On EDMS for GDE
(but not a lecture for it)

GDE Sendai Meeting

2008/3/4

Nobu Toge
for GDE Engineering Management with
Lars Hagge and Nick Walker

Outline

1. **What is EDMS, and what is it used for?**
   – (Brief and quick)

2. **What does EDMS look, and how it is configured?**
   – (Brief and quick)

3. **So, what should we do? In terms of,**
   – Usage
   – Training
   – Organization

4. **Goal of this presentation is**
   - Initiate discussion so as,
   – To develop and reach an agreement over a couple of issues pointed out in 3, and to come up with action plans.

What is EDMS?

- **In a generic sense**
  - EDMS stands for "Electronic Document Management System",
  - Meaning, software systems that provide an orderly way of organizing a large number of documents over the lifespan of a project, providing mechanisms for revisions, traceability, searching, etc.

- **In a more specific sense,**
  - EDMS means "Engineering Data Management System".
  - In this sense, such a system also provides the basic design tool environment (CAD/CAM etc.), document management system, and work flow that are needed to conduct and carry out a complex project design and implementation like the ILC.

- **EDMS at ILC/GDE**
  - What is implemented at ILC/GDE is "Teamcenter" (commercial product). It has been originally customized for use at DESY. for EuroXFEL. Then it has been re-customized for ILC/GDE.
  - Lead Developer : Lars Hagge (DESY)

What do we use EDMS for at GDE/ILC?

- **Mission of EDMS for GDE during TDP:**
  - Provide the GDE with a group-wide platform with consistent interface and consistent rules, on which we
  - Create / renew / archive / manage / distribute / share,
  - ALL documents that describe the accelerator design / development and cost studies.

- **What this means is:**
  - All documents, e.g. Design specs, Parameter tables, Design memos, Study memos, Cost docs, etc are to be created / renewed / archived / managed / distributed /shared on EDMS.

- **We note that**
  - EDMS has a built-in version tracking mechanism.
  - EDMS also has hooks for configuration controls.

Members and their Actions
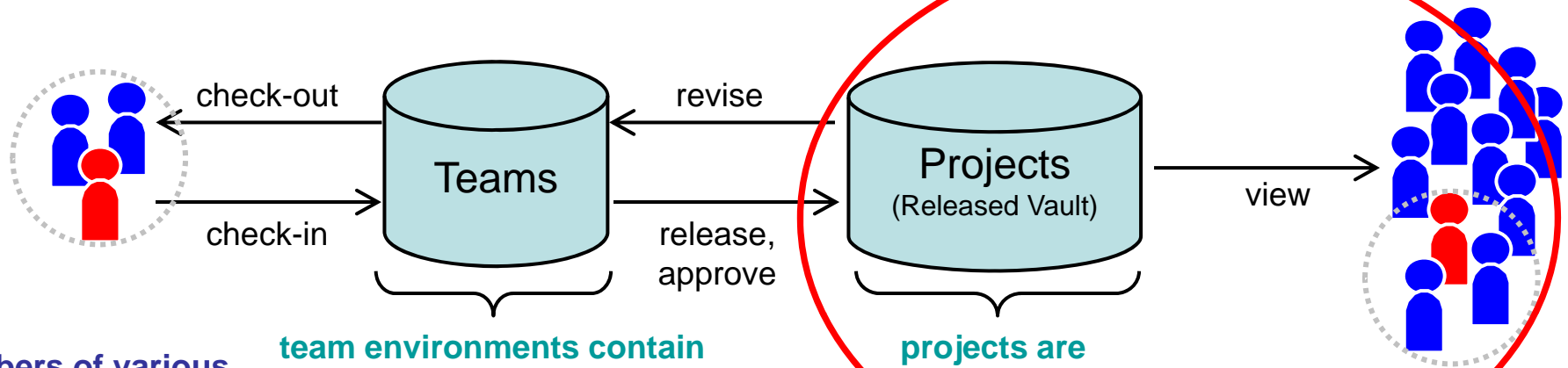
check-out

Teams

revise

Projects
(Released Vault)

view

check-in

release,
approve

team environments contain
material for daily business

projects are
global archival areas

Members of various "Teams" that are formed inside GDE, acting as document authors:.
Examples:
 TAGs
 PMO
 PM
 Special TFs
 others

Members of GDE acting as readers.

• **Projects are global archival areas which implement specific access policies; they are used for releasing and publishing items**

• Team workspaces offer structured access to those items which team members need for their daily work

What does ILC EDMS look like?

Accessing Items

- Fast Search – just like on the web
  - Advanced Search for specific queries
- browse pre-defined keyword
  - access accordingly classified items
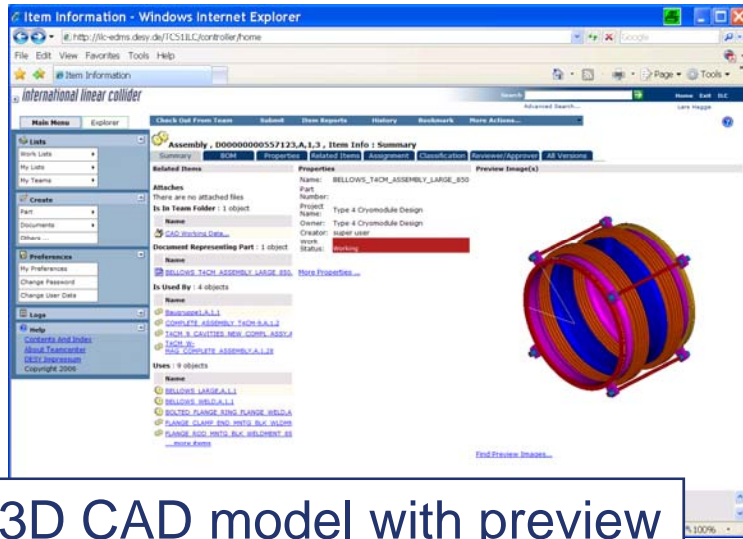- Bookmarks to frequently used items

keyword-based access

search result

# Ex. Engineering Data in EDMS (Type-4 CM)

3D CAD model with preview

EDMS-ID	Name	Work Status	Quantity
D00000000557123,A,1,3	BELLOWS_T4CM_ASSEMBLY_LARGE_850	Working	
D00000000557133,A,1,3	RING_MIDDLE_WELDMENT	Working	1
D00000000633962,A,1,2	RING_MIDDLE_WELD		1
D00000000633972,A,1,1	TUBE_RING_MIDDLE_ACT		1
D00000000633982,A,1,1	RING_MIDDLE_ACT		1
D00000000633992,A,1,1	TUBE_RING_MIDDLE		1
D00000000634002,A,1,1	RING_MIDDLE		1
D00000000557143,A,1,2	FLANGE_CLAMP_END_MNTG_BLK_WLDMNT	Working	1
D00000000557153,A,1,2	FLANGE_ROD_MNTG_BLK_WELDMENT_850	Working	1
D00000000633902,A,1,1	BELLOWS_WELD	Working	4
D00000000633912,A,1,1	BOLTED_FLANGE_RING_FLANGE_WELD	Working	2
D00000000633922,A,1,1	HEX_NUT_M30	Working	24
D00000000633932,A,1,1	ROD_CONNECTING_M30_850	Working	4
D00000000633942,A,1,1	RING_FLANGE_850	Working	

Bill of materials (BOM) for Bellow 850
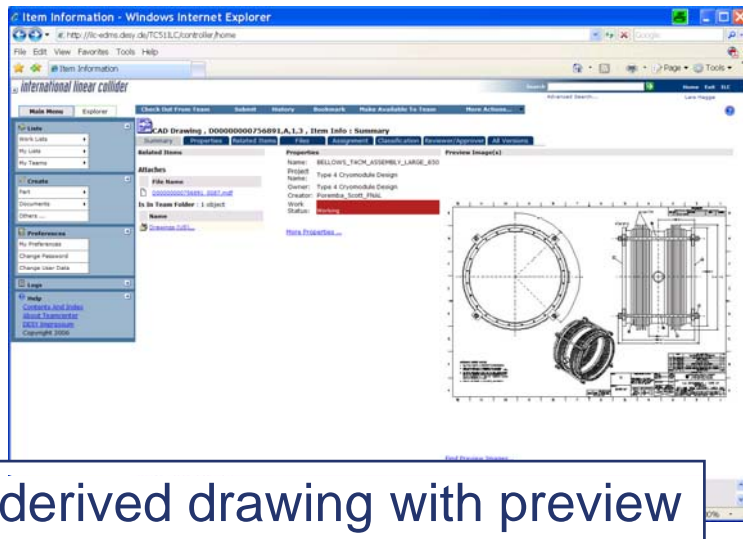
derived drawing with preview

one CAD model

**used for drawings
in different localizations**
➔ e.g. basis for
industrial study

- 1-3GHz CAVITY
- CAD Main Assemblies
- CAD Working Data
- CAD Working Data-No Magnet
- COMMERCIAL PARTS
- Documentation (IN)
- Documentation (IT)
- Documentation (KEK)
- Documentation (US)

BOM (Bill of Materials)

- Large systems are hierarchically decomposed into smaller units (called "part") to manage the complexity.

- Hierarchy is known as bill of materials (BOM), or also part breakdown structure (PBS).

- Need to define a strategy for creating the BOM to a certain level within EDMS, e.g.
  - System → subsystem → module → functional unit → component.
  - FYI, BOM to the "nuts-and-bolts" level is done by CAD.

Members and their Actions
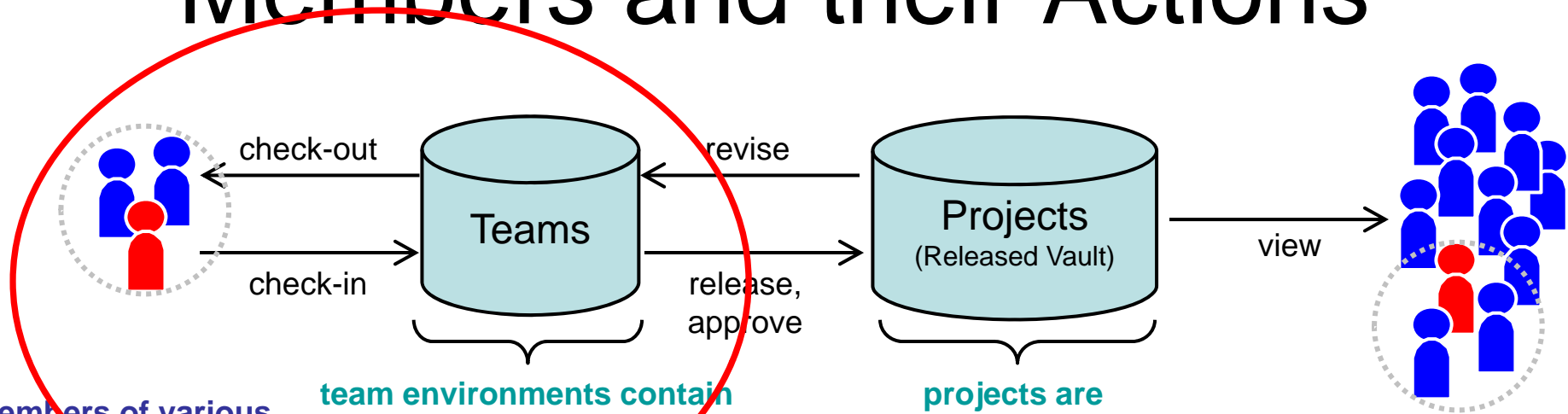
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Teams

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**team environments contain
material for daily business**

**projects are
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**Members of various
"Teams" that are
formed inside GDE,
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authors:.
Examples:
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PMO
PM
Special TFs
others**

**Members
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• Projects are global archival areas which
implement specific access policies; they
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• **Team workspaces offer structured
access to those items which team
members need for their daily work**

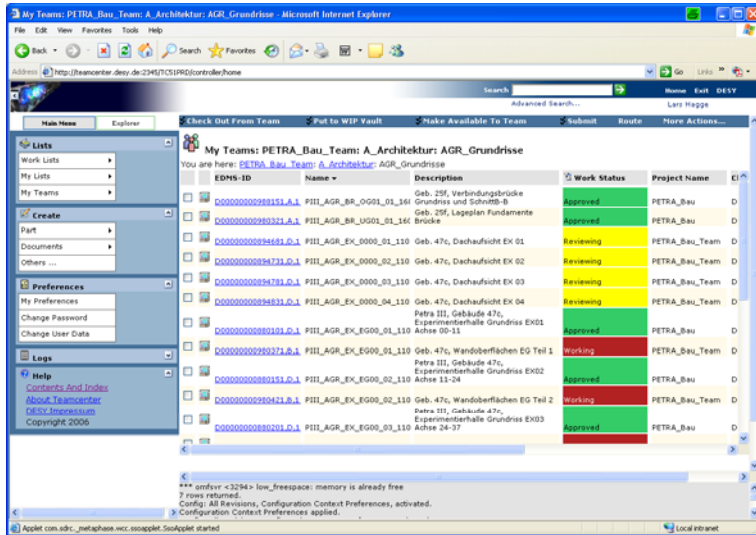# "Teams" (1)

- "Team" means
  - A group of people whose membership is explicitly defined in accordance with specific tasks within GDE. Examples: PM、PMO、TAGL, Cavity_Preparation, Cavity_Production, Cryodmodule、Cryogenics、HLRF
  - Each "Team" has its own workspace within EDMS, which is called Team Workspace.

"Teams" (2)

- A Team Workspace
  - is like a webspace which can have hierarchical file folder structure. It is much like an advanced version of wiki, but there are some differences from wiki.
  - Creation of Team Workspace at GDE is under control by Engineering management. You want a Team Workspace; you request/ask a Team Workspace. You do not freely create your Team Workspace on your own .
  - There could be exceptions but generally a Team Workspace can be read/written only by those who are registered Members of its Team.

Team Workspaces

- Workspace to access all items needed for daily work
  - red items are visible for team members only
  - green items are accessible beyond the team
  - yellow items are in the transition (under review)

- self-administrated by team leader

Team List

Team	(Primary) Team Leader
ILC_PM_Team	N. Walker
ILC_PMO_Team	N. Walker
ILC_TAG_Leaders_Team	N. Walker
ILC_Cavity_Preperation_Team	Lutz Lilje
ILC_Cavity_Production_Team	Hitoshi Hayano
ILC_Cryomodule_Team	Norihito Ohuchi
ILC_Cryogenics_Team	Tom Peterson
ILC_HLRF_Team	Shigeki Fukuda
ILC_Main_Linac_Integration_Team	Chris Adolphsen
ILC_Civil_Eng_Services_Team	John Osborne
ILC_Conv_Facilities_Process_Team	Vic Kuchler
ILC_Controls_Team	Magaret Votava
ILC_Electron_Source_Team	Axel Brachmann
ILC_Positron_Source_Team	Jim Clarke
ILC_DR_Team	Andy Wolski
ILC_RTML_Team	Nikolay Solyak
ILC_BDS_Team	Andrei Seryi
ILC_Simulation_Team	Kiyoshi Kubo

**Draft "Team" and "Team Leader" list
As of 2007/12.**

EDMS Status

- **Prior to Budget incidents of 2007**
  - Nov. 2007 - Engineering management team was formed (Hagge, Toge, Walker)
  - Nov. 2007 – Power users' course (DESY)
  - Dec. 2007 – category list (keyword list) was created and implemented
  - Dec. 2007 – Very preliminary Introduction memo

- **At the time of the Budget incidents**
  - Was about to transmit a call for "team member list" to Level 3 / 4 leaders within GDE
  - So as to implement the formal TeamSpace organization together with member list, and to start uploading the GDE-related doument files from the recent past (say, since Snowmass2005)

Known Bottlenecks

- Educational programs / training courses have been attempted a few times in the recent past (at least one at DESY, one at KEK, one at FNAL), but the population of EDMS-literate colleagues has perhaps not yet reached a critical mass.

- Easy-to-read introduction doc is still missing for quick access by majority GDE members. Actually a lot of documentation exists – we need to upload them to ILC EDMS

- "Team member list" is not complete.

- Exactly where and how we start with EDMS has not been communicated. ← That is why we are here.

How do we start? (1)

In terms of "usage" of EDMS, I would like to propose the following priority order:

1. **Uploading of existing, past design-related documents**
   - By TAGLs and their friends
   - This offers a "on-the-job" training for practically all groups, which is badly needed.
   - And this offers some real environment for GDE to start browsing other colleagues' work.
   - TAGLs can proceed with uploading newer design-related documents, too.
2. **Application of EDMS for specific WGs with urgent needs**
   - S0 / cavity-testing could be one. There could be others.
3. **Define the ILC BOM (Bill of Materials)**
4. **And also**
   - Change configuration business
   - Cost-study business
   - Design efforts with CAD data management

Rev.2

How do we start? (2)

In terms of "training" for EDMS, I suggest the following:

1. 1.5hr course has been created by L.Hagge, ready and available. The course can be given in a webex-based environment.
    –   Short, recorded versions can be made available, too. Check out a short example (by Maura) at -
        https://fnal.webex.com/fnal/k2/e.php?AT=RINF&recordingID=45279802
        Password: Test

    Then,

2. Uploading of existing, past design-related documents
    •   This offers a "on-the-job" training for practically all groups, which is perhaps is the best way to go.
    •   **The way to initiates this in the most efficiently manner would be to hold a "document uploading boot camp workshop" where TAGLs (or their assignees) physically come to one place and are forced to upload at least a few dozens of RDR-related docs, with relations/keywords and all that.**

How do we start? (3)

In terms of "organization" I suggest the following:

1. **Let us really configure our "Team" membership (with leaders identified).**
   - This allows to get the stuff in the previous slide going.
   - **And EM will have to work with TAGLs to pre-organize the recommended hierarchical structure of each of the TeamSpaces. Perhaps we will work first with some of those who are more proficient in EDMS to do this. So, please, stay tuned if you get contacted.**

2. **Let us agree on the date for the "document uploading boot camp workshop"**

3. **In addition, let us name additional POCs on the following matters and have them "intensely" start working with us.**
   - Cavity testing and other special interest groups, if any (but hopefully not to too many in the beginning).
   - "BOM" team
   - Costing – this involves cost item list and its re-organization into what is called "bills of materials" in EDMS.
   - Configuration control (Assignment has been done, but the guy has not really started)
   - CAD data organization in areas of proto-/real-design efforts.

Now, Discussion and Drafting of Specific Action plans

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- Deadline for submitting "Team Member" lists:

- Agreement on **"document uploading boot camp workshop"**

  – When:

  – Where:

- Volunteering the "Front-runner" team for preparing Team Workspace time early:

- POCs for:

  – Additional, non-TAGL teams:

  – BOM taskforce (TF):

  – Costing issues TF:

  – CAD TF: