



TOOLS TO MANAGE THE COMMISSIONING PROCESS

Demonstration

-Glossary tools

-Standart Model Commissioning Plan (**SMCxP**)

Mireille JANDON



■ Organisation and dissemination of the Annex 40 Work

- www.commissioning-hvac.org
- www.commissionnement.org

■ Outline and demonstration of the:

- Glossary tools
- Standart Model Commissioning Plan



■ Objective and specifications:

- Customization of the Annex 40 glossary on Commissioning
- Link between the glossary and the technical papers and tools developed within the Annex
- Easy to update
- Easy to share, on line tool
- Multi-lingual (translation by several countries)



Customization of the glossary

ESL-IC-04-10-26



Annex 40 Glossary of terms - Microsoft Internet Explorer fourni par CSTB - Marne la Vallée

File Edit Affichage Favoris Outils ?

Rechercher Favoris Média

http://www.commissioning-hvac.org/glossary.asp

Annex 40 **Commissioning-HVAC**
Glossary of terms

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Glossary home page

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Cx type

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Cx process overview

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Welcome to Annex 40 Glossary of terms

The development of a common vocabulary is necessary to reach a common understanding on commissioning. A glossary of terms has been developed, it concentrates on terms necessary for commissioning.

This includes:

- commissioning types;
- stages of a project;
- documents to be prepared;
- players involved

The tool enables a direct access from any of the annex documents to the glossary. Clicking on a linked word directly access its definition. Access to the glossary will also be possible from documents produced outside of the Annex.

The data base enables multi-lingual operation. Each annex participating country have the opportunity to produce a glossary version in other languages.

Alphabetical search

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Annex 40 Glossary of terms - Microsoft Internet Explorer fourni par CSTB - Marne la Vallée

http://www.commissioning-hvac.org/glossary.asp?KeyWord=6&WORD=&Letter=C&Ouvert=0000

Annex 40 Commissioning-HVAC Glossary of terms

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Commissioning (Cx)

[Finnish](#) [French](#) [German](#) [Japanese](#) [Norwegian](#)

Clarifying Owner's Project Requirements (OPR) from viewpoints of environment, energy and facility usage, and auditing and verifying different judgments, actions and documentations in the Commissioning Process (CxP) in order to realize a performance of building system requested in the OPR through the life of the building

[More](#)

See also
[Owner's Project Requirements](#) [Commissioning Process](#) [Commissioning Authority](#) [Commissioning Plan](#)

[ASHRAE definition](#)

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Multi lingual data base

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Annex 40 Glossary of terms - Microsoft Internet Explorer fourni par CSTB - Marne la Vallée

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Commissioning-HVAC

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Commissioning (Cx)

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Clarifying Owner's Project Requirements, energy and facility usage, and documentations in the Commissioning process of building system building

[More](#)

See also

[Owner's Project Requirements](#) [Commissioning Process](#) [Commissioning Authority](#) [Commissioning Plan](#)

ASHRAE Definition

The process of ensuring that systems are designed, installed, functionally tested, and capable of being operated and maintained to perform in conformity with the design intent. In this guideline, commissioning begins with planning and includes design, construction, start-up, acceptance and training, and can be applied throughout the life of the building.

性能検証

発注者が要求する建物システムの性能を明らかにし、その性能を実現するために、性能検証関連者による様々な判断や行為を査閲・確認し、必要かつ十分な文書化を行い、機能性能試験を通して、そのシステムが適正な運転保守を可能にしていることを検証すること。

Proceedings of the Fourth International Conference for Enhanced Building Operations, Paris, France, October 18-19, 2004

Internet

Explanation on the Cx process

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Commissioning-HVAC Glossary of terms

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Commissioning type

There are four representative types in CxP as follows

- Initial Commissioning (I-Cx)
- Retro-Commissioning (Retro-Cx)
- Re-Commissioning (Re-Cx)
- On-Going Commissioning (On-Going Cx)

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Terminé Internet



Glossary administration

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Annex 40 Glossary Administration - Microsoft Internet Explorer fourni par CSTB - Marne la Vallée

Annex 40 Commissioning-HVAC
Private area - Glossary administration
Translation

Exit

- home
- To add a term
- To modify a term
- Translation**
- Validation
- To delete a term
- Exit

Select the term to translate:

Target language:

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Internet



Link to papers of tools

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D1_approach_Kyoto2_mj.doc - Microsoft Word

chier Edition Affichage Insertion Format Outils Tableau Fenêtre ? Adobe PDF Commentaires Acrobat Tapez une question

Afficher

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17

Subtask D1: A Process for Developing Model-Based Functional Tests at the Component Level

Philip Haves
Lawrence Berkeley National Laboratory, USA
March 29, 2003

Summary

Model-based commissioning procedures use mathematical models of components and systems to link design, commissioning and operation. Within this context, Subtask D1 will focus on the development of automated functional test procedures for HVAC components. The key elements of an automated tool are:

- A set of suitable models
- A set of test sequences
- Supporting software to implement the test sequences and analyze the results using the models

Work in Subtask D1 will focus on identifying and refining suitable models and defining the test sequences required to verify [acceptable performance](#) and detect and diagnose selected faults. The definition of the test sequences will require interaction

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Modifier le lien hypertexte

Texte à afficher: acceptable performance

Liens hypertextes

Fichier ou page Web existante(s)

Engagement dans ce document

Pages parcourues

Créer un document

Fichiers récents

Adresse électronique

Doc: C:\Documents and Settings\JANDON\Moniteur\Co2\berkel...
C:\Documents and Settings\JANDON\Moniteur\Co2\berkel...
C:\Documents and Settings\JANDON\Moniteur\Commissio...
C:\Documents and Settings\JANDON\Moniteur\Commissio...
C:\Documents and Settings\JANDON\Local Settings\Tempor...
C:\Documents and Settings\JANDON\Local Settings\Tempor...
C:\Program Files\Microsoft Office\Office12\Start\PDFMa...
C:\Program Files\Microsoft Office\Office12\Macro\glucor.m...

Adresse : http://www.commissioning-frnac.org/glossary.asp?word=Ac...

Signet...
Cadre de destruction...
Supprimer le lien

OK Annuler

Commissioning-HVAC

Acceptable Performance

Result: Green - General Settings Message

Periodically, environmental and energy performance values of equipment and systems are compared against the design goals and the acceptable performance range.

Blue - OK
Yellow - Added Settings

Unit
Equipment
Controlled devices
Commissioning



The Standard Model Commissioning Plan is a list of tasks adapted to different type of projects from small to large buildings

Annex 40 Commissioning-HVAC Glossary of terms

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Schematic Planning Documents
Standard Models of Commissioning Plans
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Standard Models of Commissioning Plans (SMCxP)

Finnish French German Japanese Norwegian

Standard models which list typical tasks to be realized in the Commissioning Process (CxP), which prepare five types of models according to the project complexity.

More
The SMCxP is made by the Annex 40, Subtask A2, to help understand the CxP and to apply the Cx tools in the real projects for five type models as follows: 1) Type 5: Complex critical building e.g.: a laboratory with complex HVAC systems and high requirements on the indoor environment linked to the process in the laboratory 2) Type 4: Large commercial building with central HVAC system e.g.: an office building including offices, meeting rooms, restaurant but without critical parts such as large computer center 3) Type 3: Medium size building with central HVAC system e.g.: 20 apartments in one building with a collective hydronic system and a collective mechanical ventilation system 4) Type 2: Medium size building with independent HVAC units e.g.: a store with roof top package units 5) Type 1: Small size building with simple HVAC system e.g.: a detached house

See also
Commissioning Plan
ASHRAE Definition

Proceedings of the Fourth International Conference for Enhanced Building Operations, Paris, France, October 18-19, 2004



Project type description

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The first step to get a Commissioning Plan is to describe the project:

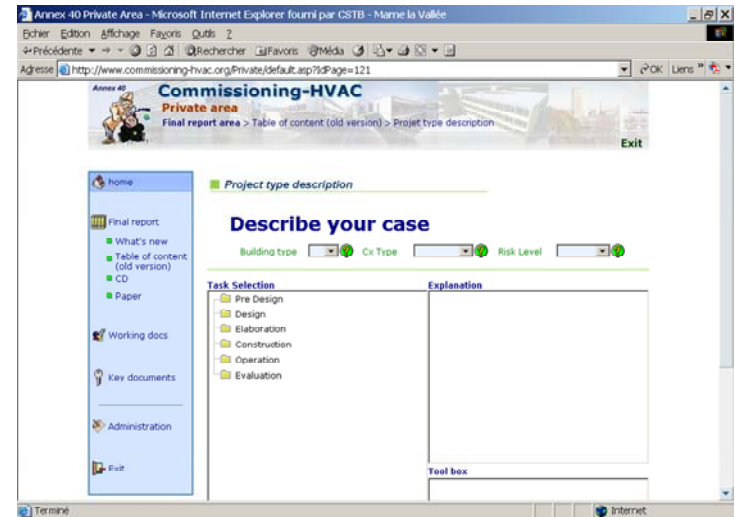
- **Type of building**

A typology has been defined from T1 to T5

- **Type of Cx**

3 main types of Commissioning have been defined

- **Risk Level**



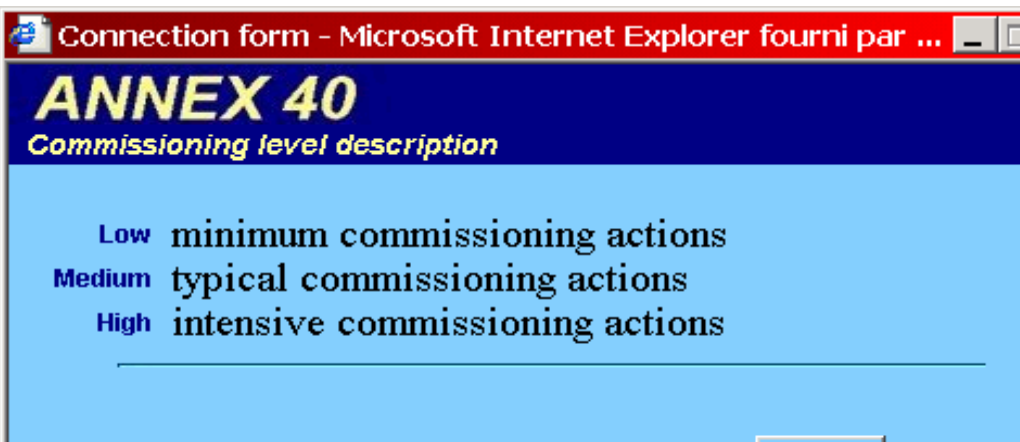
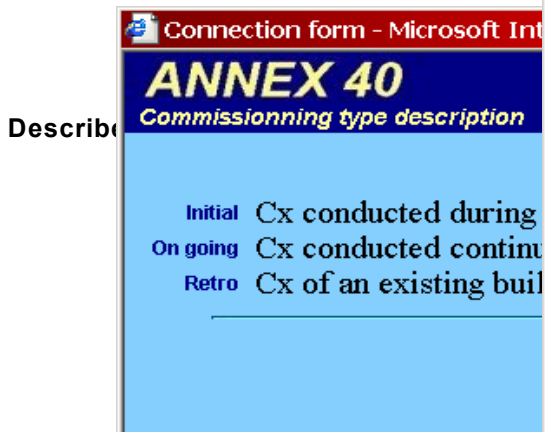
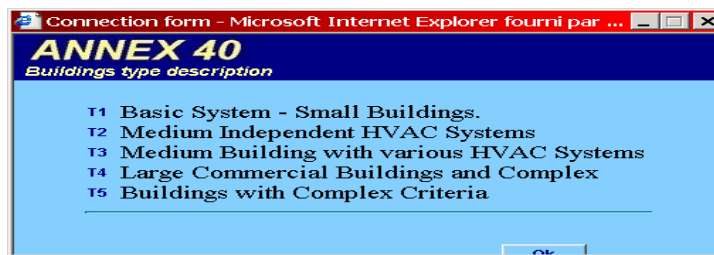


tool help the user to describe his project, the result will be a list of tasks adapted to this description

Type of building

Type of Cx

Risk Level

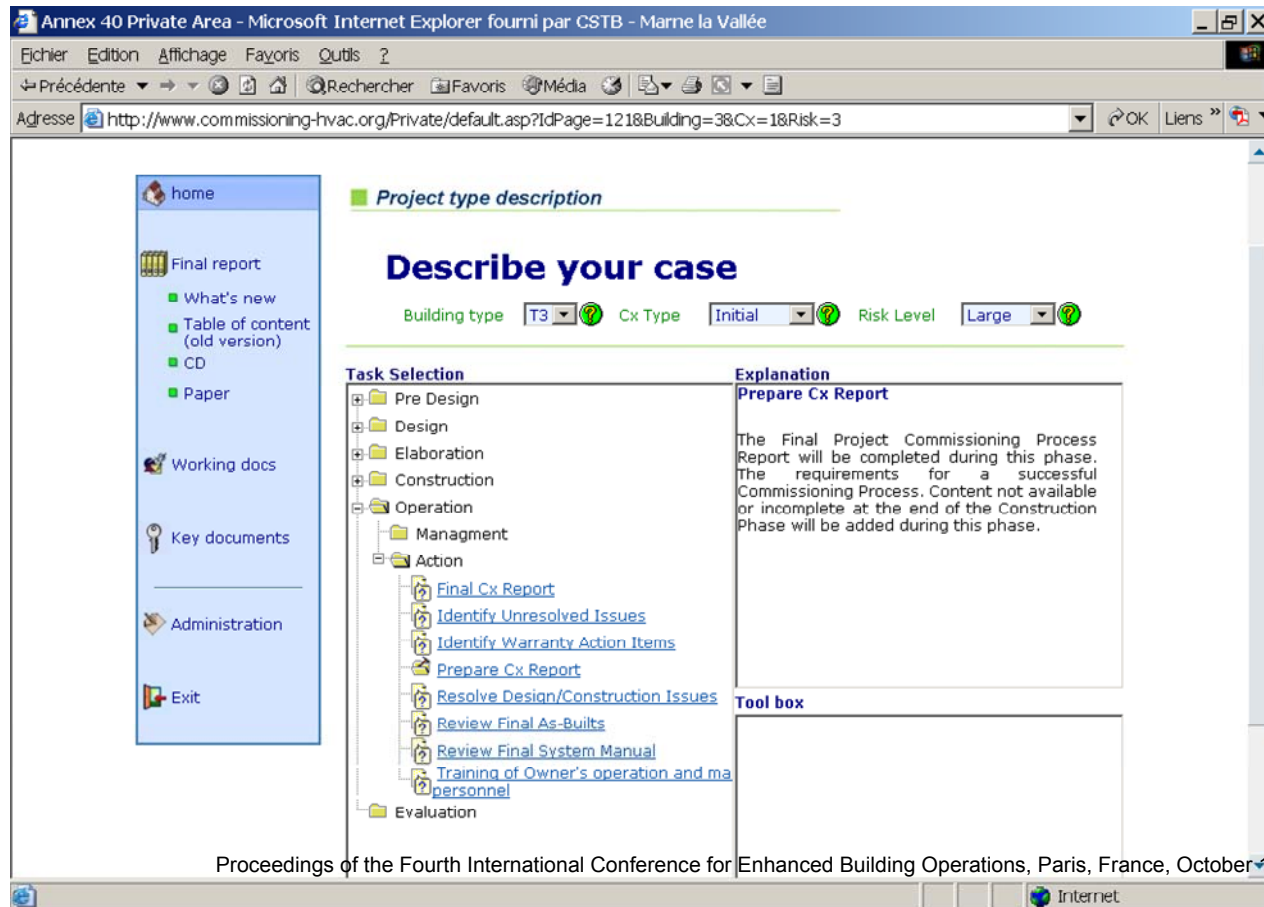




o commission a building and its HVAC system a series of activities have to be perform
these activities are sorted out following the different phases of a construction project.

Task Selection	Explanation
Pre Design	
Design	
Elaboration	
Construction	
Operation	
Management	
Action	
Final Cx Report	Prepare Cx Report The Final Project Commissioning Process Report will be completed during this phase. The requirements for a successful Commissioning Process. Content not available or incomplete at the end of the Construction Phase will be added during this phase.
Identify Unresolved Issues	
Identify Warranty Action Items	
Prepare Cx Report	
Resolve Design/Construction Issues	
Review Final As-Builts	
Review Final System Manual	
Training of Owner's operation and maintenance personnel	

This structure is clearly step and action oriented



The screenshot shows a web browser window titled "Annex 40 Private Area - Microsoft Internet Explorer fourni par CSTB - Marne la Vallée". The address bar shows the URL: <http://www.commissioning-hvac.org/Private/default.asp?IdPage=121&Building=3&Cx=1&Risk=3>. The page content includes a navigation menu on the left, a "Project type description" header, a "Describe your case" section with dropdown menus for "Building type" (T3), "Cx Type" (Initial), and "Risk Level" (Large). Below this is a "Task Selection" tree and an "Explanation" box for the "Prepare Cx Report" task.

Project type description

Describe your case

Building type: T3 Cx Type: Initial Risk Level: Large

Task Selection	Explanation
<ul style="list-style-type: none">Pre DesignDesignElaborationConstructionOperation<ul style="list-style-type: none">ManagementAction<ul style="list-style-type: none">Final Cx ReportIdentify Unresolved IssuesIdentify Warranty Action ItemsPrepare Cx ReportResolve Design/Construction IssuesReview Final As-BuiltsReview Final System ManualTraining of Owner's operation and maintenance personnelEvaluation	<p>Prepare Cx Report</p> <p>The Final Project Commissioning Process Report will be completed during this phase. The requirements for a successful Commissioning Process. Content not available or incomplete at the end of the Construction Phase will be added during this phase.</p>

Tool box

Example: Process tools for T3

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Design tools :

The image displays three screenshots of a software application titled "SMCP type 3 building 1st tool".

- Top Left Screenshot:** Shows the main menu with options: Programme, Esquisse, Avant projet, Construction, Exploitation, and Fin.
- Top Right Screenshot:** Shows the "Programme" task list with options: définir la liste de pièces, définir les rythmes d'occupation, définir les niveaux de température, définir les caractéristiques des toitures, and retour au menu principal.
- Bottom Screenshot:** Shows a table with columns "N° nom de la pièce" and "surface".

Blue arrows indicate the flow of the process: from the "Programme" menu item to the "Programme" task list, and from the "définir la liste de pièces" task to the table of room data.

N°	nom de la pièce	surface
1	Salle de jeux	150
2	Centre de loisirs	50
3	Sanitaires + rangement	50
4	Classe 1	60
5	Classe 2	60
6	Loge du gardien	15
7	Bureau de direction	15
8	Refectoire	150
9	Cuisine satellite	65
10	Classe 3	60
11	Classe 4	60
12	Classe 5	60
13	Salle de jeux	120
14	Repos 1	50
15	Salle des maîtres	25
16	Logement du gardien	60
17	Tisanerie	15
18	Classe 6	60
19	Classe 7	60
20	Classe 8	60



Demonstrations



Thanks for your attention

Questions ???