

# XML Schema Design and Management Guide

## Part III: XML Schema Management Guide

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# Table of Contents

<b>1. INTRODUCTION .....</b>	<b>4</b>
1.1. OBJECTIVES OF THIS GUIDE .....	4
1.2. STRUCTURE AND AUDIENCE OF THIS GUIDE .....	4
<b>2. REVIEW OF DATA INTEROPERABILITY MEASURES .....</b>	<b>5</b>
2.1. DEVELOPMENT AND USE OF COMMON SCHEMAS AS A MEANS TO ENHANCE DATA INTEROPERABILITY .....	5
2.2. OBJECTIVES OF THE CENTRAL DATA ALIGNMENT EXERCISE .....	5
2.3. A B/D'S ROLE IN THE DEVELOPMENT AND USE OF COMMON SCHEMAS .....	5
2.4. USAGE POLICY GOVERNING THE USE OF COMMON SCHEMAS .....	6
<b>3. COMMON SCHEMA MANAGEMENT .....</b>	<b>7</b>
3.1. OVERVIEW OF THE COMMON SCHEMA MANAGEMENT PROCESSES .....	7
3.2. COMMON SCHEMA LIFE CYCLE .....	8
3.3. ASSIGNING COMMON SCHEMA MATURITY LEVELS .....	8
3.4. THE PARTIES INVOLVED IN THE MANAGEMENT OF COMMON SCHEMAS .....	10
3.4.1. XMLCG .....	11
3.4.2. Common Schema Liaison Officers .....	12
3.4.3. Common Schema Task Force .....	12
3.4.4. IFCG Standing Office .....	13
3.5. HANDLING REQUESTS TO CREATE OR CHANGE A COMMON SCHEMA .....	13
3.5.1. Components of a Request .....	13
3.5.2. The Phases in Handling a Change or Creation Request .....	14
3.5.3. Detailed Process Flow .....	16
3.5.4. Common Schema Development Phase .....	20
3.5.5. Common Schema Review Phase .....	23
3.5.6. Publication Phase .....	24
3.6. REQUEST HARMONIZATION .....	25
3.6.1. Detailed Harmonization Flow .....	26
3.6.2. Major Activities .....	27
3.7. HANDLING REQUESTS TO RETIRE A COMMON SCHEMA .....	29
3.8. HANDLING REQUESTS TO CHANGE CONTROLLED VOCABULARIES .....	29
3.9. PERIODIC REVIEW OF THE MATURITY LEVEL OF PUBLISHED COMMON SCHEMAS .....	29
3.10. REGISTRATION OF THE REUSE OF COMMON SCHEMAS .....	29
<b>4. PROJECT SCHEMA MANAGEMENT .....</b>	<b>30</b>

1	<b>5. THE CENTRAL REGISTRY.....</b>	<b>31</b>
2	5.1. OBJECTS REGISTERED IN THE CENTRAL REGISTRY .....	31
3	5.2. FUNCTIONS OF THE CENTRAL REGISTRY .....	31
4	5.3. IMPLEMENTING THE CENTRAL REGISTRY .....	31
5	5.4. DATA ELEMENT ATTRIBUTES MAINTAINED IN THE COMMON SCHEMA DATA DICTIONARY..	31
6	5.5. INFORMATION MAINTAINED ON PROJECTS WITH OPENLY ACCESSIBLE PROJECT REGISTRY .	35
7	5.6. INFORMATION MAINTAINED ON CONTROLLED VOCABULARIES / CONTROLLED CODE LISTS	35
8		

# 1. Introduction

## 1.1. Objectives of this Guide

As described in Part I of this guide (Overview), project teams implementing joined-up services should adopt industry standards and Common Schemas where applicable, and contribute project-defined data elements that have potential for reuse by other projects for central alignment. Project teams are also encouraged to share Project Schemas among themselves to maximize their reuse.

This part of the guide describes how data elements that have potential for reuse are aligned centrally to yield Common Schemas. Both the alignment process and the organization that manages the alignment are described.

This part of the guide also describes some considerations for the management of Project Schemas (and their related controlled vocabularies).

The registry plays an important role in facilitating the sharing of reusable schemas. A Project Registry facilitates the sharing of Project Schemas whereas the Central Registry facilitates the sharing of Common Schemas. The last section of this part of the guide describes how Common Schemas (i.e. the information models and the corresponding XML Schema Definition (XSD) code of the centrally aligned data elements) and related controlled vocabularies are managed in the Central Registry. A similar approach may be adopted for the management of Project Schemas.

## 1.2. Structure and Audience of this Guide

The audience of this part of the guide (i.e. part III) is expected to have read part I (Overview) and fully understands the strategy and overall mechanism for enhancing data interoperability.

Section 2 of this part of the guide reviews the data interoperability measures and proposes a usage policy for the Common Schemas. This section should be read by all project teams and all other parties involved in the central alignment of data elements, namely the Common Schema Liaison Officers, the Interoperability Framework Coordination Group (IFCG) Standing Office and the XML Coordination Group (XMLCG).

Section 3 covers how the data elements submitted for central alignment are handled. This section should be read by all project teams and those parties involved in the central alignment of data elements. Project teams can get a better understanding of their role as a contributor of reusable data elements.

Section 4 covers the considerations for managing Project Schemas. This section should be read by all project teams.

Section 5 describes the Central Registry and should be read by all project teams in order to understand how they may best utilize the Central Registry.

## 2. Review of Data Interoperability Measures

### 2.1. Development and Use of Common Schemas as a Means to Enhance Data Interoperability

As explained in Part I of this Guide (Overview), data interoperability can be enhanced by **service-wide reuse of information models** where appropriate, and one way to enhance the reusability of information models is to **conduct data alignment centrally** for data elements that has potential for reuse across B/Ds.

The centrally aligned data elements are then managed in the form of carefully specified information models together with their corresponding XSDs, collectively referred as Common Schemas.

### 2.2. Objectives of the Central Data Alignment Exercise

The objectives of the central data alignment exercise is to gain B/Ds' consensus on how specific data elements should be represented when they are exchanged between B/Ds.

This representation does not necessarily correspond to how that data element is maintained in a B/D's internal system; it is the representation of a data element that B/Ds agree to :

- generate in the form of (before they send a piece of data to another B/D); and
- accept in the form of (when they receive a piece of data from another B/D).

If the aligned representation does not correspond to how a data element is maintained in a B/D's internal system, the B/D would have to perform data conversion between the transmitted data and the data maintained in its internal system.

### 2.3. A B/D's Role in the Development and Use of Common Schemas

A B/D is expected to contribute / cooperate in the following ways :

- **suggest what data elements should be aligned centrally** : the project teams working for B/Ds are highly recommended to identify from their projects those data elements that have potential for reuse in other projects and submit the information models of these data elements for central alignment;
- **provide business requirements during the data alignment process so that the aligned information model can address as many B/D's requirements as possible** : B/Ds are highly recommended to participate directly in the alignment of specific data elements that they intend to use;
- **participate in consensus making bodies to collaboratively derive solutions and resolve conflicts** : B/Ds are highly recommended to nominate Common Schema Liaison Officers to provide requirements and comments during the data alignment process, they should also nominate experienced XML adopters to join the XMLCG to help steer the data alignment processes; and
- **adopt Common Schemas (i.e. the centrally aligned data elements)** : When the Common Schemas are well established, a B/D should adopt a Common Schema if it can fulfill the project's requirement, taking into consideration the definition, representation, and usage contexts of the Common Schema.

## 2.4. Usage Policy Governing the Use of Common Schemas

The establishment of Common Schemas may take time to evolve and become effective. For example, the identification of a new Common Schema may induce fine-tuning in the semantic definition or the content restriction of an existing Common Schema to differentiate the two. The more Common Schemas we have developed and the more experience we accumulate in the development and use of Common Schemas, the more effective will we become in enhancing data interoperability.

As we are at an embarking stage of the central data alignment exercise, a more flexible Common Schema usage policy may be more effective in promoting the use of Common Schemas. We can assign maturity levels to the Common Schemas to indicate their actual or perceived reusability, and project teams should take this maturity level into consideration when deciding whether to adopt a Common Schema.

The maturity levels are proposed to be :

**0 – agreed in principle** : B/Ds have generally agreed on the definition, representation, and usage context of the concerned data element, but among those B/Ds that believe the data element might be applicable to their business, the majority anticipate that they require further investigation and analysis before adopting the Common Schema

**1 - recommended for reuse** : B/Ds have generally agreed on the definition, representation, and usage context of the concerned data element, and among those B/Ds that believe the data element might be applicable to their business, the majority anticipate that they are ready to adopt the concerned data element in future projects

**2 - matured for reuse** : B/Ds have generally agreed on the definition, representation, and usage context of the concerned data element, and among those B/Ds that believe the data element might be applicable to their business, the majority anticipate that they are ready to adopt the concerned data element in future projects. In addition, the concerned data element has already been used in some projects and the information model of this data element has remained stable for a certain period.

The recommended usage policy for Common Schemas is that when project teams implement the information exchange interface between B/Ds or between a B/D and an external party, they are required to adopt matured Common Schemas (i.e. those with maturity level 2) that match with their project requirements, taking into consideration the definition, representation, and business contexts associated with the Common Schemas. If project teams decide not to adopt matured Common Schemas whose definition, representation, and business contexts match with their project requirement, they are required to seek exemption approval from the Head of their IT Management Unit, and to report approved exemptions to the IFCG Standing Office. This arrangement is consistent with the IF compliance policy.

The introduction of maturity levels to Common Schemas has implication on the Common Schema management processes, which will be explained in the next section.

## 3. Common Schema Management

### 3.1. Overview of the Common Schema Management Processes

Basically, a request for creating or changing a Common Schema would have to go through a consensus making process involving all interested B/Ds before the Common Schema would be registered in the Central Registry.

Upon receiving a request, the IFCG Standing Office will invite the stakeholders of the concerned data element to join hands with the Standing Office and form a Common Schema Task Force to handle the request and, where appropriate, propose candidate information model and XSD (referred collectively as candidate Common Schema) for the concerned data element.

The candidate Common Schema proposed by the Common Schema Task Force would be passed to all Common Schema Liaison Officers for comment. The Common Schema Liaison Officers are expected to check whether the definition, naming and usage contexts of the data element are appropriate and, if their B/D needs to use that data element in their business, whether their B/D can exchange data in accordance with the representation (including usage rules) of the data element at system interfaces that interact with the systems of other B/Ds or external parties. The Common Schema Liaison Officers would also be requested to indicate their preference on the maturity grading for that candidate Common Schema. Considerations for indicating such preference are explained in section 3.3

When all comments from the Common Schema Liaison Officers have been addressed, the XMLCG will review the candidate Common Schema and decide to approve it or not.

Apart from the Common Schema itself, all controlled vocabularies associated with that Common Schema need to go through the same consensus making process.

In the process of developing a candidate Common Schema, or revising a candidate Common Schema in response to comments from the Common Schema Liaison Officers, the Common Schema Task Force may encounter conflicts which it fails to handle. Under such circumstances, the Common Schema Task Force may recommend technical options and seek advice or support from the XMLCG.

Common Schemas and their associated controlled vocabularies approved by the XMLCG will be published in the Central Registry. If the new Common Schema is a new version of an existing Common Schema, then the existing version would be marked as 'retired' (i.e. inactive).

Published Common Schemas are reviewed periodically (every 6 months) to assess whether its maturity level may be promoted to a higher level. The review mechanism is explained in section 3.3.

Project teams may also request to retire a published Common Schema, although this is unlikely to happen often. The Common Schema Liaison Officers have to be consulted before the retirement request is submitted to the XMLCG for endorsement.

### 3.2. Common Schema Life Cycle

A Common Schema's life cycle has three stages: 1) Candidate Common Schema, 2) Published Common Schema, and 3) Retired Common Schema. Table 3-1 summarizes the definition of each stage and the triggers that bring about a transition to that stage.

Table 3-1: The Three Stages of a Common Schema's Life Cycle

Stages of a Common Schema's life cycle	Definition	Triggers that bring about a transition to this stage
<i>Candidate Common Schema</i>	The information model and XSD proposed by a Common Schema Task Force for consideration by the Common Schema Liaison Officers and the XMLCG.	Upon receiving a Common Schema Creation or Change Request, a Common Schema Task Force will be formed to handle the request. If the request can be smoothly handled, the Common Schema Task Force will generate a candidate Common Schema for consideration by the Common Schema Liaison Officers and the XMLCG.
<i>Published Common Schema</i>	The information model and XSD approved by the XMLCG for publishing in the Central Registry as a Common Schema.	The candidate Common Schema has been reviewed by the Common Schema Liaison Officers and approved by the XMLCG.
<i>Retired Common Schema</i>	A Common Schema which has become inactive.	The Common Schema has been replaced by a newer version or its retirement has been requested by a project team and approved by the XMLCG.

### 3.3. Assigning Common Schema Maturity Levels

Each published Common Schema is associated with a maturity level indicating the maturity / reusability of that Common Schema. The maturity levels can be 0-agreed in principle, 1-recommended for reuse, or 2-matured for reuse.

Newly published Common Schemas are either graded as level 0 or level 1 depending on B/Ds' preferences indicated through their Common Schema Liaison Officers.

In the process of developing a candidate Common Schema, the Common Schema Liaison Officers will be requested to indicate whether they support a level 1 maturity grading for that Common Schema. A Common Schema Liaison Officer should assess whether the data element would be applicable to his B/D's business, and if so, whether his B/D is ready to adopt the data element.

The following table summarizes the conditions guiding how a Common Schema Liaison Officer should indicate his preference :

Table 3-2: The Conditions Guiding how a Common Schema Liaison Officer Should Indicate His Preference on Maturity Settings

Preference for	Conditions guiding how a Common Schema Liaison Officer should indicate his preference
Maturity Level 0	The data element is relevant to the business of the Common Schema Liaison Officer's B/D and he anticipates that his B/D require further investigation and analysis before adopting the Common Schema



Preference for	Conditions guiding how a Common Schema Liaison Officer should indicate his preference
Maturity Level 1	The data element is relevant to the business of the Common Schema Liaison Officer's B/D and he anticipates that his B/D is ready to adopt the concerned data element in future projects
No preference	The data element is irrelevant to the business of the Common Schema Liaison Officer's B/D

1

2 B/Ds that have nominated Common Schema Liaison Officers would be requested to express

3 their preference of maturity grading of the Common Schema through one of their Common

4 Schema Liaison Officers. If the number of B/Ds indicating a preference for level 1 is greater

5 than the number of B/Ds indicating a preference for level 0, the maturity level of that

6 Common Schema will be published as 1.

7 In addition, the maturity level of published Common Schemas will be reviewed every 6

8 months and, where appropriate, Common Schemas at level 0 may be promoted to level 1, and

9 those at level 1 may be promoted to level 2. The following table summarizes the criteria for

10 triggering a promotion assessment and the condition for a promotion.

11 Table 3-3: The Promotion Related Criteria Used in the Periodic Review of Common Schemas

Prevailing maturity level	Criteria for triggering a promotion assessment during the periodic review conducted every 6 months	Criteria for promotion to the next higher maturity level
0	The Common Schema is being used by at least 3 B/Ds	The number of B/Ds that prefer a maturity grading of 1 is greater than the number of B/Ds that prefer a maturity grading of 0
1	No additional criteria	The Common Schema is being used by at least 5 B/Ds; and The Common Schema has not been updated for the previous 6 months

12

13 If a Common Schema at maturity level 1 is in use by 5 or more B/Ds and that Common

14 Schema has not been updated for the previous 6 months, its maturity level will automatically

15 be set to 2.

16 If a Common Schema at maturity level 0 is in use by 3 or more B/Ds, the Common Schema

17 Liaison Officers of B/Ds would be requested to indicate whether they support a promotion of

18 the maturity grading of that Common Schema. The Common Schema Liaison Officers should

19 take into consideration the conditions mentioned in Table 3-2 when indicating their

20 preference. If the number of B/Ds that prefer a maturity grading of 1 is greater than the

21 number of B/Ds that prefer a maturity grading of 0, the maturity level of that Common

22 Schema will be re-graded as 1.

23 When the maturity level of a Common Schema is set to 1, the distribution of B/Ds'

24 preferences on the maturity level could be published so that project teams have more

25 supporting information in deciding whether to adopt a Common Schema. Such distribution

26 information may be expressed as the percentage of B/Ds that preferred 0, 1, or had indicated

27 no preference.

28 A published Common Schema, regardless of its maturity level, will be retired when it is

29 replaced by a newer version.

In addition, a published Common Schema will be retired when its retirement request is approved by the XMLCG, although this is unlikely to happen to Common Schemas with maturity levels 1 and 2.

Figure 3-1 shows the condition for transition from one maturity level to the next or to the 'retired' stage

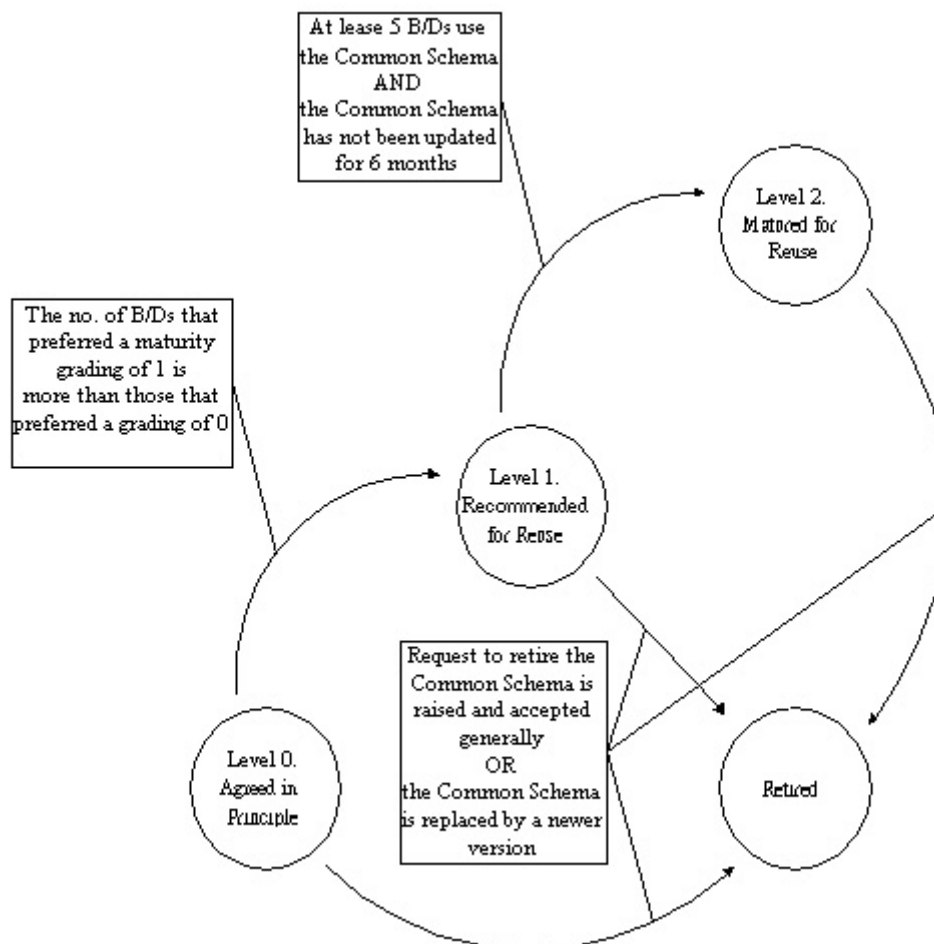


Figure 3-1: Common Schema Maturity Levels

### 3.4. The Parties Involved in the Management of Common Schemas

The XMLCG, the Common Schema Liaison Officers, the Common Schema Task Forces, and the IFCG Standing Office are involved in the management of Common Schemas. Figure 3-2 summarizes the functions of each body.



Figure 3-2: Management Bodies and their functions

### 3.4.1. XMLCG

The XMLCG is convened by the Information Technology Services Department. It comprises :

- Members from B/Ds that are involved in joined-up projects; and
- Advisors from major XML user organizations in the HKSAR.

The functions of the XMLCG, in the context of enhancing data interoperability, are summarized as follows :

Table 3-4: Details of the Functions Provided by XMLCG in relation to enhancing data interoperability

Functional Area	Details
<i>Strategy Formulation</i>	<ul style="list-style-type: none"> <li>● Set the strategies for enhancing data interoperability</li> <li>● Derive the mechanisms and methodologies for enhancing data interoperability, including mechanisms for Common Schema management</li> </ul>
<i>Process Steering</i>	<ul style="list-style-type: none"> <li>● Supervise the Common Schema management processes</li> <li>● Provide ruling on technical options proposed by the Common Schema Task Forces to resolve conflicts between B/Ds</li> </ul>
<i>Solution Approval</i>	<ul style="list-style-type: none"> <li>● Review and approve candidate Common Schemas</li> <li>● Review and approve controlled vocabularies that are used by Common Schemas</li> <li>● Review and approve Common Schema retirement requests</li> </ul>
<i>Domain Expertise</i>	<ul style="list-style-type: none"> <li>● Provide sector-specific domain expertise</li> </ul>

### 3.4.2. Common Schema Liaison Officers

The Common Schema Liaison Officers are nominated by B/Ds to reflect individual B/D's requirements and comments on draft information models for data elements submitted for central alignment.

The Common Schema Liaison Officers may provide their input either during the Common Schema Review Phase (i.e. after the Common Schema Task Force has produced a candidate Common Schema), or at the Common Schema Development Phase (i.e. during which a candidate Common Schema is developed) by participating directly in the Common Schema Task Forces that are of interest to them.

The Common Schema Liaison Officers also help to determine the maturity grading of Common Schemas.

A B/D may nominate one or more Common Schema Liaison Officers to provide requirements and comments..

The functions of the Common Schema Liaison Officers are summarized as follows:

Table 3-5: Details of the Functions Provided by Common Schema Liaison Officers

Functional Area	Details
<i>Solution Formulation</i>	<ul style="list-style-type: none"> <li>Join specific Common Schema Task Forces to help develop Common Schemas that are of interest to the Common Schema Liaison Officer's B/D</li> </ul>
<i>Solution Review</i>	<ul style="list-style-type: none"> <li>Review candidate Common Schemas to ensure relevant Common Schemas meet a B/D's business requirement</li> </ul>
<i>Consultation</i>	<ul style="list-style-type: none"> <li>Help to determine the maturity grading of Common Schemas</li> <li>Provide inputs during the harmonization process</li> <li>Assess whether Common Schema retirement requests should be honoured</li> <li>Assess whether controlled vocabulary Change Requests should be honoured</li> </ul>

### 3.4.3. Common Schema Task Force

Common Schema Task Force refers to the collaborative effort to handle individual Common Schema Creation or Change Request. When a request is received, the IFCG Standing Office will invite the following parties to join hands with the IFCG Standing Office to organize a Common Schema Task Force to handle the request :

- the Submitting Group / project team;
- all Common Schema Liaison Officers (Liaison Officers are encouraged to join if their B/D is a potential user of the concerned data element); and
- in the case of a Change Request, the project teams using the concerned Common Schema.

The role of the project teams and the Common Schema Liaison Officers in the Common Schema Task Force is mainly to provide business requirements and to agree on an information model. The IFCG Standing Office will translate the information model into XSD and will deal with subsequent logistics.

The functions of a Common Schema Task Force are summarized as follows:

Table 3-6: Details of the Functions Provided by the Common Schema Task Force

Functional Area	Details
<i>Common Schema Development</i>	<ul style="list-style-type: none"> <li>● Conduct requirement/impact analysis and harmonization process over the Common Schema Creation/Change Requests</li> <li>● Propose technical options for XMLCG consideration when conflict arises</li> <li>● Gather and address comments from Common Schema Liaison Officers and the XMLCG</li> <li>● Encode information models as XSD</li> </ul>

#### 3.4.4. IFCG Standing Office

The IFCG Standing Office is staffed by the Information Technology Services Department to provide support in the implementation of the IF, including the central alignment of data elements.

The functions of the IFCG Standing Office, in the context of Common Schema management, are summarized as follows :

Table 3-7: Details of the Functions Provided by IFCG Standing Office in relation to Common Schema Management

Functional Area	Details
<i>Operation Management</i>	<ul style="list-style-type: none"> <li>● Execute and manage the Common Schema management processes</li> <li>● Signal anomalies of the Common Schema management process to XMLCG</li> <li>● Act as core members of Common Schema Task Forces</li> <li>● Manage the Central Registry and its content, including their management information</li> <li>● Periodically assess the maturity level of Common Schemas and promote relevant ones to a higher level</li> <li>● Provide advice to B/Ds and their business partner on the use of Common Schemas</li> </ul>

### 3.5. Handling Requests to Create or Change a Common Schema

#### 3.5.1. Components of a Request

Project teams are encouraged to identify from their projects the data elements that have potential for reuse in other projects and submit these data elements for central alignment. If these data elements have been customized based on existing Common Schemas and the customized information model can enhance the reusability of a Common Schema, then the project team should submit a Change Request, otherwise the project team should submit a Creation Request. The only difference between a Change Request and a Creation Request is that a Change Request should include the original Common Schema and a brief description of the changes.

Regardless of whether the request is a Change Request or a Creation Request, the Common Schema Task Force will perform any necessary harmonization with existing Common Schemas and generate either a new Common Schema or a new version of an existing Common Schema.

The following list describes the components of a Creation or Change Request :

- Mandatory :
- The proposed information model of the data element. The information model should spell out the definition, naming, representation, usage rules, etc. of the data element. The data dictionary attributes mentioned in section 5.4 should be used where relevant, in particular the identifying, definitional, contextual and representational attributes should be specified where relevant.
  - Controlled vocabularies associated with the data element
  - Suggested business contexts for the data element based on the context categories specified in Part II (XML Schema Design Guide) to illustrate the e-government services and usage contexts for which this data element would be reusable
  - Samples of business documents from which the data element is derived
  - Brief description of the joined-up project from which the data element is derived
  - B/Ds and external parties involved in the joined-up project from which the data element is derived
  - Industry standards, Project Schemas, and Common Schemas that has been considered in the process of defining the data element
  - The original Common Schema based on which this information model is customized and a brief description of the changes [applicable for Change Requests only]
- Optional :
- Project Schema derived from the proposed information model

1

### 2 **3.5.2. The Phases in Handling a Change or Creation Request**

3 The processing of a Common Schema Creation/Change Request can be divided into three  
4 Phases, namely 1) Common Schema Development Phase, 2) Common Schema Review Phase,  
5 and 3) Publication Phase.

6 The following table provides a summary of each of the phases involved in the handling of a  
7 Creation / Change Request

8 Table 3-8: Summary of the 3 Phases in the Handling of a Creation / Change Request

Phase	Major Steps
<i>Common Schema Development Phase</i>	<ul style="list-style-type: none"> <li>● Preliminary assessment of request</li> <li>● Requirement analysis, impact analysis and harmonization</li> <li>● Creation of candidate Common Schema</li> </ul>
<i>Common Schema Review Phase</i>	<ul style="list-style-type: none"> <li>● Review of candidate Common Schema by the Common Schema Liaison Officers</li> <li>● Review and approve / reject candidate Common Schema by the XMLCG</li> </ul>
<i>Publication Phase</i>	<ul style="list-style-type: none"> <li>● Retirement of old version of Common Schema</li> <li>● Publication of Common Schema and associated controlled vocabularies</li> </ul>

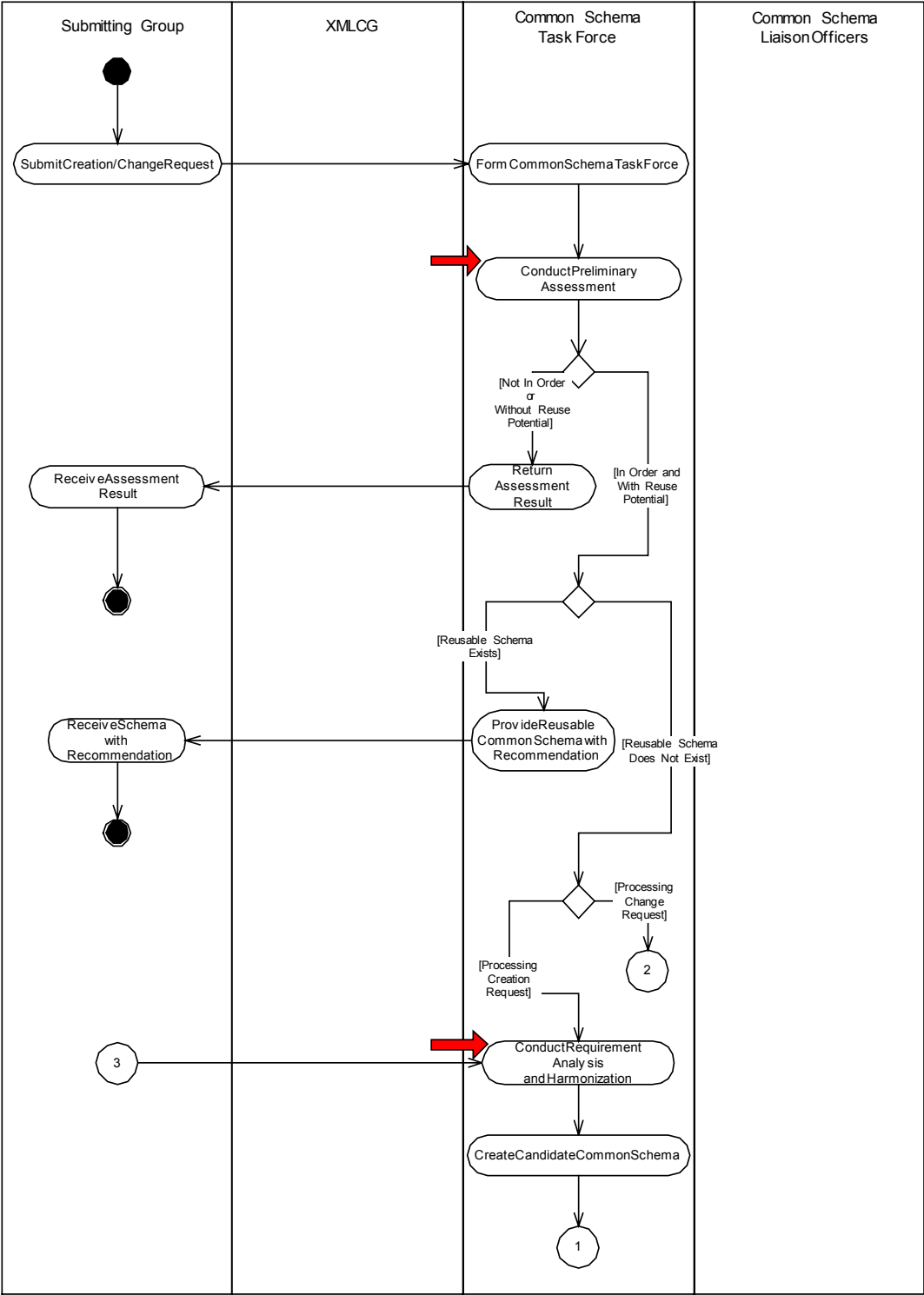
9

- 1 There may be cases where comments from the Common Schema Liaison Officers or the
- 2 XMLCG may cause the process to return from a Review Phase to a Development Phase.
- 3 There is no hard rule on how many iterations should be allowed. The Common Schema Task
- 4 Force should pragmatically assess the situation and decide on the appropriate action to take on
- 5 a case-by-case basis.

6

1     **3.5.3. Detailed Process Flow**

2     Common Schema Development Phase



3

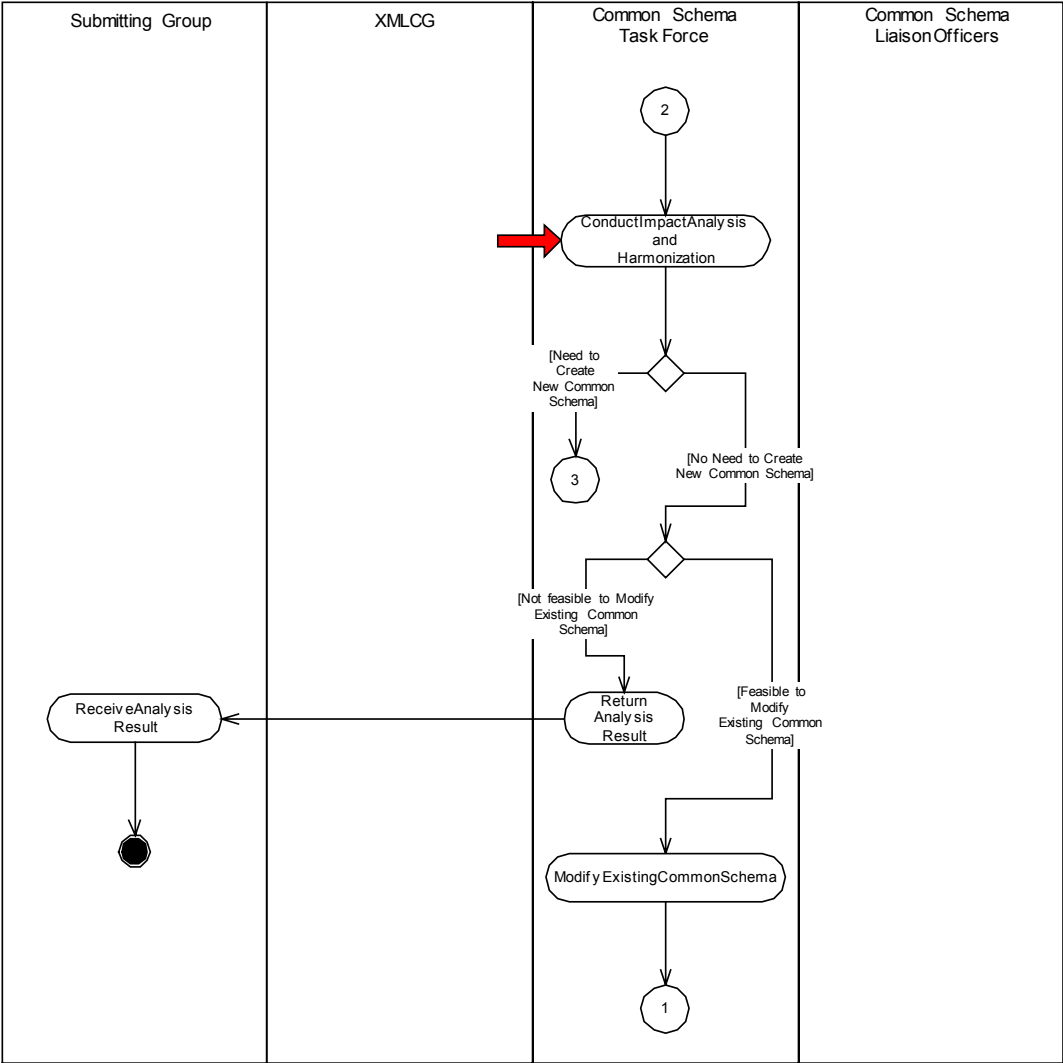
4     Figure 3-3: Common Schema Development Phase 1

5     **Remarks:** Red arrow implies the activities require access of the Central Registry

6



1    Common Schema Development Phase



2

3                                      Figure 3-4: Common Schema Development Phase 2

4    **Remarks:** Red arrow implies the activities require access of the Central Registry

5

6

1    Common Schema Review Phase

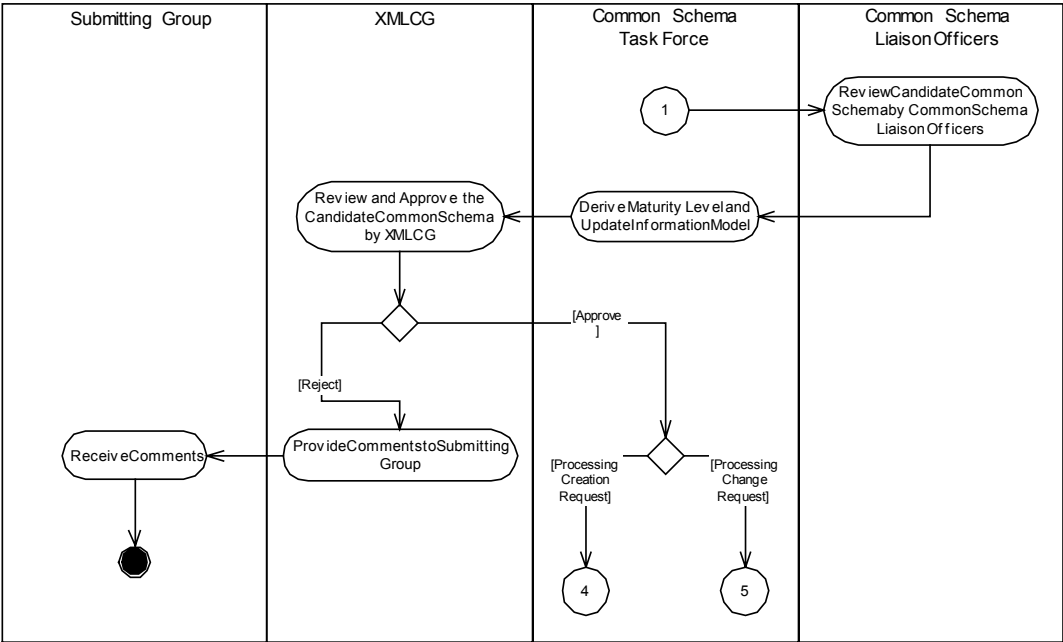
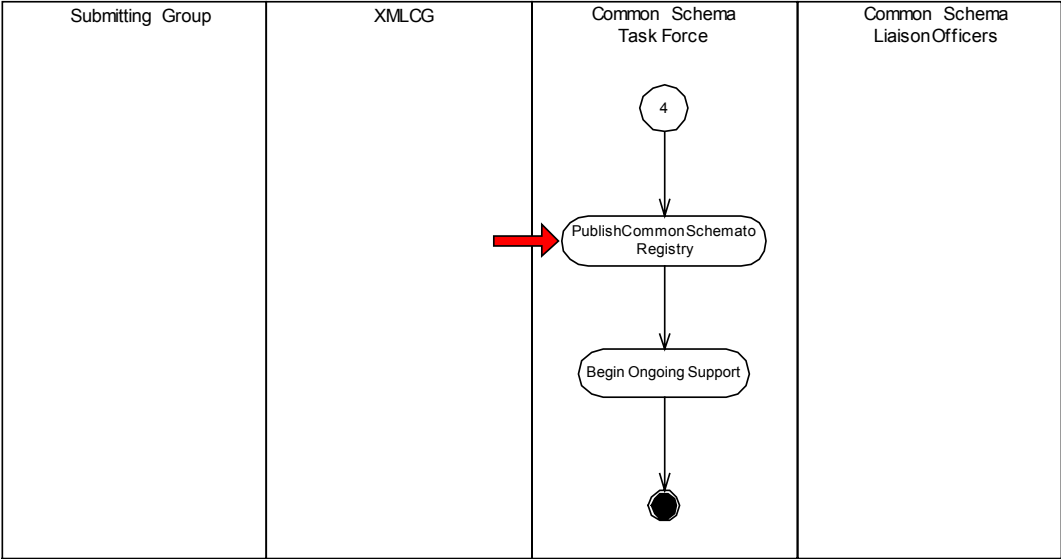
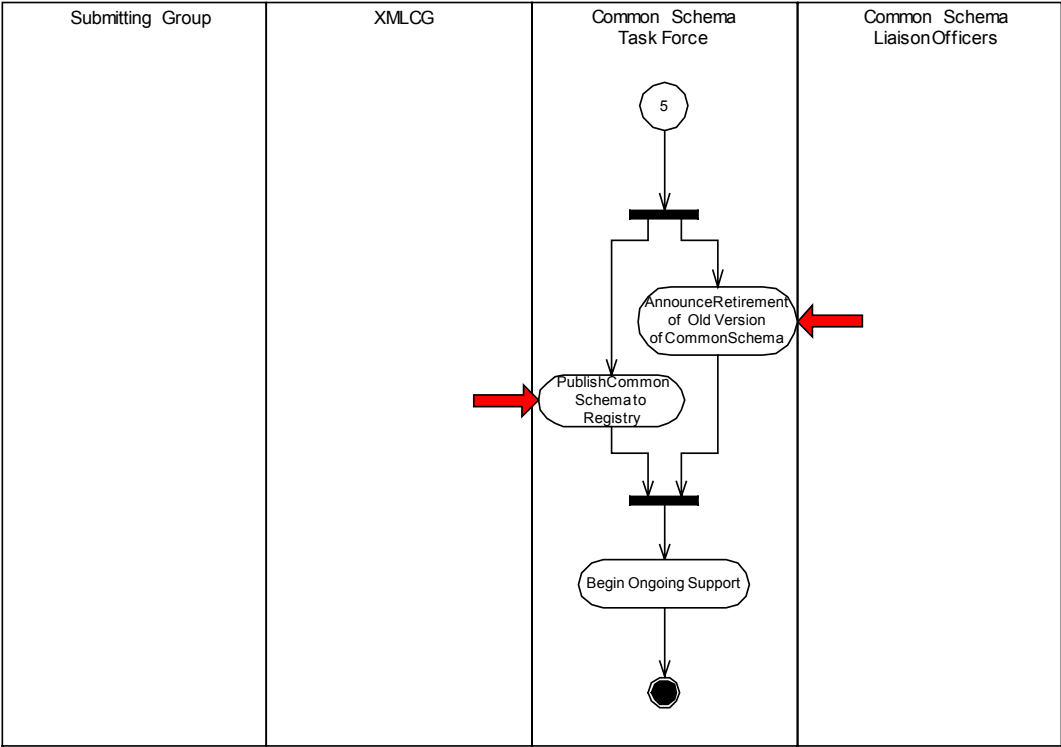


Figure 3-5: Common Schema Review Phase

1     Publication Phase



2  
3     Figure 3-6: Publication Phase for New Common Schema  
4



5  
6     Figure 3-7: Publication Phase of New Version of Common Schema

7     **Remarks:** Red arrow implies the activities require access of the Central Registry

### 3.5.4. Common Schema Development Phase

The objectives of the Common Schema Development Phase are to assess and analyse the Common Schema Creation/Change Request, and finally create a candidate Common Schema from the request. Submitting Group members and related stakeholders can take part in the schema analysis and design by participating in the Common Schema Task Force.

**Input:** Common Schema Creation/Change Request

**Output:** Candidate Common Schema, refined information model, and XSD

The following tables summarize the Objectives, Parties, Prerequisites, Contents, Decisions, Registry Use and Key Deliverables of major activities in this phase. Simple and intuitive activities will not be covered here.

Submit Creation/Change Request	
<b>Objective</b>	To submit a Common Schema Creation/Change Request
<b>Party</b>	Submitting Group
<b>Prerequisites</b>	Business Requirements, information model
<b>Contents</b>	The business analyst identifies from his project the data elements that have potential for reuse in other projects and submit these data elements for central alignment. If these data elements have been customized based on existing Common Schemas and the customized information model can enhance the reusability of a Common Schema, then the project team should submit a Change Request, otherwise the project team should submit a Creation Request
<b>Decision</b>	N/A
<b>Registry Use</b>	N/A
<b>Key Deliverables</b>	Common Schema Creation/Change Request

Conduct Preliminary Assessment	
<b>Objective</b>	To preliminarily assess the Common Schema Creation/Change Request before further processing
<b>Party</b>	Common Schema Task Force
<b>Prerequisites</b>	Common Schema Creation/Change Request
<b>Contents</b>	<p>Common Schema Task Force verifies the information in the request</p> <ol style="list-style-type: none"> <li>1. is complete i.e. no missing mandatory information</li> <li>2. is unambiguous</li> <li>3. is accurate (i.e. can fulfil the business requirements)</li> <li>4. proposes a data element with potential for reuse</li> </ol> <p>Failing the check may lead to termination of the process. Termination decision with reasons is sent to the Submitting Group.</p> <p>Common Schema Task Force then searches the Central Registry to ensure the Common Schema Creation/Change Request is a novel one.</p> <ol style="list-style-type: none"> <li>1. If reusable Common Schema is found with features matching with the business information requirements, Common Schema Task Force passes</li> </ol>

	<p>the Common Schema with recommendation e.g. schema usage recommendation, to the Submitting Group. Submitting Group can decide whether to further apply for Common Schema creation/change.</p> <p>2. If no reusable Common Schema is found, the process continues.</p> <p>The Common Schema Task Force has to estimate the time frame required to handle the request, taking into consideration past experience and the complexity of the request. The Submitting Group should be notified of the time frame.</p>
<b>Decision</b>	<p>[Not in Order or Without Reuse Potential] → Return Request Check Result</p> <p>[Reusable Schema Exists] → Provide the reusable Common Schema with Recommendation</p> <p>[In Order and With Reuse Potential and Reusable Schema Does Not Exist] → Conduct Requirement/Impact Analysis and Harmonization</p>
<b>Registry Use</b>	Search the Central Registry for Reusable Common Schema that is likely to be applicable
<b>Key Deliverables</b>	Preliminary Assessment Result, Reusable Common Schema, Recommendation

1

<b>Conduct Requirement Analysis and Harmonization</b>	
<b>Objective</b>	Analyse the business information requirements for candidate Common Schema creation
<b>Party</b>	Common Schema Task Force
<b>Prerequisites</b>	Business information requirements are enough for analysis, Common Schema Creation Request
<b>Contents</b>	<p>The Requirement Analysis is part of the Common Schema Creation Process.</p> <p>Common Schema Task Force evaluates the following:</p> <ol style="list-style-type: none"> <li>1. if the proposed information model can be refined or modified such that it can better serve the business information requirements</li> <li>2. if the proposed information model can be refined or modified such that it can be more reusable and searchable</li> <li>3. if the proposed information model can be harmonized with an existing Common Schema without impacting the existing users of that Common Schema</li> <li>4. if similar Creation/Change Request can be harmonized together with the current request</li> </ol> <p>Details of harmonization process will be discussed in section 3.6 Request Harmonization.</p> <p>Common Schema Task Force should propose unambiguous data definition, suitable Business Contexts values, usage rules and other meta-data for the new information model. The usage rules may include:</p> <ol style="list-style-type: none"> <li>1. Description of the characteristics of the Common Schema not specified in the data definition</li> <li>2. Scenario in which the Common Schema is recommended to adopt which is not reflected from its business context values</li> <li>3. Aspects of which the business analysts should consider when reusing the</li> </ol>

	Common Schema, e.g. the cardinality of sub-elements Reference to existing Common Schemas is encouraged.
<b>Decision</b>	N/A
<b>Registry Use</b>	Looks for Common Schema examples that can be referenced, and Common Schemas that can be harmonized with
<b>Key Deliverables</b>	Refined / harmonized information model

1

<b>Conduct Impact Analysis and Harmonization</b>	
<b>Objective</b>	Conduct Impact Analysis over the changes and harmonize the changes
<b>Party</b>	Common Schema Task Force
<b>Prerequisites</b>	Business information requirements are enough for analysis, Common Schema Change Request
<b>Contents</b>	<p>The Impact Analysis and Harmonization is part of the Common Schema Change Process.</p> <p>Common Schema Task Force evaluates the following:</p> <ol style="list-style-type: none"> <li>1. the approach in handling the Change Request e.g. raise a new schema Creation Request or process it as a Change Request</li> <li>2. what impacts will be imposed on the users of the existing Common Schema if the Change Request is implemented</li> <li>3. is it feasible to modify the existing Common Schema (e.g. the change may not be feasible if it will lower the reusability of the schema)</li> <li>4. if similar Creation/Change Request can be harmonized together with the current request</li> <li>5. if the modification can be further refined such that the information model can better serve the business information requirements</li> <li>6. if the proposed information model can be refined or modified such that it can be more reusable and searchable</li> </ol> <p>The Change Request may be processed as Creation Request if appropriate. In such case, the existing Common Schema will not retire.</p> <p>Details of harmonization will be discussed in section 3.6 Request Harmonization.</p> <p>Common Schema Task Force should propose unambiguous data definition, suitable Business Contexts values, usage rules and other meta-data for the new information model. The usage rules may include:</p> <ol style="list-style-type: none"> <li>1. Description of the characteristics of the Common Schema not specified in the data definition</li> <li>2. Scenario in which the Common Schema is recommended to adopt which is not reflected from its business context values</li> <li>3. Aspects of which the business analysts should consider when reusing the Common Schema, e.g. the cardinality of sub-elements</li> </ol> <p>In determining the business contexts values of a data element, the scope covered by the context values should be as wide as applicable. For example, the Common Schema Task Force should first consider whether “in all contexts” could be assigned, and if this is too wide, the context values should be confined to a more restricted context (e.g. business process = import / export licencing)</p>

	based on business requirements. Reference to existing Common Schemas is encouraged.
<b>Decision</b>	[Need to Create New Common Schema] → go to Common Schema Creation Process [No Need to Create New Common Schema and Not Feasible to Modify Existing Common Schema] → Return Analysis Result to the Submitting Group [No Need to Create New Common Schema and Feasible to Modify Existing Common Schema] → Modify Existing Common Schema
<b>Registry Use</b>	Retrieves original Common Schema, looks for Common Schema examples that can be referenced,
<b>Key Deliverables</b>	Refined / Harmonized information model, Analysis Result to Submitting Group

1

Create Candidate Common Schema / Modify Existing Common Schema	
<b>Objective</b>	Create an XSD and further refine the information model
<b>Party</b>	Common Schema Task Force
<b>Prerequisites</b>	Refined/Harmonized information model
<b>Contents</b>	An XSD is developed based on the refined information model. The usage rules for the Common Schema are also supplemented in this activity.
<b>Decision</b>	N/A
<b>Registry Use</b>	N/A
<b>Key Deliverables</b>	Candidate Common Schema

2

### 3 3.5.5. Common Schema Review Phase

4 The objectives of the Common Schema Review Phase are for the Common Schema Liaison  
5 Officers and the XMLCG to review the candidate Common Schema, and for the XMLCG to  
6 approve the candidate Common Schema. If the candidate Common Schema is rejected,  
7 comments are provided to the Submitting Group and the process ceases.

8

9 **Input:** Candidate Common Schema including the refined information model and the XSD

10 **Output:** Approved candidate Common Schema/Comments on the candidate Common  
11 Schema

12

13 The following tables summarize the Objectives, Parties, Prerequisites, Contents, Decisions,  
14 Registry Use and Key Deliverables of major activities in this phase. Simple and intuitive  
15 activities will not be covered here.

Review Candidate Common Schema by Common Schema Liaison Officers	
<b>Objective</b>	Common Schema Liaison Officers review and comment on the candidate Common Schema and indicate their preferences on the maturity level
<b>Party</b>	Common Schema Liaison Officers

<b>Prerequisites</b>	Candidate Common Schema
<b>Contents</b>	<p>When a complete candidate Common Schema is produced, the Common Schema Task Force will request the Common Schema Liaison Officers to review the candidate Common Schema and to indicate whether its maturity level should be set to 1 (Recommended for reuse) or 0 (Agreed in principle)</p> <p>The Common Schema Liaison Officers review the candidate Common Schema and provide comments in the following areas :</p> <ol style="list-style-type: none"> <li>the integrity of the candidate Common Schemas : The Common Schema Liaison Officers are expected to check whether the definition, naming and usage contexts of the data element are appropriate and, if their B/D needs to use that data element in their business, whether their B/D can exchange data in accordance with the representation (including usage rules) of the data element at system interfaces that interact with the systems of other B/Ds or external parties.</li> <li>the maturity level of the Common Schema : The Common Schema Liaison Officers would also be requested to indicate their preferences on the maturity grading for that candidate Common Schema. Considerations for indicating such preference are explained in section 3.3</li> </ol> <p>All the above comments will be sent to Common Schema Task Force for evaluation. If room of improvement is raised by the Common Schema Liaison Officers, the process will loop back to the Development Phase and the Common Schema Task Force should refine the candidate Common Schema</p>
<b>Decision</b>	N/A
<b>Registry Use</b>	N/A
<b>Key Deliverables</b>	Comments from Common Schema Liaison Officers

1

<b>Review and Approve the Candidate Common Schema by XMLCG</b>	
<b>Objective</b>	XMLCG reviews the candidate Common Schema and decides to approve or reject the schema
<b>Party</b>	XMLCG
<b>Prerequisites</b>	Candidate Common Schema which has taken into consideration comments from the Common Schema Liaison Officers
<b>Contents</b>	<p>The XMLCG reviews the integrity of the candidate Common Schemas and approves it if appropriate.</p> <p>The Submitting Group will be informed of the result.</p>
<b>Decision</b>	<p>[Approve] → Publication Phase</p> <p>[Reject] → Provide Comments to Submitting Group</p>
<b>Registry Use</b>	N/A
<b>Key Deliverables</b>	Approved Candidate Common Schema

2

### 3 3.5.6. Publication Phase

4 The objective of this phase is to publish the approved Common Schema and related  
5 information in the Central Registry. After the publication, the ongoing support of the  
6 published Common Schema begins.

7



- 1 **Input:** Approved candidate Common Schema
- 2 **Output:** Published Common Schema and related controlled vocabularies in the Central
- 3 Registry
- 4

5 The following tables summarize the Objectives, Parties, Prerequisites, Contents, Decisions,

6 Registry Use and Key Deliverables of major activities in this phase. Simple and intuitive

7 activities will not be covered here.

Announce Retirement of Old Version of Common Schema	
<b>Objective</b>	To announce the retirement of an older version of a Common Schema
<b>Party</b>	Common Schema Task Force – IFCG Standing Office
<b>Prerequisites</b>	Candidate Common Schema is approved
<b>Contents</b>	The old version of a Common Schema would be retired when the latest version of the schema is published. The retirement is announced through the Central Registry. The existing users of the Common Schema are notified of the retirement.
<b>Decision</b>	N/A
<b>Registry Use</b>	Update the Central Registry
<b>Key Deliverables</b>	Retired Common Schema of older version

8

Publish Common Schema to Registry	
<b>Objective</b>	Publish the approved Common Schema and associated controlled vocabularies to the Central Registry for user reference
<b>Party</b>	Common Schema Task Force – IFCG Standing Office
<b>Prerequisites</b>	Candidate Common Schema is approved
<b>Contents</b>	Publish the XSD, information model, and associated controlled vocabularies to the Central Registry.
<b>Decision</b>	N/A
<b>Registry Use</b>	publication of Common Schema and related information
<b>Key Deliverables</b>	Published Common Schema, management information and relevant controlled vocabularies

9

### 10 3.6. Request Harmonization

11 This section intends to further explain the harmonization procedures in the processes

12 “Requirement Analysis and Harmonization” and “Impact Analysis and Harmonization” in

13 Figure 3-3 and Figure 3-4 respectively. The purpose of request harmonization is to take

14 related Common Schema Creation or Change Requests submitted by different domains,

15 identify differences and similarities between the requests and relevant Common Schemas, and

16 produce a single, cross-domain solution. The formulated Common Schema can cover all the

17 business requirements of the related requests and Common Schemas. The harmonization is

18 very critical in the Common Schema Management Process. Hence particular attention is given

19 to it.

1 The harmonization process begins when the Common Schema Task Force is performing  
2 Requirement or Impact Analysis in the Common Schema Development Phase. Harmonization  
3 focuses on business requirements and identification of similarities and differences. The  
4 similarities can be grouped or merged together, while the differences may appear as optional  
5 parts in the new Common Schema.

6 Consultation of the Common Schema Liaison Officers may be required during the process.  
7 This consultation aims at gathering more specific requirements / comments for the  
8 harmonization.

#### 9 **3.6.1. Detailed Harmonization Flow**

10 The following diagram illustrates in details what steps are included in the harmonization  
11 process.

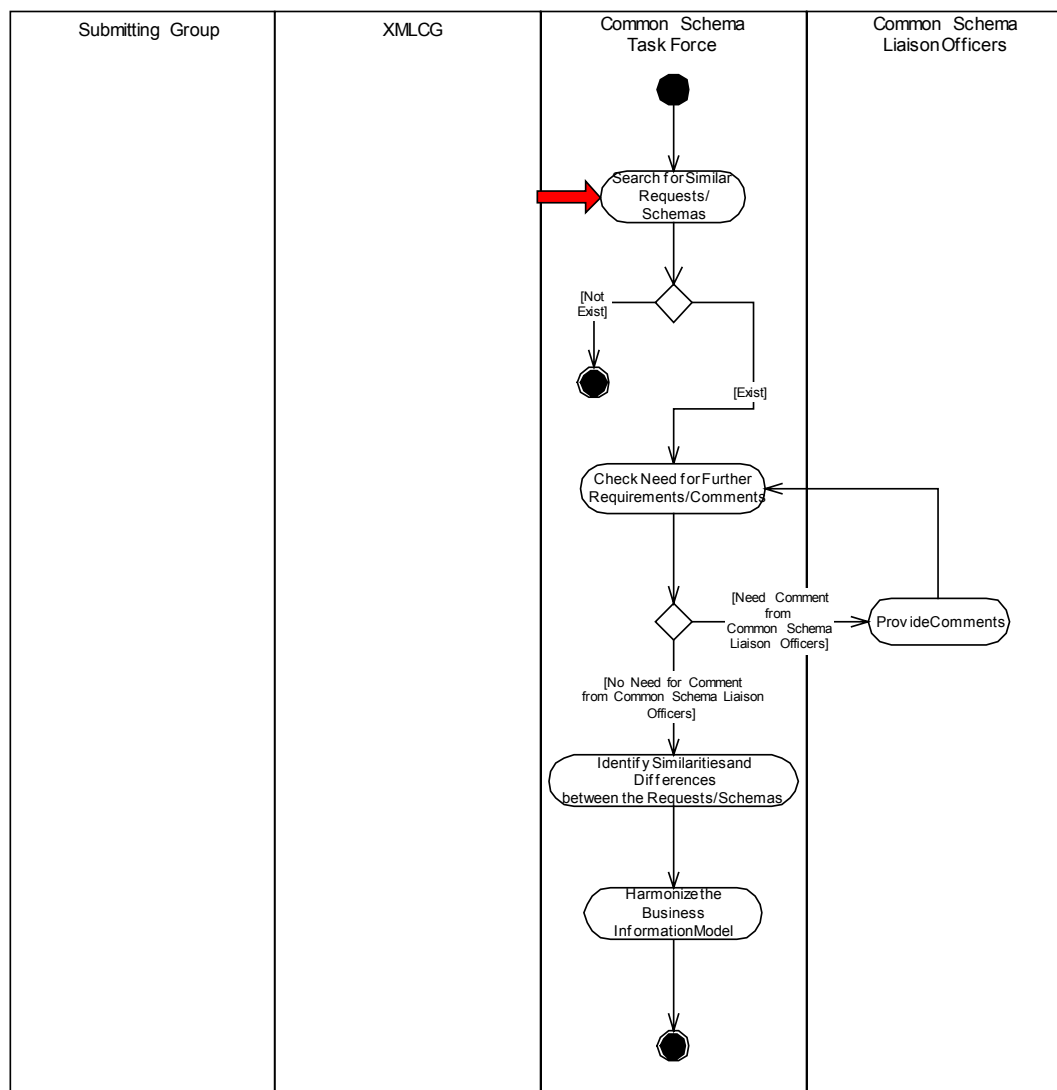
1 Harmonization Process

Figure 3-8: Harmonization Process

**Remarks:** Red arrow implies the activities require access of the Central Registry

### 3.6.2. Major Activities

The following tables summarize the Objectives, Parties, Prerequisites, Contents, Decisions, Registry Use and Key Deliverables of major activities in this process:

Search for Similar Requests/Schemas	
<b>Objective</b>	Search for similar Common Schema Creation/Change Requests and Common Schemas for harmonization
<b>Party</b>	Common Schema Task Force
<b>Prerequisites</b>	Requirement/Impact analysis begins

<b>Contents</b>	<p>Similar Common Schema Creation/Change Requests should be found before the harmonization process can proceed.</p> <p>Below are some guidelines for searching similar Common Schema Creation/Change Requests:</p> <ol style="list-style-type: none"> <li>1. The requests had not been approved</li> <li>2. The requests propose a similar structure/data type as that of the current request</li> <li>3. The requests share similar usage, e.g. in terms of business contexts</li> </ol> <p>The Common Schema Task Force should also try to find compatible Common Schemas in the Central Registry, which can provide additional reference material to the harmonization. Moreover, these compatible Common Schemas can be harmonized with the requests if appropriate.</p>
<b>Decision</b>	N/A
<b>Registry Use</b>	Search for compatible Common Schemas
<b>Key Deliverables</b>	Similar Common Schema Creation/Change Request, compatible Common Schemas

1

<b>Identify Similarities and Differences between the Requests/Schemas</b>	
<b>Objective</b>	To identify similarities and differences between the similar Creation/Change Requests and the compatible Common Schemas
<b>Party</b>	Common Schema Task Force
<b>Prerequisites</b>	Enough requirements/comments have been gathered
<b>Contents</b>	Similarities and differences (e.g. data restrictions or structure of the data elements) between the similar Creation/Change Requests and the compatible Common Schemas, based on their business requirements, are identified.
<b>Decision</b>	N/A
<b>Registry Use</b>	N/A
<b>Key Deliverables</b>	Similarities and differences among similar Creation/Change Requests and compatible Common Schemas

2

<b>Harmonize the Business Information Model</b>	
<b>Objective</b>	Harmonize the relevant requests/Common Schema into a single information model
<b>Party</b>	Common Schema Task Force
<b>Prerequisites</b>	Similarities and differences among similar Creation / Change Requests and compatible Common Schemas are identified
<b>Contents</b>	<p>Create a new information model based on the harmonization guidelines below:</p> <ol style="list-style-type: none"> <li>1. Similarities across the requests/schemas are grouped or merged in the new information model</li> <li>2. Differences across the requests/schemas can appear as optional components in the new information model</li> <li>3. After consulting relevant parties, data structures that are no longer necessary for the cross-domain solution can be omitted in the new</li> </ol>

	information model
	4. The new business contexts should cover all those required by the requests/schemas
<b>Decision</b>	N/A
<b>Registry Use</b>	N/A
<b>Key Deliverables</b>	Harmonized Information Mode

### 3.7. Handling Requests to Retire a Common Schema

Upon receiving a request from a project team for retiring a Common Schema, the IFCG Standing Office should assess the justification made by the project team and the impact of the proposed retirement and, if considered appropriate, consult the Common Schema Liaison Officers and all registered users of the Common Schema. If the Common Schema Liaison Officers indicate no objection, taking into consideration the views of the registered users of the Common Schema, the request should be submitted to the XMLCG for approval. If the retirement is approved by the XMLCG, the new status should be reflected on the Central Registry and all existing users of the Common Schema, if any, should be notified.

In principle, if the Common Schema is in use by multiple B/Ds or the maturity level is at 1 or above, there should be little reason for retiring the Common Schema.

### 3.8. Handling Requests to Change Controlled Vocabularies

Upon receiving a request from project teams to change certain controlled vocabularies (e.g., a code list), the IFCG Standing Office should assess which Common Schemas are affected (i.e. which Common Schemas have used the controlled vocabulary) and consult the Common Schema Liaison Officers and all registered users of the affected Common Schemas. If the Common Schema Liaison Officers indicate no objection, taking into consideration the views of the registered users of the affected Common Schemas, the request should be submitted to the XMLCG for approval.

### 3.9. Periodic Review of the Maturity Level of Published Common Schemas

The Common Schemas with maturity level at 0 or 1 should be reviewed periodically (every 6 months) to assess if their maturity level can be promoted to the next higher level. The review should be conducted in accordance with the criteria specified in section 3.3

### 3.10. Registration of the Reuse of Common Schemas

Once project teams decide to adopt a certain Common Schema, they should register the reuse of that Common Schema. During reuse registration, project teams have to provide the following information:

- Project name and description
- Business contexts of the joined-up project using the Common Schema
- Related B/Ds or business groups
- Contact information for the project (e.g. contact officer, officer's post, telephone number, email address)

## 4. Project Schema Management

During project development, project teams are highly recommended to establish a Project Registry to facilitate the management of modelling artifacts (i.e., the process and information models, the XSDs, and the controlled vocabularies) produced in the design process. The Project Registry serves as a single point of reference for the different project teams working for different business partners involved in the same joined-up service.

The project teams may negotiate among themselves and appoint one party to manage the Project Registry. This management office can be a standing office serving the entire life cycle of the joined-up service. Since Project Schemas are an integral part of a project's system documentation, just like design specification, source code, etc., the Project Registry should sustain throughout the project maintenance stage, supporting all subsequent enhancements to the project.

Since Project Schemas may affect a system's future integration with the systems of other B/Ds and external parties, project teams are recommended to share Project Schemas with other B/Ds and external parties where relevant.

Such sharing also allows other project teams working on similar initiatives to share best practices and reusable schemas, thus maximizing the reuse of schemas.

In order to maintain a consistent way for searching reusable data elements in Project Registries, project teams are highly recommended to use a data dictionary to manage data elements, i.e. similar to the approach described in Section 5 (The Central Registry).

Project teams should also ensure that the content of their Project Registries are up-to-date, in particular for those projects whose information models / XSDs used in production systems are not extracted from the Project Registry directly.

To facilitate the sharing of Project Schemas among e-government project teams, project teams are recommended to register their projects on a centrally maintained list of projects with their Project Schemas openly accessible. This list provides links to the Project Schemas and other information of various joined-up service projects for reference by all parties.

If a project has adopted process models and information models / XML schemas from industry standards (e.g. xCBL has been adopted for e-procurement) and has defined no additional Project Schema, then project teams do not necessarily have to setup their own Project Registry. In such cases, they may register their project on the centrally maintained list of projects mentioned above and specify that they have adopted a particular version of an industry standard in their project.

## 5. The Central Registry

### 5.1. Objects Registered in the Central Registry

The following types of objects are registered in the Central Registry:

1. Common Schemas (i.e. the information model and XSD of the centrally aligned data elements) with associated administrative information (such as maturity level, which projects are using that Common Schema, etc.)
2. Controlled Vocabularies used by the Common Schemas
3. Projects which have openly accessible Project Registries

Within the Central Registry, the Common Schemas are maintained using a data dictionary.

### 5.2. Functions of the Central Registry

The Central Registry is mainly used by e-government project teams. The information in the Central Registry is maintained by an administrator, which is staffed by the IFCG Standing Office.

The Central Registry provides the following core functions:

1. Facilitates the administrator to register Common Schemas and their associated controlled vocabularies
2. Facilitates the administrator to maintain administrative information associated with the Common Schemas (e.g. the maturity level of a Common Schema)
3. Facilitates the registration of projects using a particular Common Schema
4. Facilitates the registration of projects which have openly accessible Project Registries so as to provide links for project teams to access these Project Registries
5. Facilitates project teams to access Common Schemas and their associated controlled vocabularies

### 5.3. Implementing the Central Registry

The content of the Central Registry can be stored in many ways ranging from a collection of spreadsheets and files to a database. The content can be presented as static content over the Web or they can be presented as dynamic content generated in response to a user enquiry.

Since the Central Registry is mainly for human use, it should provide a convenient user interface. The sophistication of the user interface very much depends on the volume and nature of information being maintained in the registry. Programmatic interfaces such as UDDI or ebXML Registry Service are considered beyond the scope of this context.

### 5.4. Data Element Attributes Maintained in the Common Schema Data Dictionary

The attributes of a data element maintained in the Common Schema data dictionary are listed in the following table. Most of these attributes come from the information model of that data element.

- 1 The attributes can be broadly classified into the following categories :
- 2 - identifying : attributes that are applicable for the identification of a data element
- 3 - definitional : attributes that describe the semantic aspects of a data element
- 4 - contextual : attributes that describe the business contexts where the data element would be
- 5 applicable
- 6 - representational : attributes that describe representational aspects of a data element
- 7 - administrative : attributes that describe management and control aspects of a data element
- 8

Name	Description	Adapted from original request	Common Schema Liaison Officers and XMLCG consulted
Identifying			
Dictionary Entry Name	Official name of the Entry. Contains object class, property term, and representation term. Used to generate schema tag name	✓	✓
Object Class	Identifies a set of ideas, abstractions, or things in the real world that can be identified with explicit boundaries and meaning, and whose properties and behaviour follow the same rules.	✓	
Property Term	Identifies a peculiarity common to all members of an object class	✓	
UID	A language independent unique identifier of a data element		
Business Terms	the synonym terms under which the data element is commonly known as and used in business. A data element may have several business terms.	✓	✓
Version	The version identifier of the model having syntax "M.m". Evolution of a data element may develop different versions of information model, which are stored as separate dictionary entries and identified by different UIDs. The different versions of information model may share the same Dictionary Entry Name and definition.  "M" stands for major version number. Change of major version number indicates structural change of schema. An old system using the data element needs to be upgraded before it can exchange data that is based on the new version.  "m" stands for minor version number. Change of minor version number indicates adding of optional element / attribute. An old system using the data element does not need any upgrade in order to exchange data that is based on the new version.		
BIE Type	3 possible types of BIE: BBIE, ASBIE, ABIE.	✓	
Definitional			



Name	Description	Adapted from original request	Common Schema Liaison Officers and XMLCG consulted
Definition	Statement that expresses the essential nature of a data element and permits its differentiation from all other data elements.	✓	✓
Contextual			
Business Process Classification	The Business Process classification to which the information model of this data element is specific. (e.g. "health and safety clearance of cargo").	✓	✓
Service / Product Classification	The classification of products or services to which the information model of this data element is specific (e.g. "explosive materials" as defined in UNSPSC [Universal Standard Product and Service Specification]).	✓	✓
Industry Classification	The vertical industries of the business partners to which the information model of this data element is specific (e.g. "water transport" as defined in ISIC [International Standard Industrial Classification]).	✓	✓
Geopolitical	The geographical location to which the information model of this data element (e.g. an address) is specific (e.g. a region as defined in ISO 3166.2).	✓	✓
Official Constraints	The legal and governmental constraints to which the information model of this data element is specific (e.g. Laws of Hong Kong Cap. xxx, Civil Service Regulation No. xxx).	✓	✓
Representational			
Representation Term	A description of how the data is represented (e.g., 'text', 'code', 'date'). The actual representation is the combination of a value domain, data type, and, if necessary, a unit of measure or a character set.	✓	
Cardinality	Number of occurrence of the aggregated data element within its Object class in the form of "x..y" (e.g. optional element with maximum occurrence of 1 is 0..1, optional element with no limitation on the maximum occurrence is 0..*).	✓	✓
Core Component Type	The Core Component Type of which the BBIE is based. Applicable to BBIE only.	✓	
Primitive Data Type	Primitive data type of the data element (e.g. string, number, date, etc). Applicable to BBIE only.	✓	✓

Name	Description	Adapted from original request	Common Schema Liaison Officers and XMLCG consulted
Restrictions	Limitation on the data element described in textual form (e.g. maximum length, permissible values defined using an enumeration or a controlled code list).	✓	✓
URI to Schema Structure	URI to a document with a diagram representing the structure of the schema visually. It can optionally contain XML sample for the schema.	✓ (The structure of the data element is adapted from the original information model)	✓ (Consulted on the structure of the data element)
Details of Supplementary Components	The following details for each necessary supplementary component, depending on the scenario and the representation term used : <ul style="list-style-type: none"> <li>- Name of the supplementary component (e.g. the currency code associated with an amount). Used to generate XML attribute name</li> <li>- Default value of the supplementary component if no value is specified in the XML document</li> <li>- Permissible values allowed other than the default value</li> </ul>	✓	✓
Usage Rules	General rules on the use of the schema (e.g. Chinese content handling). Specific rules regarding the use in particular business process should be described in the project's documentations.	✓	✓
Administrative			
Related Data Elements	UID Reference to other Common Schemas that this element is based on.	✓	
Maturity Level	Reuse recommendation of the schema. 3 levels exist: 0 – Agreed in principle, 1 – Recommended for reuse, and 2 – Matured for reuse.		✓
Maturity Preference Distribution	Distribution of B/Ds' preference in maturity setting when the Common Schema's maturity level is set to 1., e.g.  W/Z preferred level 0 X/Z preferred level 1 Y/Z abstained		
Management Status	Reflect the different stages of the schema life cycle of a Common Schema, namely : published, and retired.		

Name	Description	Adapted from original request	Common Schema Liaison Officers and XMLCG consulted
Last Updated	The date of last changes to the schema.		
Originator	B/Ds and projects that triggered the creation of this version of the schema (and their contact information)	✓	
Projects reusing the data element	B/Ds and projects that registered reuse of the schema (and their contact information)		
XSD URI	Reference to the XSD document		
Related Documents URI	Reference to documents from which definitional or representational attributes originate	✓	

1

## 2 5.5. Information Maintained on Projects with Openly Accessible Project 3 Registry

4

Name	Description
Name of joined-up project	Name of the joined-up project that owns the Project Registry.
Description	A statement that briefly describes the nature of the project.
Business Context	Business contexts of the joined-up project
Parties involved	B/Ds and external organizations involved in the joined-up project
Project Registry URI	Reference to Project Registry
Project Registry Administrator	Project Registry Administrator Contact information including name, post, B/D, and email

5

## 6 5.6. Information Maintained on Controlled Vocabularies / Controlled Code 7 Lists

8 A controlled code list may be the list of permissible values allowed in the content of a  
9 particular data element (e.g. the districts in Hong Kong).

10 The context values of Common Schemas are also maintained as controlled vocabularies.

11 The information maintained for each controlled code / vocabulary list are as follows :

12

Name	Description
Code List Name	Name of the code list (a version independent name referenced in the information model of a data element)

Name	Description
Description	A statement that briefly describes the nature of the code list.
Version	The version identifier of the code list.
Last Updated	The date of last changes to the code list.
Code List values URI	Reference to a document containing all permissible values of the code list.

1

2

3