FORM

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Engineering a Co-operative Inter-Enterprise Management Framework Supporting Dynamic Federated Organisations Management

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ABSTRACT

This Annex to FORM Deliverable 10 contains the questionnaires used in evaluating the development aspects of the Inter-Enterprise Management Framework.

KEYWORDS

Evaluation, Validation, Trial, Test cases, Requirement assessment, J2EE, XML, Development Aspects, Methodology, Architecture, Technology

See http://www.uhc.dk/form/index.htm for further details

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FORM

Deliverable D11

Validation of Inter-Enterprise Management

Annex B, Development Aspects

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1 Introduction

This Annex to Deliverable 10 contains the questionnaires which were used to assess the development aspects of the Inter-Enterprise Management Framework. The questionnaires in sections 2, 3, 4 and 5 were used to assess the Logical Architecture. The questionnaires in sections 6 and 7 were used to assess the Technology Architecture. The questionnaire in section 8 was used to assess the development methodology .

2 Architectural Principles and Stakeholder Benefits

This section contains the questionnaire form for the WP5 assessment of the architectural Principles of the FORM ODF and their related Benefits. The architectural Principles and the related Benefit are given in section 2.

The Principles should be listed in the questionnaire with the IDs shown (i.e. P1-P13). The Benefits should be preferable **not** be shown with their IDs, though these are used in identifying responses to questions for later analysis.

The questionnaire consists of general questions, questions related to each Principle and questions related to each Benefit. Each question is numbered to aim analysis of the responses. Though the numbers should preferably not be displayed to the respondent, the listing of responses for analysis should be tagged with these numbers. In the numbers given for the questions in subsections 1.2, <PID> should be replaced with the appropriate Principle ID, e.g. "P1" and in subsection 2 <BID> should be replaced with the relevant Benefit ID, e.g. "B-SI-1-P1". The questions should be placed after the relevant Principle or Benefit.

Ideally the answers the question G3 should result in the questions related to Benefits of stakeholders that the respondent is not claiming to belong to should be disabled, since they don't need to fill those in.

2.1 General questions at the beginning of the questionnaire?

G-1) Name:

<free text>

G-2) Organisation:

<free text>

G-3) Characterise your organisation as one or more the following: Standards Body, Independent Software Vendor (e.g. software component vendor), Management System Integrator/Developer or Service Provider:

Tick boxes for <Standards Body, Independent Software Vendor, Systems Integrator, Service Provider>

2.2 For each principle ask the following questions:

<PID>-1) Is the principle clearly explained?

<Yes | No>

1a) If 'no', how could the explanation be improved?

<Free text>

<PID>-2) How important to your organisation do you regard this principle?

<Essential | Important | Useful | Irrelevant | Don't Know

<PID>-3) Are there additional benefits an architecture adhering to this principle may bring your organisation, if so please describe them?

<No | Don't Know| Yes + free text>

<PID>-4) Are there any disadvantages an architecture adhering to this principle may impose on your organisation?

<No | Don't Know| Yes + free text>

2.3 For each benefit ask the following questions

<BID>-1) Is this benefit clearly explained?

<Yes | No>

<BID>-1a) If 'no', how could the explanation be improved?

<Free text>

<BID>-2) How important do you think the benefit is to the relevant stakeholder type?

<Essential | Important | Useful | Irrelevant | Don't Know

<BID>-3) Do you expect the principle to provide the benefit, if not explain why?

<Yes | Don't Know| No + free text>

2.4 Final General Questions

G-4) Are there additional principles you would see as desirable or essential to be addressed by the FORM Open Development Framework before making use of it in your organisation, if so please describe them?

<No| Don't Know| Yes + free text>

3 Text for Architectural Principles and Stakeholder Benefits

This text should be used for the internal version of the questionnaire.

The ODF is structured around the following architectural principles, which aim to provide the associated benefits for ODF stakeholders:

P1: Management Systems are software systems that perform some task related to communications or systems management in an operational environment. They are constructed partially or fully from Building Blocks (BB).

P1-B1 (SI): System Integrators are able to reuse the same BB in different Management Systems.

P1-B2 (SI): System Integrators are able to potentially source BBs from multiple ISVs thus stimulating competition in the BB market and reducing costs.

P2: Building Blocks are pieces of software that are atomic units of deployment (one can be replaced in a running system without requiring other BBs to be replaced).

P2-B2 (SI): System Integrators may more smoothly upgrade individual pieces of software with less impact on the overall system.

P2-B3 (SP): Service Providers suffer less system downtime due to software upgrades.

P3: Building Blocks are atomic units of system management.

P3-B1 (SI): System Integrators may define common system management interfaces at the granularity of a BB, which in turn may stimulate the development of a market in system management applications which can exploit such common system management interfaces.

P3-B2 (SP): Service Providers may gain more comprehensive system management capabilities, either packaged with Management Systems bought from System Integrators, or, if open system management interfaces are supported, through third party system management applications.

P4: Building Blocks may support multiple interface types termed Contracts.

P4-B1 (ISV): ISVs are able to hide details of a BB's internal design and to changes to its implementation since only the Contracts are visible to BB users. This help protects the ISVs intellectual property and helps in the management of software upgrades.

P4-B2 (ISV): ISVs are able to use multiple interface types to allow separate BB user views to be given separate Contracts, which can then have different access rights. This supports courser BB granularity.

P4-B3 (SI): System Integrators are able to hide details of a BB's internal design and to changes to its implementation since only the Contracts are visible to BB users. This hides details of BB implementation from BB reusers in a Systems Integrator's organisation

P4-B4 (SI): System Integrators are able to use multiple interface types to allow separate BB user views to be given separate Contracts, which can then have different access rights. This supports courser BB granularity.

P5: A Contract may support multiple business operations.

P5-B1 (SB): Standards Bodies are able to group related functions into a unit of specification and documentation release.

P5-B2 (ISV): ISVs are able to group related functions into a unit of specification and documentation release.

P5-B3 (SI): System Integrators are able to group related functions into a unit of specification and documentation release.

P6: The Logical Architecture does not *prescribe the technology to be used in implementing Building Blocks or their Contracts.*

P6-B1 (ISV): ISVs are not constrained in the technology they use to implement BBs and can better match this to changing market demands.

P6-B2 (SI): System Integrators are not constrained in the technology they use to implement BBs and can better match this to the changing needs of Service Providers.

P6-B3 (SI): System Integrators are able to encompass multiple technologies in a single system, but in turn face the problem of potentially address interworking between different Contract technologies. This, however, is seen as an inevitable aspect of Management System development.

P7: Contracts may be defined in a technology neutral form or a technology specific form.

P7-B1 (SB): Standards Bodies can mediate industry agreements on Contract in a technology neutral form without necessarily excluding specific target technologies, thus potentially making the specification more long-live in the face of rapid technology churn.

P7-B2 (ISV): ISVs can use the technology neutral form to support the same Contract specification for customers across a range of technologies and over changes in popular technologies.

P7-B3 (SI): System Integrators can use the technology neutral form to support the same Contract specification for reuse within its organisation across a range of technologies and over changes in popular technologies.

P7-B4 (SI): System Integrators are able to compare Contract specification presented in the technology neutral form without being forced into an early, potentially excluding, technology decision and with the knowledge that any implementations obtained may offer stable functionality over technology changes.

P8: A BB implements a Contract in a technology specific form. When mapped from a Contract specification in a technology neutral form, this must be performed using an explicitly described transform.

P8-B1 (ISV): ISVs may use the explicit transform between the technology neutral and technology specific forms to allow different technologies (or even different profiles of the same technology) to be used to implement the same Contract to match market requirements.

P8-B2 (SI): System Integrators may use the explicit transform between the technology neutral and technology specific forms to allow different technologies (or even different profiles of the same technology) to be used to implement the same Contract to match different system's integration requirements.

P8-B3 (SI): System Integrators may use knowledge of the technology transforms used to implement different Contracts in managing the separation of technology interworking from model interworking in any integration solutions used.

P8-B4 (SB): Standards Bodies may specify Contracts that may remain stable over changes in interaction technologies.

P8-B5 (SB): Standards Bodies may be able to mediate agreements on sets of transforms from Contracts specified in a technology neutral form to ones in a range of technology specific forms

P9: Different Contracts may support different interface definition paradigms, though one Contract specification can only support one such paradigm. Interface definition paradigms include, but are not limited to, model-centric, operation-centric and message-centric. Different paradigms are typically suited to specific ranges of technologies.

P9-B1 (SB): Standards Bodies are able to design Contracts that take advantage of the features of a specific interface definition paradigm while still being independent of individual interaction technologies that implement that paradigm. This may help tailor and therefore target a Contract specification at particular range of integration techniques.

P9-B2 (ISV): ISVs are able to design Contracts that take advantage of the features of a specific interface definition paradigm while still being independent of individual interaction technologies that implement that paradigm. This may help tailor a Contract specification at particular range of integration techniques targeting a market sector.

P9-B3 (ISV): System Integrators are able to design Contracts that take advantage of the features of a specific interface definition paradigm while still being independent of individual interaction technologies that implement that paradigm. This may help tailor a Contract specification at particular range of integration techniques used in target systems.

P10: The definition of the information that is passed via a Contract should be published separately to the Contract specification.

P10-B1 (SB): Standards Bodies are able to encourage commonality in Contract specifications by both using and publishing industry agreements on information that may be passed via a Contract.

P10-B2 (ISV): An ISV is able to encourage better interworking between the BBs it produces by separately publishing and reusing the information passed over Contracts it designs.

P10-B3 (ISV): An ISV is able to encourage better interworking between the BBs it produces and BB from other sources, by reusing information definitions published by other BB developers or, in particular, by Standards Bodies.

P10-B4 (SI): A System Integrator is able to encourage better interworking between the BBs it develops by separately publishing and reusing the information passed over Contracts it designs.

P10-B5 (ISV): An ISV is able to encourage better interworking between the BBs it develops and BB from other sources, by reusing information definitions published by other BB developers or, in particular, by Standards Bodies.

P10-B6 (SI): System Integrators may be able to make quicker, more accurate selections of third party Contract implementations by comparing their separately published information content to information flow requirements identified in systems analyses.

P11: Functionally related Building Blocks can be grouped together for the purpose of software release.

P11-B1 (ISV): ISVs gain a level of release that retains the benefit of individual BBs as units of deployment, but which is better matched to the needs of sales and marketing, where a coarser level of functionality than that represented by a BB may be required.

P12: Building Blocks must be released with documentation describing: the related business context in which the BB is intended to operate and the analysis of this context that led to the identification of the BB and the design of the Contracts it uses.

P12-B1 (SI): System Integrators are able to select a BB against a systems business requirements and systems analysis.

P13: The behaviour of a Contract and interactions with the behaviour of other Contracts on the same BB may be modified at deployment- or run-time. Where this feature is offered it should use explicitly defined business-rules.

P13-B1 (ISV): ISVs may build user-controlled flexibility into a BB, thus enabling them to address a wider range of customer needs.

P1-B2 (SI): System Integrators may build more flexible behaviour into a BB, thus increasing the opportunity to reuse the same BB implementation in a number of different systems

P13-B3 (SI): System Integrators are more easily able to reconfigure the system they produce to meet changing requirements.

P13-B4 (SP): Service Providers are able to perform some reconfiguration of running systems to meet changing operational requirements.

4 Trial Workgroup Assessment

This questionnaire wascompleted by each Trail Workgroup Leader, in consultation if necessary with the other members of the group.

1) Please give your name and organisation:

<Name>, <Partner organisation>

2) Identify your Trial Workgroup:

Fulfilment-IES | Fulfilment-VPN | Assurance | Billing

3) Using the table below, identify the Contracts used in your Trial System and the Building Blocks (BB) that implement them.

For each Contract identify the interaction technology used to implement it (e.g. CORBA/IIOP) and the language used to define the contract interface signature (e.g. IDL):

Contract ID	**ID of Building Block implementing Contract**	**Interaction technology used to *implement* Contract (e.g. CORBA/IIOP) and interface signature format used to *specify* the Contract (e.g. IDL)**

4) Using the table below, identify any Interfaces implemented in your Trial System (including user interfaces) that were not documented as Contracts and describe any motivation for *not* defining this Interface as a Contract.

For each Interface identify the BB or non-BB subsystem that implemented it. For each Interface identify the interaction technology used to implement it (e.g. CORBA/IIOP) and the language used to define the contract interface signature (e.g. IDL):

Non-Contract interface	**Reason for not being defined as a Contract**	**BB or non-BB subsystem implementing interface**	**Interaction technology used to *implement* Interface (e.g. CORBA/IIOP) and interface signature format used to *specify* the Interface (e.g. IDL)**

4) Estimate the relative proportion of your system's *functionality* that is implemented both Building Blocks and non Building Block subsystems:

	Percentage of system functionality (must total 100%)
Building Blocks	
Subsystems	

5) For each Contract in your Trial System, use the table below to identify whether it is used only by other software within the System or may be used by software external to the System (or both) and to what extent, if any, it conforms to any standardised interface model:

Contract ID	**Used internal to the system, external or both**	**Used by: human, BB or non-BB system**	**Name any standard followed and degree of conformance (full or partial)**
	Internal | External | Both	Human | BB | System	

6) Do any of the Contracts produced by the workgroup refer to the same *information model Class Diagram when defining their Boundary information Model?*

Yes | No

6a) If Yes, use the table below to identify each shared Class Diagram and the number of information object classes in that diagram. For each Class Diagram, identify each Contract that refers to it and the number of information object classes from that diagram that the Contract actually uses:

Class Diagram Name	**Number of information objects in diagram**	**Contracts which refer to that class diagram (one per cell)**	**Number of information objects from class diagram used by Contract**

7) <u>Definition:</u> A Contract Set is a grouping of related Contract Specifications, published together to allow others to reuse those Contract Specification in developing management systems.

Using the table below, suggest one or more Contract Sets which could represent the Contract designs developed in your workgroup, giving a title and a brief description of the purpose and scope of applicability of the Set.

Identify the Contracts that should be in this Set, including ones from other workgroups if appropriate. Are there other Contract Specifications, as yet not defined in FORM, which you think would make the Contract Set more reusable, if so describe them?

Description of scope and purpose of Contract Set	Contracts from FORM in Contract Set	Other new Contracts in Set

8) <u>Definition:</u> A Building Block Group is a collection of BBs packaged together for the purposes of reuse either within the same organisation or a commercially sold software.

Using the table below, suggest one or more BB Groups that could represent the BB implementations developed within your group.

Identify the Building Blocks that should be in each Group, including ones from other workgroups if appropriate. Are there other BB, not developed in FORM, which you would think would make each BB Group more reusable, if so describe them?

Identify any Contracts offered by BBs in each Group that should be used only by *other* BBs in that Group and are not intended to be avaialbe to external uses of the BB in the Group.

Description of scope and purpose of Building Block Group	BBs from FORM in Building Block Group	Other new Building Blocks in Group	BB Contract internal to BB Group

5 BB Developer Assessment

This questionnaire was completed by each Building Block Developer. If a developer filled was involved in developing more than one BB, a separate questionnaire should be completed for each BB.

1) Please give your name and organisation:

Name, Partner organisation

2) Identify the Trial System workgroup your BB was developed for:

Fulfilment-IES | Fulfilment-VPN | Assurance | Billing

3) Identify the BB you developed

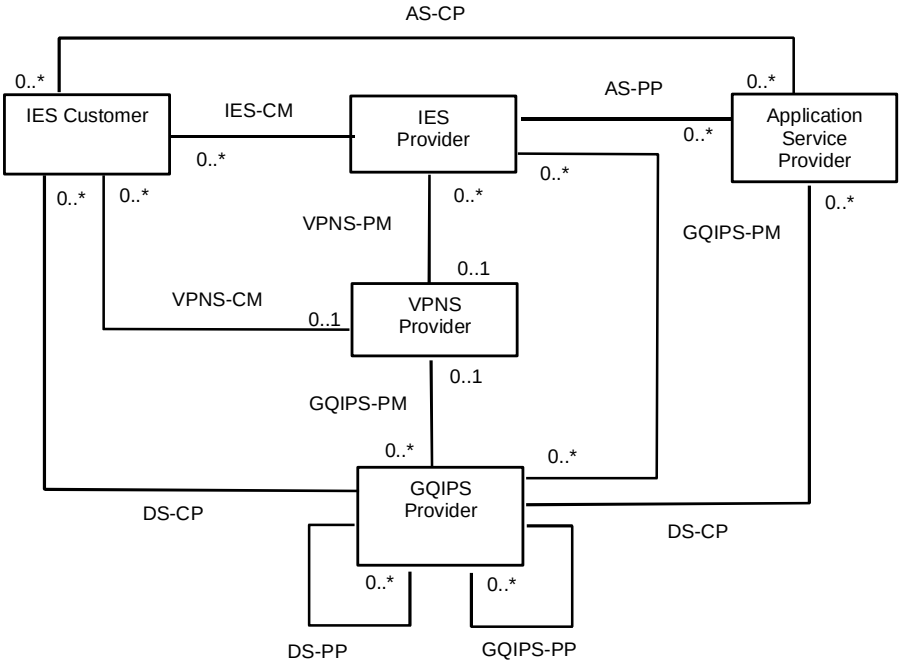
<Building Block ID>

4) Identify the type of analysis object or objects your BB was designed to support

Human Interaction Tier object | Process Automation Tier object | Enterprise Information Tier object

5) For each Contract specify, if applicable, the Reference Point supported by the Contract and the Business Role in which the corresponding BB participates for that Reference Point

Reference Points and Business Roles must be selected from the IES Business Role Model depicted below:



Contract ID	Reference Point supported by	The Business Role the BB participate in

	Contract if any	**supporting the Reference Point**

6) Definition: **The functional scope represented by a Reference Point is a function of the overall purpose of the Reference Point and the two Business Roles it connects.**

For each Contract supporting a Reference Point judge whether the scope of business application the Contract provides is limited the functional scope that reference point in the IES Business role Model or if it is more generic in nature. If you judge it to be more generic, attempt to define the functional scope the contract does apply to.

Contract ID	**More generic than Reference Point Scope (Yes or No)**	**If Yes, describe the nature of more generic scope of applicability**

7) For each Reference Point, if any, that your BB Contracts supports, attempt to describe any further Contracts (other than those already developed in FORM), that you think need to accompany your Contract in completing the functional scope of the Reference Point.

Reference Point ID/ Contract ID	**Description of other new Contracts that help your Contract complete the functional scope of the Reference Point**

8) For each Contract specify the number of explicitly defined information object classes that can be passed via the Contract, the number of operations it supports and if all the operations on each Contract are specified in an associate use case

Contract ID	**Number of information object classes supported by Contract**	**Number of separate operation that the Contract can perform**	**Is every operation in the Contract described in associate use case?**
			<Yes | No >

9) Can the behaviour of your BB be changed without modifying software code?

Yes | No

9a) If Yes, describe how and whether the change in behaviour effects just one contract or more than one Contract

<free text>

6 Technology Architecture Questionnaire

The following questions make up the technology architecture questionnaire:

1. On XML mediation, based on your implementation experience, explain in few lines the impact or advantage XML has brought in your system. {easier information mediation, easier components communication, etc..}

2. Explain in few lines the selection process, highlighting the impact of functional, non-functional and organisational criterion.

3. What was the impact of FORM Architecture principles on your technology choice or on your implementation?

   P2: Building Blocks are pieces of software that are atomic units of deployment (one can be replaced in a running system without requiring other BBs to be replaced or modified).

   P8: A BB implements a Contract in a technology specific form. When mapped from a Contract specification in a technology neutral form, this must be performed using an explicitly described transform.

   P9: Different Contracts may support different interface definition paradigms, though one Contract specification can only support one such paradigm. Interface definition paradigms include, but are not limited to, model-centric, operation-centric and message-centric. Different paradigms are typically suited to specific ranges of technologies.

   P11: Functionally related Building Blocks can be grouped together for the purpose of software release.

   P13: The behaviour of a Contract and interactions with the behaviour of other Contracts on the same BB may be modified at deployment- or run-time. Where this feature is offered it should use explicitly defined business-rules.

4. Based on GB909 BB requirement is there a specific requirement that impacted on your technology choice or implementation? **{See Annex A for list of requirements or refer to GB909 v3 on the TMF web site}**

5. How did you map your BB functional requirements to specific technology features?

7 Policy Assessment

This questionnaire eas completed by those who designed or implemented policy-related system in FORM.

The questionnaire should be completed using word and typing in the boxes and tables provided. Where applicable angled brackets ("< >") are used to indicate the type of information required. In places where responses should be from a predefined set, the possible answers are given, separated by a vertical line ("|").

1) Please give your name and organisation:

Name, Partner organisation

2) Identify the Systems or BBs where you applied policies:

<free text>

3) Identify the Policy Language Schema you used, e.g. DMTF or home made, and if an existing language was used, any restrictions or modification you applied

<free text>

4) Identify any specific Policy Conditions, Actions or Rules you used that were taken from an existing set, e.g. DMTF

<free text>

5) Using the table below, record the number of individual Policy Conditions, Policy Actions and Policy Rules you came up with, detailing which ones were actually implemented and exercised in you software and which ones were simple designed but not implemented

Policy Elements	**Designed**	**Implemented**
Policy Conditions		
Policy Actions		
Policy Rules		

6) Did your individual policies control the behaviour of: a single BB, the interactions of more than one BB or some non-BB software?

<one BB> | <several BBs> | <non-BB software>

7) How closely did the Conditions and Actions of your Policies related to the Contract Interfaces of your BBs ?

<free text>

8) Did the use of Policies impact on the design of your Contracts, if so how?

<free text>

8) What benefits and disadvantages did you find in using Policies compared to non-policy based approaches?

<free text>

8 FORM Business Process Driven System Modelling Guideline - Evaluation Form

This Questionnaire was used for assessing the development methodology.

Name of Participant (optional): _____

Indicate Systems for which modelling work was performed:e.g. F – A – B and/or modelling work - FA – FB – AB:

_____

Please indicate the Management System(s) with which you were involved (Trial and/or MCG):

_____

Please complete the questions below. For each question there are four possible answers provided, illustrating a range of possibilities. Unless specifically indicated, please tick the box which most accurately reflects your choice within the range provided. If you have a comment/qualification on any of the questions please fill in the comment box provided. The questions relate to the modelling work performed for the TRIAL systems and/or the MCG work.

1. Prior to the FORM project, please indicate your familiarity/expertise with Unified Modelling Language (i.e. UML Notations):

Expert	*Frequent use*	*Occasional Use*	*Never Used Before*
❑	❑	❑	❑

Optional Comment/Qualification:

2. Prior to the FORM project, please indicate your familiarity/expertise with Rational Unified Process

Expert	*Frequent use*	*Occasional Use*	*Never Used Before*
❑	❑	❑	❑

Optional Comment/Qualification:

3. How responsible were you for the System Modelling/Development?

Was Principally Responsible	*Responsible for subsystem or sub process development*	*Contributed to overall design/development*	*Review/Commented on Development*
❑	❑	❑	❑

Optional Comment/Qualification:

4. What role(s) did you principally play in the modelling/development of the Business Process Driven System ? (tick more than one role if appropriate)

Business Modelling/ Requirement Sepc.	*Design*	*Implementation*	*Managed /Reviewed Development*
❑	❑	❑	❑

Optional Comment/Qualification:

5. How helpful was the general FORM Business Model when Developing your system?

Highly Relevant	*Useful*	*Marginally useful*	*Not Relevant*
❑	❑	❑	❑

Please Comment why/why its was/wsa not useful:

6. When performing the Business Modelling Workflow, please rate the usefulness of the following: (Note: this work may have been done by some partners during an earlier phase of the Project i.e. during D4 or during MCG or trial development work)

	Highly Relevant	*Useful*	*Marginally useful*	*Not Relevant*
FORM Reference Architecture	❑	❑	❑	❑

	Highly Relevant	*Useful*	*Marginally useful*	*Not Relevant*
FORM Business Use Case(s)	❑	❑	❑	❑

	Highly Relevant	*Useful*	*Marginally useful*	*Not Relevant*
FORM Business Activity Diagrams	❑	❑	❑	❑

Please Comment why/why they were/were not useful:

7 How helpful was the development of the <u>Use Cases</u> for specifying your requirements for the MCG work or trial System development?

Very useful			*Useless*
❑	❑	❑	❑

Optional Comment/Qualification:

8. Identify the notation that you used (for requirements capture) and rate their importance in your Development

	Very useful			*Useless*
Use Case Diagram	❑	❑	❑	❑

	Very useful			*Useless*
Activity diagram & specification	❑	❑	❑	❑

	Very useful			*Useless*
Supplementary Req'ments	❑	❑	❑	❑

Please comment on any aspect of the Use cases that caused difficulty:

9. How useful were the G909 requirements for your Modelling/Development

Very relevant			*Totally irrelevant*
❑	❑	❑	❑

Optional Comment/Qualification:

10. How useful was the separation of the activities into 3 tiers (HIT,PAT, EIT) in the <u>early analysis and identification</u> of your system modelling ?

Very useful			*Very poor*
❑	❑	❑	❑

Optional Comment/Qualification:

11. When modelling the System Process, how useful were the UML activity diagrams in describing the control for for the intended system?

Very good in capturing system process control flow			*Very poor in capturing system process control flow*
❑	❑	❑	❑

Optional Comment/Qualification:

12. How useful were the (system process) activity diagrams in describing the <u>data flow</u> for the intended system?

Very good in capturing system process data flow ❑ ❑ ❑ ❑ *Very poor in capturing system process data flow*

Optional Comment/Qualification:

13. How useful was the External Information Model in representing the <u>shared information</u> for the intended system?

Very good ❑ ❑ ❑ ❑ *Very poor*

Optional Comment/Qualification:

14. How difficult was it to map system activities onto pre-defined Building Block Contracts?

Very Little Difficulty ❑ ❑ ❑ ❑ *Very difficult*

Optional Comment/Qualification:

15. How difficult was it to map system information flows onto pre-defined Building Block Contracts Boundary Information Models?

Very Little Difficulty ❑ ❑ ❑ ❑ *Very difficult*

Optional Comment/Qualification:

16. How difficult was it to design the Collaboration Diagram(s) which represented the BB Contact intractions (based on the system activity diagrams).

Very Little Difficulty ❑ ❑ ❑ ❑ *Very difficult*

Optional Comment/Qualification:

17. Did the BB Contract Collaboration Diagram(s) represent/describe enough information regarding the interactions between BB Contracts which support the system process to be implemented?

Perfect level of Represention ❑ ❑ ❑ ❑ *Very Poor level of represention*

Optional Comment/Qualification:

18. Did you have to model one or more system objects to provide extra functionality which was not supported by existing Building Block Contracts ?

YES ❑ **NO** ❑

If YES then comment on the difficulty of integrating this modelling work into the BB Contract collaboration diagram (representing the BB Contract interactions).

Very Little Difficulty ❑ ❑ ❑ ❑ *Very difficult*

Optional Comment/Qualification:

19. How difficult was it to map the Building Block Contracts Collaboration diagrams onto a BB Collaboration diagram (ready for implementation)

Very Little Difficulty ❑ ❑ ❑ ❑ *Very difficult*

Optional Comment/Qualification:

20. How long did you spend studying the Business Process Driven Development Guideline?

No Time At all	*Just learned it from the project presentations*	*Spent between . 1-5 hrs Reading Guideline*	*Spent Greater than 5 reading guideline*
❑	❑	❑	❑

Optional Comment/Qualification:

21 How useful were the Models/Artifacts (that you actually developed), for designing and modelling your management system (leave box unticked if artifact not developed)

	Very useful			*Not Useful at all*
Business Use case modelling	❑	❑	❑	❑
Business Activity (process) Modelling	*Very useful* ❑	❑	❑	*Not Useful at all* ❑
System activity (process) models	*Very useful* ❑	❑	❑	*Not Useful at all* ❑
BB Contract Shared Information Models	*Very useful* ❑	❑	❑	*Not Useful at all* ❑
BB Contract Collaboration Diagrams	*Very useful* ❑	❑	❑	*Not Useful at all* ❑

BB Collaboration Diagrams	*Very useful* ❑	❑	❑	*Not Useful at all* ❑

Please comment on the usefulness of atrefacts for describing the system to other developers/FORM partners:
Were there any extra artifacts which you would like to include in the BB description ?

22. Was the methodology clear in describing the following workflows in the system development cycle

	Very Clear			*Very Unclear*
Business Use case modelling	❑	❑	❑	❑
Business Activity (process) Modelling	*Very Clear* ❑	❑	❑	*Very Unclear* ❑
System activity (process) models	*Very Clear* ❑	❑	❑	*Very Unclear* ❑

BB Contract	*Very Clear*			*Very Unclear*
Collaboration Diagrams	❑	❑	❑	❑
BB Contract Shared	*Very Clear*			*Very Unclear*
Information Models	❑	❑	❑	❑
BB Collaboration	*Very Clear*			*Very Unclear*
Diagrams	❑	❑	❑	❑

23. Having Modelled or developed System (e.g. for Trial 2 or the MCG) what features of the development process require more explanation/guidance (indicate within each box provided what issues were not adequately dealt with).

Business Modelling

Requirements Analysis

System Process Modelling

Shared Information Modelling

BB Contract Colaboration Modelling

BB Collaboration Modelling

Testing of BB functionality

24. Were there any aspects of the System Modelling/ Development which you think were not covered in the Guideline that should have been covered?

Please give details:

_____

_____

_____

25. Any other comments:

_____

_____

_____

Thank you for completing this questionnaire.

