engineers from the solution providers, and companies funding the project.

3.7.4 Project plan

The project will be divided into manageable and well-defined activities with deliverables. The priorities and deadlines will be defined according to the needs of the industry.

The project starts when funded.

3.7.5 Deliverables

The project shall deliver reference data in batches according to a defined schedule. Furthermore, the project shall deliver solution for handling the mapping between different existing classification systems today.

3.7.6 Maintenance and enhancement

This extension of POSC Caesar's Reference Data Library (RDL) will be available for all members of POSC Caesar for at least 12 months before some or all of it becomes public available through ISO 15926. POSC Caesar's membership fees will cover the costs of maintenance of this extension.

3.7.7 Costs

The total costs of this project are estimated to EUR 0.2 millions. VAT is not included.

The RDL-work will require 1000 man-hours to an hourly rate of EUR 125, plus EUR 50 000 in software and 15% in overhead costs.

3.7.8 Funding

The Norwegian Operators will be asked to fund this project.

4 PISTEP in 2003

PISTEP and/or members of PISTEP have proposed two organisational issues and two projects:

4.1 Establishing mechanism for operating RDL Peer Groups

4.1.1 Introduction

The POSC Caesar Reference Data Library was originally generated through the efforts of a number of peer groups comprising engineering domain specialists. Over the last few years it has been expanded using data generated by a number of funded projects where specialist engineers have validated the data.

It is accepted that new content must be reviewed before being added to the RDL and this is best carried out using the 'Peer Group Review' process. The process by which peer groups operate must be carefully developed and tested in order that this does not become a bottleneck in the library expansion process.

4.1.2 Scope

To develop and document a process by which the ERDL can be extended. This must fit within the framework set out in the draft for ISO 15926 parts 4,5 &6.

To test the method using proposed additions to the current RDL

To prepare guidelines for distribution to PCA members

To identify/specify any software needed to support the agreed process

4.1.3 Constraints

The solution must not require any face to face meetings.

It shall be able to support global participation across multiple time zones

It shall have no bottlenecks – e.g. no comment means acceptance/approval.

4.1.4 Schedule & Resources

To be decided

4.1.5 Participants

Any voluntary contribution from EPISTLE members. It is considered important that Andries Van Renssen is involved as he led the original peer group activities.

4.1.6 Other Opportunities

If a common peer review process can be established across both Steplib and PCA RDL's then this could facilitate the process of merging.

4.2 Some principals for setting up and running an ISO Register for Industrial Reference Data

4.2.1 Introduction

The Process Industries (including Oil and Gas) have developed a generic data model that is being standardised as ISO15926-2. A generic data model needs reference data to give domain specific semantics, and considerable work has been undertaken to develop a Reference Data Library under the auspices of POSC Caesar, STEPlib, and EPISTLE. Proposals have been developed as parts 4, 5, and 6 of ISO15926 for an ISO Register to become the formal home for this work.
One aspect that has caused contention is the business model under which a Register would run, as well as who might run it. This paper attempts to address these issues following discussions with some of the interested parties. The objective is to make a proposal that can be reviewed and improved based on comments received.
Comments on this document (supportive or critical) are actively sought. Silence is taken as consent.

4.2.2 Big Principles

There are four big principles:

1. The Register should be free at the point of use.

Note: An issue here is that ISO owns the copyright for the Register content. In the past it was expected that ISO would require a charge on use of the Register. At the SC4 meeting in San Diego, a resolution was passed by SC4 requesting ISO that certain SC4 standards were made freely available on the Internet. ISO15926 was one of the standards named in the resolution. As yet there has been no response, but other subcommittees have been successful in making such requests.

2. The organisations providing services should have both substance and competence.

Note: Substance here means being financially substantial and sound.

3. Those charges necessary should be for adding data to the Register. Sponsorship and advertising are means of funding that might reduce the charging requirement.
4. The operation of the Register should be on a not-for-profit basis.

4.2.3 The Elements to a Register Solution

There are a number of elements that go into providing a register, and in principle different, or different types, of organisation, could support these elements. There is one major subdivision of these elements into those that are related to Register Operation – Register Administration and making its content available, and those that are Content Developers. The key elements are:

4.2.3.1 Register Operation

- **Internet Service Provider** – to provide reliable access to the Register and provide the servers and infrastructure to run the Register software.
- **Software Provider** – to provide (develop and maintain) the software that supports the Register and its management.
- **Software Operator** – to provide operational support for the Register and users of it.
- **Register Administrator** – to operate the administration process around the Register as defined in Parts 5 & 6 of ISO15926.

4.2.3.2 Register Development

- **Register Guardians** – to ensure the quality and consistency of the Register, and to develop technical guidelines for Reference Data Proposals. This group would also be responsible for responding to issues raised against Register content and determining what remedial action is required (though not necessarily carrying it out).
- **Reference Data Developers** – to develop and propose new Reference Data for inclusion in the Register.
- **Domain Experts** – to develop and provide engineering domain validation of proposed Register content.

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The following section looks at these roles in more detail, the qualifications to play the role, and funding considerations.

4.2.4 The elements in detail

4.2.4.1 Internet Service Provider

Role

To provide reliable access to the Register and provide the servers and infrastructure to run the Register software.

Qualifications

A stable organisation with a proven capability of providing the necessary services. It could be a company that specialises in providing these services to third parties, or a company that has this capability as part of its business.

Funding and Management

This is an item that will need funding. The Register Administrator would probably manage the service provision.

4.2.4.2 Software Provider

Role

To provide (develop and maintain) the software that supports the Register and its management.

Qualifications

A software vendor/developer with a proven track record of product development, and that is financially sound. Where available, package software that is configured should be preferred to bespoke software because of the impact on total lifecycle costs.

Funding and Management

The costs of software will need funding. The Register Administrator would probably manage the service provision.

4.2.4.3 Software Operator

Role

To provide operational support for the Register and users of it. This involves both a helpdesk service, and an operations service to make the Register available to defined levels of service.

Qualifications

An organisation with a track record of delivering operational services to a defined level of service.

Funding and Management

These costs need funding. The Register Administrator would probably manage the service provision.

4.2.4.4 Register Administrator

Role

To operate the administration process around the Register as defined in Parts 5 & 6 of ISO15926.

Qualifications

An organisation of substance and with experience in operating quality processes to a defined level of service. An ability to scale operations to match the level of Reference Data being proposed for the Register would be critical. Organisations like Lloyd's Register, DNV, and BV have been mentioned as suitable.

Funding and Management

These costs need funding. The Register Administrator would be accountable to ISO.

4.2.4.5 Register Guardians

Role

To ensure the quality and consistency of the Register, and to develop technical guidelines for Reference Data Proposals. This group would also be responsible for responding to issues raised against Register content and determining what remedial action is required (though not necessarily carrying it out).

Qualifications

The Register will operate within the ISO Process, this means that proposals for inclusion within the Register will be available for public scrutiny. Equally, the public may raise issues concerning Register content. The people that do this will be appointed to the task by the organisations they represent to protect their organisations interest in the quality of the Register content. In essence then there are no qualifications for this role.

Funding

Funded by those organisations that see it within their interests to assure the quality of the Register.

4.2.4.6 Reference Data Developers

Role

To develop and propose new Reference Data for inclusion in the Register.

Qualifications

New Reference Data is likely to be created by projects. Reference Data Developers are those with the technical expertise to support these projects in facilitating the development of reference data and preparing the formal proposals for inclusion. Qualification is by convincing the customer to pay you to do the work.

Funding

Funding would be by those organisations wishing to add data to the Register.

4.2.4.7 Domain Experts

Role

To provide engineering domain validation of proposed Register content. This includes both providing expertise in the development of Reference Data and in reviewing Reference Data prepared by others either as a proposal or existing Register content

Qualifications

Domain Experts are people considered by the organisations sponsoring the development of Reference Data to have relevant expertise in the domain in which the Reference Data falls.

Funding

Domain Experts are funded by the organisations sponsoring the development or review of Reference Data.

4.2.5 Discussion and Conclusions

4.2.5.1 Funding

The costs that need funding seem to divide into two parts:

1. "Fixed" annual operating costs that relate to software, infrastructure and overall management.
2. "Variable" costs that relate to the administration of the Registration Process that will tend to vary with the amount of Reference Data being submitted and issues being raised.

In covering these costs, a low risk model should be sought, i.e. neither large surpluses or deficits should be generated. One possibility could be to seek sponsorship/advertising to cover the "fixed" costs, and make a charge for operating the administration process on a scale of charges.

4.2.5.2 Process

The process for adding reference data or raising issues about existing content is essentially that of developing standards, but on a smaller scale. The effects of this are that progress cannot be blocked by inaction, and that all the workings are open to scrutiny by those who are concerned.

4.2.5.3 Conclusions

A straw man for how a Register could operate in practice has been presented. Comments, criticisms and support are sought to move this proposal forward.

4.3 EPISTLE's Information Handover Guide (IHG)

PISTEP together with USPI-NL and PlanSTEP (within the PIEBASE framework) are collaborating to develop version 2 of PISTEP's DHG.

Some of the issues are:
Document Type Name – a commonly used name for the type of document (e.g. Process and Instrumentation Diagram)

Alias – other names used to identify the type of document, this could include company specific names (e.g. P&ID, PEFS, Flowsheet etc.)

ERDL Reference – The reference code for the document type as allocated in the EPISTLE Reference Data Library (e.g. 901337)

Nature of Information Contained – A statement about the sorts of information that are shown on the document. (e.g. The Process and Instrumentation Diagram is a schematic that shows all the major items of equipment such as vessels and pumps. The process and service lines are shown in conjunction with the associated instruments. All of these items are allocated identification numbers that are shown on the diagram)

Primary Purpose of the Document – The purpose of the document as perceived by the originator/primary user. (e.g. The purpose of this drawing is to show products are being processed and controlled. The equipment, pipelines and valves are shown as a schematic to illustrate how the products are contained, transported, heated etc.)

Typical Links to the Document - Each document has a natural relationship to data and this defines the links. These links will generally be one or more of the following:

- individual physical asset/serial number (not applicable for P&ID)
- type of physical asset/model number (not applicable for P&ID)
- Type of functional object (e.g. pump)

- Individual functional object/tag (e.g. P-101)
- Parental functional object (e.g. Plant/Unit/System etc)
- Other organisational structures (e.g. discipline)

Links to Other Documents – Each document will have a relationship with other documents that are not apparent through a data link. Links to these related documents should be explicitly defined (e.g. to standards, best practices, procedures, activity models etc).

Lifecycle usage - For each document its relevance and usage at each phase of the lifecycle shall be considered and the following information developed.

Lifecycle Phase – Phase of Process Plant lifecycle that is being considered (e.g. Operations and Maintenance)
Uses of Document in this Phase – The usage of the document in the specific phase (e.g. The Process and Instrumentation diagram is used by the operations and maintenance engineers to assist them understand how the process operates and how it is controlled.)
Frequency of Read Access – For the P&ID this was assessed as High. However, a quantitative measure should be investigated (e.g. daily, weekly, occasionally etc.)
Frequency of Update – For the P&ID this was assessed as High. However, a quantitative measure should be investigated (e.g. daily, weekly, occasionally etc.)
Significance of Access to Lifecycle Phase – This defines how important the availability of the document is to the execution of the lifecycle phase. For the P&ID this was assessed as High. However, a quantitative measure should be investigated (e.g. essential, desirable etc.)
Speed of Availability – For the P&ID this was assessed as Immediate.
Interdependence of content with other data/documents – For the P&ID this is assessed as High
Recommended Form of Content – This defines the recommended form of the document taking the requirements of all of the lifecycle stages into consideration.

Additional comments

On reflection and following internal discussions please let me know you views on the following.

Addition of ***optimum form of content*** at each stage of the lifecycle – this will make selecting the recommended form easier.

Identify the ***originating lifecycle phase*** for the document and **exclude that phase from consideration when recommending the final form of content**. So, for example, an intelligent P&ID would only need to be retained in intelligent from if beneficial to a subsequent lifecycle phase.

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4.4 Reference data from BP's Angola Project

4.4.1 Objectives

The project shall map the reference data from BP's Angola Project building a Floating Production Storing Onboard (FPSO) vessel to ISO 15926 Part 4.

4.4.2 Benefits

The project will extend ISO 15926 Part 4 with relevant entities for oil and gas industry.

4.4.3 Organisation

The work will be organised as a virtual project with a project manager located in the offices of POSC Caesar.

4.4.4 Project plan

The project period will be a 4 weeks after starting.

4.4.5 Deliverables

The project shall deliver reference data to ISO 15926 Part 4.

4.4.6 Maintenance and enhancement

This extension of POSC Caesar's Reference Data Library (RDL) will be available for all members of POSC Caesar for at least 12 months before some or all of it becomes public available through ISO 15926. POSC Caesar's membership fees will cover the costs of maintenance of this extension.

4.4.7 Costs

POSC Caesar's part of the project is estimated to EUR 0.03 million. VAT is not included.

4.4.8 Funding

Hopefully, BP will be funding this project.

5 POSC Caesar (NO) in 2003

POSC Caesar (NO) decided in year 2002 to become a sleeping organisation until Norsk Hydro's Ormen Lange project started developing intelligent data sheets based on ISO 15926.

The prioritised order of focus on data standards to the Norwegian Petroleum Standardisation is:

1. "CAD symbol libraries" and "2D-CAD drawing standard"

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2. ISO 15926 and "Component identification system"
3. "Documentation for operation (DFO)" and "Coding system"

The DFO is similar to PISTEP's IHG.

6 Potential projects in year 2004+

Some of the proposals below will be on POSC Caesar work plan in 2004, but most of then are lacking committed funded for the time being and might well be postponed to 2005 or later.

6.1 New version of the Reference Data System (RDS)

6.1.1 Objectives

The project shall develop software for a Reference Data System based on IS version of the data model in ISO 15926 part 2. The solution shall consist of four folders that can be accessed independently - one folder for the formal ISO Register, one for proposals of additional reference data to the ISO Register, one folder for POSC Caesar's RDL and one for proposals of additional reference data to the POSC Caesar's RDL. The RDS system will be available on Internet.

6.1.2 Benefits

The project will provide the following benefits:

- ✓ Clear distinction between ISO Register and POSC Caesar's RDL
- ✓ Any company or person can make suggestion for adding reference data to the ISO Register
- ✓ All members of POSC Caesar can make suggestion for adding reference data to for adding reference data to POSC Caesar's RDL direct to the RDS independent of location

6.1.3 Organisation

The work will be organised as a project with a project manager located in the offices of POSC Caesar.

6.1.4 Project plan

The project starts as soon as it is funded and will have following milestones:

- ✓ Request for information
- ✓ Bidding round
- ✓ Signing contract
- ✓ Development of software
- ✓ Testing
- ✓ Acceptance

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6.1.5 Deliverables

The project shall deliver a user friendly RDS compatible with ISO 15926 Part 2, running on Internet and accessible through Explorer.

6.1.6 Maintenance and enhancement

The RDS system will be maintained and enhanced by POSC Caesar.

6.1.7 Costs

The total costs of this project are estimated to EUR 0.3 millions. VAT is not included.

6.1.8 Funding

As far as possible the funding should be based on membership dues, but major stakeholders are expected to support this significant improvement of the RDS.

6.2 Updating the POSC Caesar 's RDL to IS version of ISO 15926

6.2.1 Objectives

The project shall map existing RDL to the new RDS in such a way that it becomes conformant with ISO 15926 Part2 (IS).

6.2.2 Benefits

The project will provide the following benefits:

- ✓ Reference data in ISO 15926 Part 4 in conformance with IS version of the data model
- ✓ Reference data in POSC Caesar's RDL in conformance with IS version of the data model

6.2.3 Organisation

The work will be organised as a virtual project with a project manager located in the offices of POSC Caesar.

6.2.4 Project plan

The project starts as soon as it is funded.

6.2.5 Deliverables

The project shall deliver updated set of reference data for the ISO Register and for POSC Caesars RDL.

6.2.6 Maintenance and enhancement

POSC Caesar's membership fees shall cover the costs of maintenance of the reference data.

6.2.7 Costs

The total costs of this project are estimated to EUR 0.2 millions. VAT is not included.

6.2.8 Funding

The major stakeholders will be asked to fund this project.

6.3 European Pipeline Integrity Management Systems (ePIMS)

6.3.1 Background

POSC Caesar participated in pipeline project "Industry Standard for Pipeline Data Management" (ISPDM) and had the responsibility for delivering the relevant reference data. The ISPDM project tried emerging data warehousing and web technologies standards in order to create a web enabled data warehouse of pipeline information. It is a EURO 1.6 millions - multi-company project, funded to EURO 1.0 millions by the European Commission (EU) and scheduled to be completed in mid 2002. The project consortium is Thales Geosolutions, Andrew Palmer & Associates, PrismTech, POSC Caesar Association and Rosen Engineering.

To demonstrate the advantages of an open standard for data management the project created a test application to access, analyse and query data. The application was based on open standards and operates in the familiar desktop environment. It complied with the ISO 15926 standard. This allowed many engineering, asset and GIS applications to link easily to the database. A sample of these applications was also modified to operate against the database. A simple web browser front-end allowed access to data.

The breadth and richness of the content is far greater than any existing system and will thus greatly enhance development and effectiveness of related pipeline life-cycle activities including:

- Asset management
- Risk integrity assessment and maintenance
- Remnant life prediction
- Trend/probabilistic analysis
- Streamlining the supply chain
- Creating e-commerce opportunities
- Environmental impact and safety studies and regimes

6.3.2 Objectives

The objectives of this new project is to extend the reference data library for building and operating pipelines such that it covers all the requirements in EU's Directives for safe operation.

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6.3.3 Benefits

A reference data library for building and operating pipelines will make the pipeline information much more accessible for sharing and exchange across phases, organisations and geographical distances.

The solution providers will make these results available for the end-users. Suppliers, engineering and owner companies will benefit from improved work processes.

6.3.4 Organisation

The work will be organised as a project with a project manager located in the offices of DNV, Bærum.

6.3.5 Project plan

The project will be divided into manageable and well-defined activities. The priorities and deadlines will be defined according to the needs of the sponsors of the project.

The project starts up as soon as it has been funded.

6.3.6 Deliverables

The project shall deliver reference data in accordance with the project plan.

6.3.7 Maintenance and enhancement

This extension of POSC Caesar's Reference Data Library (RDL) will be available for all members of POSC Caesar for at least 12 months before some or all of it becomes public available through ISO 15926. POSC Caesar's membership fees will cover the costs of maintenance of this extension.

6.3.8 Costs

This is a major project and its total budget will be decided by EU spring 2004, but it is estimated to some EUR 5.0 millions.

6.3.9 Funding

BP, DNV, Gassco and 3-4 more companies are funding the project proposal and are expected to fund 50% of the total project costs. The remaining 50% is expected to be funded by EU.

6.4 Reference data library for operation and maintenance

6.4.1 Objectives

This project will extend the reference data for real time operation and maintenance of offshore production facilities by utilising the benefits of the close collaboration between PLCS (Product Life Cycle Support) organisation and POSC Caesar.

PLCS is a major endeavour sponsored by the defence and aerospace industries planning to use the POSC Caesar's Reference Data System for storing reference data (http://www.plcsinc.com/).

6.4.2 Benefits

As the offshore industry is turning more and more to the use of remote support and remote control/operation, it is important that the industry has a common well-defined set of reference data for operation and maintenance. This will improve the HSE factors and speed up the availability of effective collaboration tools between off- and onshore.

The solution providers will make these results available for the end-users. Suppliers, engineering and oil companies will benefit from improved work processes.

6.4.3 Organisation

The work will be organised as a virtual project with a project manager located in the offices of POSC Caesar, Bærum. There will be arranged workshops in the beginning of the project to bring the participants up to speed and later to create ownership for the solutions.

A global Technical Advisory Network (TAN) will be established that consists of skilful engineers from the solution providers, NTS/NORSOK, and/or companies funding the project.

6.4.4 Project plan

The project will be divided into manageable and well-defined activities with deliverables every second month. The priorities and deadlines will be defined according to the needs of the industry.

The project starts up as soon it is funded.

6.4.5 Deliverables

The project shall deliver reference data in batches every second month after start up.

6.4.6 Maintenance and enhancement

This extension of POSC Caesar's Reference Data Library (RDL) will be available for all members of POSC Caesar for at least 12 months before some or all of it becomes public available through ISO 15926. POSC Caesar's membership fees will cover the costs of maintenance of this extension.

Any further enhancement of the RDL has to be funded separately based on POSC Caesar's not-for-profit pricing system. Enhancement can be run as a timely on-demand service.

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6.4.7 Costs

The cost of extending the RDL with one instance depends on its location in the RDL system. For an instance in the core reference data library (CRDL) it normally takes 30 minutes and for an instance in the standard reference data library (SRDL) 15 minutes.

For example, an extension of the RDL with 5000 instances will cost approximately EUR 0.3 millions. VAT is not included.

Note: *The project manager will review the scope of the project together with the sponsors before it starts up and provide a final budget.*

6.4.8 Funding

The operators will be asked to fund this project.

6.5 Harmonising NORSOK's data standards and ISO 15926

6.5.1 Objectives

The project shall develop a new NORSOK standard based on ISO 15926 replacing six multidiscipline NORSOK standards today. The new NORSOK standard will focus on life cycle facility information and use the results of project 1-5 above and project 8 below, plus additional work to move coding and cost counting into the reference data of ISO 15926.

6.5.2 Benefits

The new approach makes it possible to share information across disciplines and phases and to collaborate across organisational borders and geographical distances. The standard will also be compliant with an ISO standard and it will be a necessary condition to ensure interoperability between data and software in a life cycle perspective.

The solution providers will make these results available for the end-users. Suppliers, engineering and oil companies will benefit from improved work processes.

6.5.3 Organisation

The work will be organised as virtual project with a project manager. There will be arranged workshops in the beginning of the project to bring the participants up to speed and later to create ownership for the solutions.

A Technical Advisory Network (TAN) will be established that represents the six NORSOK standards to be replaced plus a representative from POSC Caesar.

6.5.4 Project plan

The project will be divided into manageable and well-defined activities with deliverables every second month.
The new NORSOK standard will consist of:

1. Introduction
   - TIFR
2. Pre-concept phase
   - SCCS
   - subsurface
3. Concept phase
   - simulation
   - subsurface
   - coding
4. Design
   - 3D
5. Procurement
   - data sheets
6. Fabrication
   - 3D
7. Installation
8. Follow-up engineering
   - change management
9. Commission
   - MC&C
10. Handover
    - data sheets
    - DFO
11. Operation and maintenance
    - real time
    - subsurface
12. Modification
13. Abandonment and restoring of site

And all the six existing NORSOK standards will be included in these chapters. SCCS, Coding and Mechanical Completion and Commission will be included in POSC Caesar's RDL.

The priorities and deadlines will be defined according to the needs of the industry.

The project starts as soon as it is funded.

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6.5.5 Deliverables

The project shall deliver a new NORSOK standard in 2 years after start up.

6.5.6 Maintenance and enhancement

This extension of POSC Caesar's Reference Data Library (RDL) will be available for all members of POSC Caesar for at least 12 months before some or all of it becomes public available through ISO 15926. POSC Caesar's membership fees will cover the costs of maintenance of this extension.

Any further enhancement of the RDL, has to be funded separately based on POSC Caesar's not-for-profit pricing system. Enhancement can be run as a timely on-demand service.

6.5.7 Costs

The total costs of this project are estimated to EUR 0.3 millions provided project 1-6 and 8 are completed. VAT is not included.

The RDL-work will require 1500 man-hours to an hourly rate of EUR 125; writing of the standard requires additional 500 hours to an hourly rate of EUR 125 plus 15% in overhead costs.

Note: *The project manager will review the scope of the project together with the sponsors before it starts up and provide a final budget.*

6.5.8 Funding

NTS/NORSOK and the offshore industry will be asked to fund this project.

6.6 Engineering Data Integration Across Cultures (EDIAC)

6.6.1 The business case

The process and energy industries are conservative industries. The oil companies are the major drivers in these industries for implementing new technology and improve work processes. Major global oil companies such as ExxonMobil, Shell, BP, ChevronTexaco, TotalFinaElf and Statoil are now using technology based on different version of ISO 15926. Major global engineering companies such as Bechtel, Flour, Halliburton (KBR) and Foster Wheeler are also using this technology and some of them claim that this is the future of engineering. Furthermore, there are solution providers such as CADCENTRE, EPM Technology, Enterprise Software Solutions Inc. (ESSI), Intergraph and VisiWorld that provide engineering software and content providers such as Pearson & Harper and Tektonisk that provide engineering equipment information based on ISO 15926. This standard is now proven technology.

The challenges of most industries are lack of effective information sharing across different professional groups within a corporation, between partners in projects, between suppliers and

buyers and so on. Studies done in the 90-ies have shown that effective sharing of engineering information in developing and operating an asset can reduce the total costs with 20-30%. So many corporations are now establishing engineering data warehouses to cope with this problem, but lack of common terms and lack of interoperability between engineering systems, ERP systems and B2B systems makes this process slow and very costly.

Specifically, many B2B market places recognise today that the most difficult problem to solve is the establishment of product catalogues. Most vendors define their products and services in proprietary terms that generate confusion and misunderstanding when integrated into common catalogues. In some cases the vendors are "persuaded" to use existing classification systems, but none of them are consistent and rich enough to cover the needs. Furthermore, it is very costly for the vendors to accommodate to many different classification systems.

The purpose of this project is to address these business challenges by translating the technology to several official languages of the European Union and accommodating the solutions for communications to local (National) needs. Furthermore, the technology will be extended to cover all major engineering disciplines in the process and energy industries. In close collaboration with some major stakeholders among solution providers and end-users more interoperable life cycle engineering information from Europe will be on Internet.

Europe has spent many 100s of man-years in developing ISO 15926, but is now lagging behind in implementing and using this powerful technology.

6.6.2 Objectives

The EDIAC project shall:

1. Extend the RDL of ISO 15926 to include the most common engineering data sheets for handover (project to operation) and procurement in France, Germany, Italy and UK
2. Translate the ISO 15926 to French, German and Italian
3. Develop software for generic data sheets compliant with ISO 15926 for the data sheets in item 1 above
4. Involve major market drivers and some competent solution providers

By using Internet, this approach will extend the capabilities of this technology to integrate engineering data across disciplines, phases, geographical distances, linguistic communities and different cultures and thus:

1. Facilitate the implementation of "think global, act local" strategy
2. Enable products and services tailored to national and linguistic communities
3. Reduce cost and shorten time-to-market
4. Facilitate effectively re-use of information in engineering and in procurement
5. Facilitate extension of the methodology to other industries and cultures

6.6.3 Benefits

6.6.3.1 The EDIAC project

The most important tools for communication in the engineering community are the data sheets. This project establishes a common solution across languages and cultures based on the technology of the international standard ISO 15926 and standard engineering data sheets that reduce costs, shorten time-to-market, secure effective re-use of engineering information and facilitate the implementation of "think global, act local" strategy.

6.6.3.2 Benefits for the owner operators

The owner operators are the market drivers by the fact that they are funding all major activities and their behaviour settles in many respects the conditions in the market and its level of cost. An agreement among the owner operators to use a common industry data standard such as ISO 15926 for exchange and sharing of engineering information will substantially reduce cost of the development project, handing over data from project to operation, in operation and in procurement.

The EDIAC project will provide following benefits:

1. Product Catalogues
   The generic data sheets from the Data Sheet Library (DSL) make it easy to exchange information from suppliers to oil companies. The DSL will be built up gradually starting with data sheets for field instrumentation, piping, valves, mechanical equipment and so on. In due time these will data sheets be a part of the suppliers' product catalogues.
2. Enterprise Resource Planning
   The proprietary reference data in the Material Master of ERP systems can partially be replaced with the RDL register of ISO 15926. The facility information should be stored in an engineering data warehouse compliant to the standard and be the primary data source to all other applications. The data warehouse should be connected to the ERP system and all engineering applications in-house. This will increase quality and the availability of these types of data for all engineering processes including procurement.
3. Most oil companies are using SAP so it might be a common task among the oil companies to collaborate with SAP to get installed a part of the RDL of ISO 15926 in the Material Master.
4. At the moment each ERP has been set up with different template sets. Therefor the EU businesses are not sharing templates, which also mean they are not sharing other benefits.
5. B2B
   The most challenging problem for B2B marketplaces (such as Trade-Ranger) is the establishment of a consistent product and service catalogues. The extension of the RDL to cover all disciplines plus a DSL covering the standard data sheets will provide necessary tools

for creating such catalogues. Maintenance and further enhancement of the RDL and DSL will be much simpler as soon as the foundation has been created.

6. This project through collaboration with companies such as Tektonisk and Pearson & Harper will provide good examples that this really can be done and they ought to be candidates for serving such marketplaces.

7. Data for operation
   It is documented many times that the quality of engineering data are much higher when they are captured when created the in the project. They can than be re-used in the project and later in operation.

8. The cost of handing data over from the development project to operation should be substantially reduced using the technology provided by EDIAC. Establishing engineering data warehouse during the project phase based on the RDL and the DSL will create the necessary foundation for transferring all needed data to operation in due time.

9. Operation
   The engineering data warehouse in-house being the source for facility information to all other applications can easily be updated by linking up to e-content providers such as Tektonisk or Pearson & Harper or direct to the suppliers using data sheets from the DSL.

10. Re-use in modification projects
    There is very little tradition in the oil and gas industry to re-use information in connection with modification projects. The establishment of engineering data warehouse based on standards such as ISO 15926 makes this possible.

11. Re-use in new concept phases
    There is very little tradition in the oil and gas industry to re-use information in connection with evaluation of concepts. The establishment of engineering data warehouse based on standards such as ISO 15926 makes possible.

12. Re-use in new projects
    There is very little tradition in the oil and gas industry to re-use information in connection with new project. The establishment of engineering data warehouse based on standards such as ISO 15926 makes possible.

6.6.3.3 Benefits for the engineering companies and suppliers

1. A simpler world
   An agreement among the owner operators to use a standard – common RDL and at most 2-3 data sheets pr equipment/function will reduce the cost of information handling substantially in the engineering community and thus reduce the total costs of projects by some 20-30%.

2. Large market
   Translating the standard to the most common languages will create larger markets. Furthermore, it is important that the DSL also includes data sheets based on standards created in USA.

6.6.3.4 Benefits for the solution providers

1. A simpler world
   Many solution providers have seen the benefits with ISO 15926. Stability of the data model for years and a set of concepts that is consistent across disciplines and has high quality make the standard interesting for them.

   The next major step now is to include templates such as data sheets. This will increase the take-up process of the standard and make it easier to implement it.

2. Larger market
   Translating the standard to all major languages is a necessity and so is the inclusion of data sheets in the DSL from other sources than NORSOK.

6.6.3.5 Benefits for EU

1. Product Matching
   Using standard datasheets and a common equipment specification standard will help remove some selection complexity. This will help ensure the right products are used for the right application. This should further help process to operate without harm to people and the environment.

2. Obsolescence
   When products become obsolete it will be easier to identify alternative products across the EU.

6.6.4 Organisation

A Steering Committee with representatives from the Co-Ordinator and the Contractors will be established. A Chairman and a Co-Chairman will be appointed. Project Manager will not be a part of the Steering Committee but function as a Secretary. A majority of the Steering Committee constitutes a quorum. Simple majority makes all decisions.

The Project Manager reports to the Steering Committee.

The project will be organised in 4 subprojects. For each subproject a part time Subproject Manager from the industry with at least 5-10 years experience in the relevant topic will be

appointed. The Subproject Manager reports to the Project Manager. In addition, for subproject 1 and 3 the staff will consist of 2-3 persons and at least one of them has to be a part of POSC Caesar's RDL team to secure consistency and quality in the RDL and in the DSL. This staff should be located in the offices of POSC Caesar Services AS, Bærum, Norway. Subproject 2 and 4 can be carried out more as virtual organisations.

A Technical Advisory Network (TAN) will be established for each subproject except subproject 4, which consists of skilful discipline engineers from companies funding the program. The members of this network will participate in meetings, act as advisors and monitor the subprojects. TAN is reporting to the Project Manager.

Subproject 1 Extension of the RDL

- Require involvement from oils and EPC contractors – need discipline engineers in all disciplines covered in the subproject
- Need tools for speeding up the process – RDS + ?

Subproject 2 Translation to French, German, Italian

- Need engineers from those countries to participate
- Need tools for speeding up the process

Subproject 3 Generic Data Sheets

- Need people working with the Epistle Templates
- Need tools for speeding up the process

Subproject 4 Take-up plans

- Need commitment from solution and content providers

6.6.5 Project plan

The project will be divided into 4 subprojects each with activities/modules for every 3 months with concrete deliverables. Each subproject will define its activities in a Gantt diagram.

6.6.5.1 Subproject 1 Extension of the Reference Data Library for ISO 15926

For each equipment/function, the extension of the RDL will be based on at most three data sheet from three different cultures/participating countries. The engineering disciplines to be covered are:

(#Data Sheets)

- Field Instrumentation / Metering (35) (Example: http://www.nts.no/norsok/)
- Mechanical Equipment (30)

- Piping and Valves incl. Materials (1150)
- Process Systems (25)
- Electrical Systems (9)
- Telecommunication Systems (4)
- Lifting Equipment (10)
- Safety Equipment (18)
- Material Data (38)
- Mechanical Completion and Commission (38)

This subproject will start January 1, 2003, and will be finished July 1, 2004.

6.6.5.2 Subproject 2 Translating the ISO 15926 to German, French and Italian

This subproject will be run in close collaboration with National institutions in German, France and Italy. Modern technology for translating between languages will be used.

This subproject will start July 1, 2003, and will be finished July 1, 2004.

6.6.5.3 Subproject 3 Generation of generic data sheets compliant with ISO 15926

This subproject will generate generic data sheets to the Data Sheets Library (DSL) for each equipment/function covered in subproject 1 for 3 cultures in compliance with ISO 15926. The methodology will be based on ISO 15926, ISO 18876 and the Epistles Templates.

This subproject will start January 1, 2002, and will be finished November 1, 2004.

6.6.5.4 Subproject 4 Implementation of the results in engineering software and content providers

This subproject will present plan for how and when the results of subproject 1, 2 and 3 can be implemented in commercial products and be general available for the European Communities. Some of the major market drivers and the solution providers will staff this project.

This subproject will start July 1, 2003, and will be finished October 1, 2004. Deliverables

The project shall deliver reference data in batches every month starting October 2003.

6.6.6 Deliverables

Subproject 1 shall deliver reference data batches every 3 months and cover all reference data on the data sheets within the defined disciplines. Subproject 2 shall translate ISO 15926 to English, German, French and Italian. Subproject 3 shall generate generic data sheets compliant with ISO 15926 every 3 months and for each equipment/function in four languages and three cultures.

Subproject 4 shall develop a committed plan for take-up of these deliverables in the marketplace within 2005.

The deliverables of this project will be general available on http://www.posccaesar.com/. POSC Caesar shall have the Intellectual Property Rights to these deliverables (most of this material will in due time be the property of ISO as ISO 15926).

6.6.7 Maintenance and enhancement

This extension of POSC Caesar's Reference Data Library (RDL) will be available for all members of POSC Caesar for at least 12 months before some or all of it becomes public available through ISO 15926. POSC Caesar's membership fees will cover the costs of maintenance of this extension.

Any further enhancement of the RDL, has to be funded separately based on POSC Caesar's not-for-profit pricing system. Enhancement can be run as a timely on-demand service.

6.6.8 Costs

Based on experience from previous data sheet projects in POSC Caesar it requires approximately 30 minutes per reference data instance starting up a new discipline area. For a similar data sheet from another culture will require 15 minutes per reference data instance. Expected hourly rate of for a senior engineer is Euro 132, - so each instance will cost Euro 66, -. With a total of 150 non-piping data sheets with an average of 75 entities per data sheet total cost for generating the RDL for these data sheets in one culture will approximately be Euro 750 000, -. There will be some overlapping between the data sheets from the different cultures so it is reasonable to estimate only 300 additional data sheets for the 3 other cultures and these costs are Euro 750 000, -.

The cost of translating ISO 15926 plus the RDL from this project to French, German and Italian are Euro 300 000.

The cost of generating 450 generic data sheets are estimated to Euro 700 000.

The 1100 piping data sheets are more similar in nature and can be handle more effectively. Generating the reference data and the generic data sheets will require a total of Euro 1100 000 for all 4 cultures.

The total budget for the project is Euro 3.6 millions.

This cost estimate is based on the most effective way of organising the project. If some sponsors would like to build in ownership or educational aspects for its own employees, this can easily be dealt with, but any extra costs have to be paid directly by those sponsors.

NB: There is substantial overlap between the EDIAC project and Norsk Hydro's Ormen Lange project and Statoil piping project. After these have been completed, the additional costs of running the EDIAC project will be approximately Euro 1.9 millions.

6.6.9 Funding

This project needs sponsors from Italy, German, and France to get 50% EU-funding. Furthermore, the sponsors should be a mixture of suppliers, EPC and oil companies, e-content providers and solution providers.

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