

EDMS for the ILD

Aura Rosca

ILD Integration Meeting
Orsay, 12-13 April 2012

Outline

- What is an EDMS?
- Overview of ILD-EDMS Current Structure
- Next Steps
- Summary

What is an EDMS?

- An **E**ngineering **D**ata **M**anagement **S**ystem
EDMS is a framework which provides functionality for purposes as:
 - Document Management
 - 3D CAD Data Management
 - Configuration, Version and Change Management
 - Workflow Management
 - Visualization and Digital Mock-up

DBD, TDD and ILD-EDMS



The **D**etector **B**aseline **D**esign Report sums up the TDD ready for publication.

Technical **D**esign **D**ocumentation captures entire design efforts, results and rationale

ID	Parameter Name	Value	Units	Notes
1	Electron drive beam (primary electron beam)			
2	Electron beam energy	200	keV	
3	Electron beam current	10	mA	
4	Electron beam diameter	10	mm	
5	Electron beam pulse width	10	ns	
6	Electron beam repetition rate	10	Hz	
7	Electron beam position	0	mm	
8	Electron beam alignment	0	mm	
9	Electron beam stability	0	mm	
10	Electron beam jitter	0	mm	
11	Electron beam drift	0	mm	
12	Electron beam divergence	0	deg	
13	Electron beam spot size	0	mm	
14	Electron beam spot diameter	0	mm	
15	Electron beam spot length	0	mm	
16	Electron beam spot area	0	mm ²	
17	Electron beam spot volume	0	mm ³	
18	Electron beam spot density	0	mm ⁻³	
19	Electron beam spot mass	0	g	
20	Electron beam spot charge	0	C	
21	Electron beam spot energy	0	J	
22	Electron beam spot power	0	W	
23	Electron beam spot flux	0	1/m ² s	
24	Electron beam spot intensity	0	1/m ²	
25	Electron beam spot brightness	0	1/m ² sr	
26	Electron beam spot radiance	0	W/m ² sr	
27	Electron beam spot luminance	0	cd/m ²	
28	Electron beam spot illuminance	0	lx	
29	Electron beam spot exposure	0	s	
30	Electron beam spot dose	0	rad	
31	Electron beam spot dose rate	0	rad/s	
32	Electron beam spot dose equivalent	0	Sv	
33	Electron beam spot dose equivalent rate	0	Sv/s	
34	Electron beam spot dose equivalent rate	0	Sv/s	
35	Electron beam spot dose equivalent rate	0	Sv/s	
36	Electron beam spot dose equivalent rate	0	Sv/s	
37	Electron beam spot dose equivalent rate	0	Sv/s	
38	Electron beam spot dose equivalent rate	0	Sv/s	
39	Electron beam spot dose equivalent rate	0	Sv/s	
40	Electron beam spot dose equivalent rate	0	Sv/s	

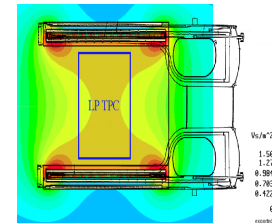
Parameters

ID	Specification Name	Value	Units	Notes
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2	Electron beam current	10	mA	
3	Electron beam diameter	10	mm	
4	Electron beam pulse width	10	ns	
5	Electron beam repetition rate	10	Hz	
6	Electron beam position	0	mm	
7	Electron beam alignment	0	mm	
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10	Electron beam drift	0	mm	
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12	Electron beam spot size	0	mm	
13	Electron beam spot diameter	0	mm	
14	Electron beam spot length	0	mm	
15	Electron beam spot area	0	mm ²	
16	Electron beam spot volume	0	mm ³	
17	Electron beam spot density	0	mm ⁻³	
18	Electron beam spot mass	0	g	
19	Electron beam spot charge	0	C	
20	Electron beam spot energy	0	J	
21	Electron beam spot power	0	W	
22	Electron beam spot flux	0	1/m ² s	
23	Electron beam spot intensity	0	1/m ²	
24	Electron beam spot brightness	0	1/m ² sr	
25	Electron beam spot radiance	0	W/m ² sr	
26	Electron beam spot luminance	0	cd/m ²	
27	Electron beam spot illuminance	0	lx	
28	Electron beam spot exposure	0	s	
29	Electron beam spot dose	0	rad	
30	Electron beam spot dose rate	0	rad/s	
31	Electron beam spot dose equivalent	0	Sv	
32	Electron beam spot dose equivalent rate	0	Sv/s	
33	Electron beam spot dose equivalent rate	0	Sv/s	
34	Electron beam spot dose equivalent rate	0	Sv/s	
35	Electron beam spot dose equivalent rate	0	Sv/s	
36	Electron beam spot dose equivalent rate	0	Sv/s	
37	Electron beam spot dose equivalent rate	0	Sv/s	
38	Electron beam spot dose equivalent rate	0	Sv/s	
39	Electron beam spot dose equivalent rate	0	Sv/s	
40	Electron beam spot dose equivalent rate	0	Sv/s	

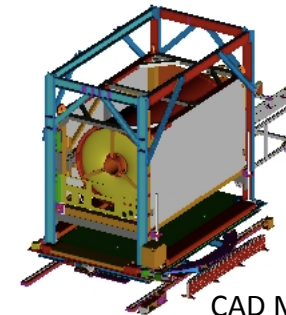
Specifications

ID	Item Name	Quantity	Unit Cost	Total Cost	Notes
1	Electron beam energy	200	keV		
2	Electron beam current	10	mA		
3	Electron beam diameter	10	mm		
4	Electron beam pulse width	10	ns		
5	Electron beam repetition rate	10	Hz		
6	Electron beam position	0	mm		
7	Electron beam alignment	0	mm		
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9	Electron beam jitter	0	mm		
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12	Electron beam spot size	0	mm		
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15	Electron beam spot area	0	mm ²		
16	Electron beam spot volume	0	mm ³		
17	Electron beam spot density	0	mm ⁻³		
18	Electron beam spot mass	0	g		
19	Electron beam spot charge	0	C		
20	Electron beam spot energy	0	J		
21	Electron beam spot power	0	W		
22	Electron beam spot flux	0	1/m ² s		
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29	Electron beam spot dose	0	rad		
30	Electron beam spot dose rate	0	rad/s		
31	Electron beam spot dose equivalent	0	Sv		
32	Electron beam spot dose equivalent rate	0	Sv/s		
33	Electron beam spot dose equivalent rate	0	Sv/s		
34	Electron beam spot dose equivalent rate	0	Sv/s		
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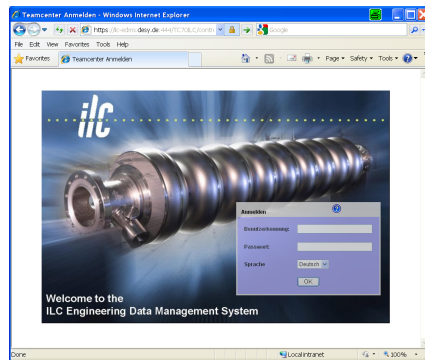
Cost Estimation



Calculations



CAD Models



The **ILD-EDMS** organizes the TDD through the provision of: structure, traceability, version, configuration and change management

Objectives of ILD-EDMS



The more effort, the more benefit!

Document Persistency

Documents are stored in the EDMS in order not to get lost

Document Traceability and Consistency

Documents are stored in the EDMS and relationships between documents are drawn (A depends on B).

Document Traceability and Consistency during engineering phase

EDMS is integrated in the design process: dependencies between documents are used to make sure documents are correct, complete and consistent.

Purpose of ILD-EDMS

- The role of EDMS:
 - Collect all relevant technical documentation, make all information persistent.
- Proposed policy:
 - Put in as many documents as possible, including presentations documenting the design;
 - Make documents available to registered ILD-EDMS users (flag as released), be as open as possible, restrict access where necessary;
 - Official documents defining the baseline are put into Work Breakdown Structure nodes (quality controlled) and need to be approved by Management.

A Look Inside the ILD-EDMS

international linear collider

Search: LD* Home Exit DESY
Advanced Search... Aura Rosca

Submit | Bookmark | Subscribe | Check Out to Team | Make Available To Team | More Actions...

Select View: ILC

Search Results
Results 1 - 50 of 500

Export Table As CSV HTML XML

Icon	ID	Name	Description	Status	Team	Type	Author	Date
📄	00000000969972.A.1.1	moduleEOLEndcap		Working	ILD_CAD_Integration_Team	Part	koasson	30.03.2011
📄	00000000969972.A.1.1	aimant		Working	ILD_CAD_Integration_Team	Part	koasson	30.03.2011
📄	00000000969972.A.1.1	Upload test	Upload test	Working	Team:ILD_Demo_Team	General Document	LiB_Berro	06.09.2011
📄	00000000969972.A.1.1	9-8-8 Cryomodule and Linac Lengths	Calculation of cryomodule length in the Main Linac, RDR situation	Released	Project: ILC_PMO	Specification	LiB_Berro	21.02.2012
📄	00000000969972.A.1.1	Test1	This is a test	Working	Team:ILD_Demo_Team	General Document	Rosca_Aura	22.08.2011
📄	00000000969972.A.1.1	Engineering Specifications for the ILC Experimental Hall	Engineering Specifications for the ILC Experimental Hall	Released	Project: ILC_MDI	Specification	LiB_Berro	24.10.2011
📄	00000000969972.A.1.1	Weekly meeting minute 4.11.2011	This is a test	Working	Team:ILD_Demo_Team	General Document	Rosca_Aura	03.11.2011
📄	00000000971055.A.1.1	MDIIntegration Webex 17.11.2011	Minutes of MDIIntegration Webex meeting on November 17th, 2011	Under Approval	Project:ILD_Integration	Meeting Minutes	Buessee_Karsten	21.02.2012
📄	00000000974815.A.1.1	ILC Laser Equipment Enclosures Design Criteria for CFS	ILC Laser Equipment Enclosures Design Criteria for CFS, draft Feb 14, 2012	Released	Project: ILC_CFS	Specification	LiB_Berro	16.02.2012
📄	00000000979965.A.1.1	ILC Naming Convention	Naming convention for the ILC tunnels and shafts, Americas region; Name: "ILC_Diagram_13-19-2012_matt.pdf"	Released	Project: ILC_CFS	Specification	LiB_Berro	19.03.2012
📄	00000000988503.A.1.1	Y3-		Working	Team:ILD_CAD_Integration_Team	Assembly	Welle_Norbert	09.11.2011
📄	00000000988503.A.1.1	Y3+		Working	Team:ILD_CAD_Integration_Team	Assembly	Welle_Norbert	09.11.2011
📄	00000000988513.A.1.1	Y3-		Working	Team:ILD_CAD_Integration_Team	Assembly	Welle_Norbert	09.11.2011

System Status: OK

There might be more items that match your search criteria.
Query successful. 500 rows returned.
2 items in the Attached Files List.
Query successful. 3 rows returned.
1 item in the Attached Files List.

Example: list of items

international linear collider

Search: D0*85283 Home Exit DESY
Advanced Search... Aura Rosca

Submit | Item Reports | Bookmark | History | History Current Lifecycle | More Actions...

Assembly, D0000000885283.A.1.15, Item Info - Summary

Summary | EBOM | Properties | Related Items | Assignment | Classification | Reviewer/Approver | All Versions

Related Items | Properties | Preview Image(s)

Name: FLC_TPC_MAIN_PROJEKT_TB24/1
Description:
Access Scheme in Use: ILC_FLC_TPC_DESY_CAD_Team
Designated Access Scheme (Project):
Creator: Beyer_Bernd
Work Status: Guided

More Properties ...



ETD
SET
TPC
TPC Large Prototype
Computing and Analysis
Integration and Installation
Large Prototype Subsystems
Data Acquisition System
End plates
Field cage
Modules
GEM Readout
Micromeg Readout
Pixelated Readout
Readout electronics
Project Management
Physics & Optimization
Project Management

Missing Plug-in
Missing Plug-in

System Status: OK

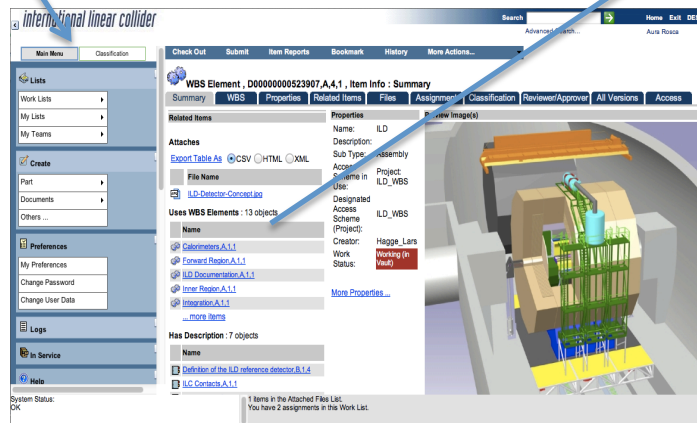
Query successful. 17 rows returned.
Query successful. 17 rows returned.
Query successful. 17 rows returned.
1 items in the Attached Files List.
There might be more items that match your search criteria.

Example: item details

Overview of the TDD structure

- [-] ● Detectors
 - [-] ● ILD
 - [+] ● Calorimeters
 - [+] ● Forward Region
 - [+] ● ILD Documentation
 - [+] ● Inner Region
 - [+] ● Integration
 - [+] ● Liaison Office
 - [+] ● Machine Detector Interface
 - [+] ● Outer Tracking
 - [+] ● Physics & Optimization
 - [+] ● Project Management
 - [+] ● Solenoid
 - [+] ● System Tests & R&D
 - [+] ● Yoke

- Implement a standardized and generally accepted Work Breakdown Structure (WBS)
- Aggregate documentation at each WBS element
 - Need to define mandatory documents to be provided at each node
- Signoff documentation for correctness, consistency and completeness



File Name

[ILD-Detector-Concept.jpg](#)

Jses WBS Elements : 13 objects

Name

- [Calorimeters,A,1,1](#)
- [Forward Region,A,1,1](#)
- [ILD Documentation,A,1,1](#)
- [Inner Region,A,1,1](#)
- [Integration,A,1,1](#)
- [... more items](#)

Has Description : 7 objects

Name

- [Definition of the ILD reference detector,B,1,4](#)
- [ILC Contacts,A,1,1](#)
- [ILD - Letter of Intent,A,1,1](#)
- [ILD Coordinate System Definition,A,1,1](#)
- [ILD Parameter Drawing,A,1,1](#)
- [... more items](#)

Has Design : 2 objects

Name

- [ILD Model,A,1,2](#)
- [ILD Placeholder Model,A,1,3](#)

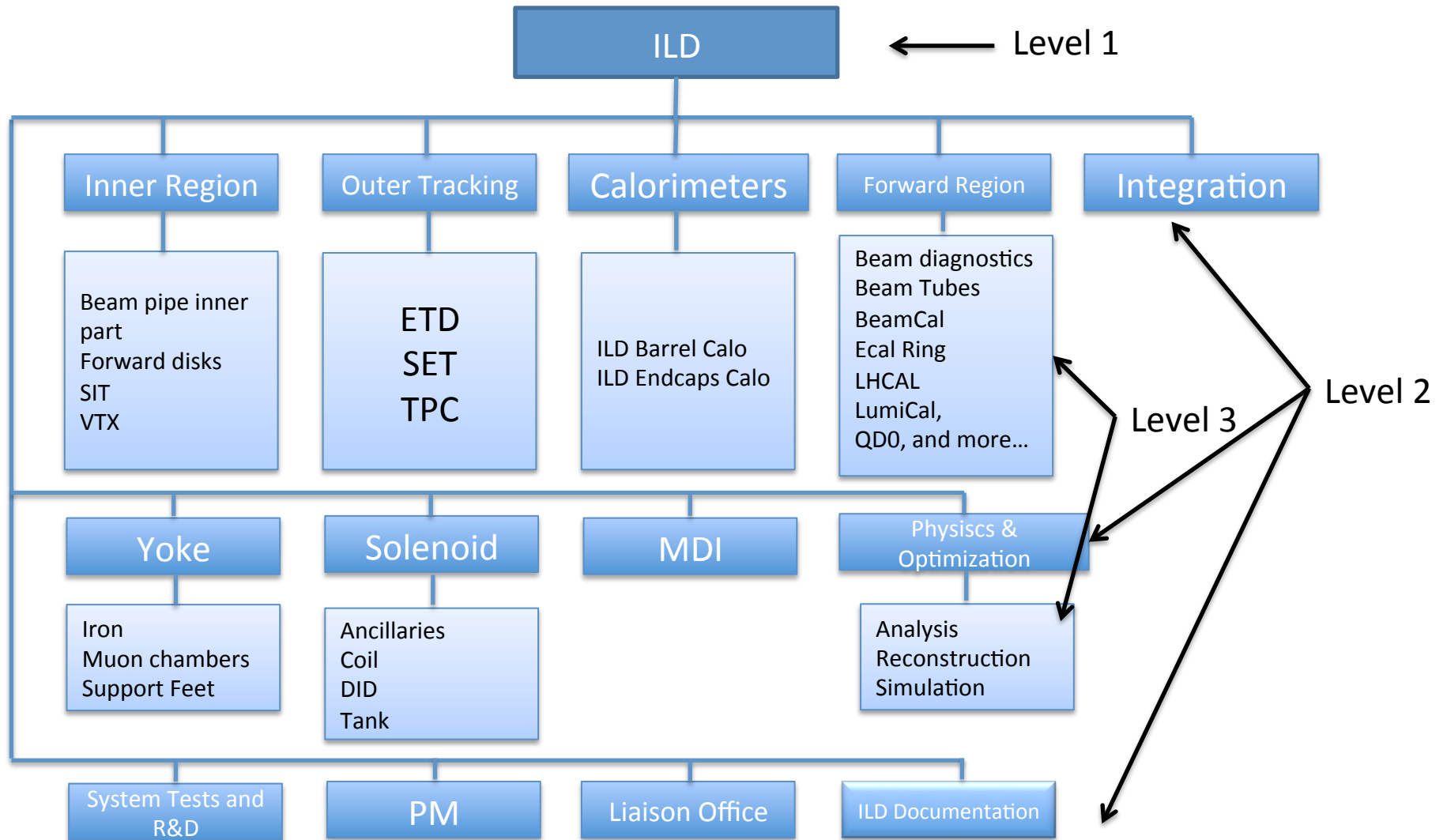
Work Breakdown Structure

- WBS provides hierarchical structure for the most relevant documents, related to the official baseline.
- WBS is quality controlled: New nodes and documents are placed there centrally (EDMS team, approved by management).
- WBS will only contain one version of any document.
- Documents to go into WBS need formal approval by management.
- WBS is a **Work** Breakdown Structure, it contains not only physical components of the machine, but also tasks like „Project Management“.

Mandatory Documents

- Documents that should be prepared for all WBS nodes:
 - Parameter lists
 - Detector description
 - Component lists
 - Component specifications
 - Calculations

ILD WBS



Keywords vs. WBS

- **WBS**: Official baseline documents go there
 - Gives access to most important, official documents
 - Centrally controlled
- **Keywords**: Any document can have any number of keywords (many, one, or none!)
 - Useful to search all available documents, including notes on work in progress, meeting minutes etc
 - Quality/usefulness depends on users who assign keywords

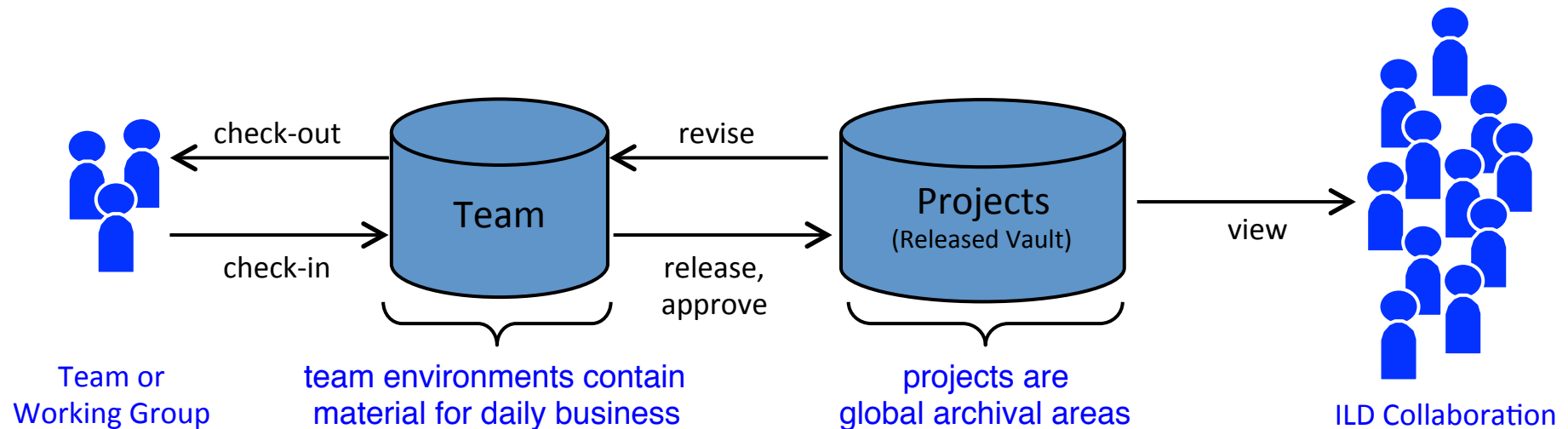
ILC Keywords

- [-] ● Accelerator Systems
 - [+] ● BDS
 - [+] ● Damping Rings
- [+] ● Electron Source
- [+] ● Main Linac
- [+] ● Positron Source
- [+] ● RTML
- [+] ● Simulation
- [-] ● Accelerator Systems
 - [+] ● Beam Delivery System
 - [+] ● Damping Ring
- [+] ● Electron Source
- [+] ● Positron Source
- [+] ● Ring to Main Linac
- [+] ● Simulations

- [-] ● Accelerator Systems
 - [-] ● BDS
 - BDS CFS Criteria
 - [+] ● BDS Collimators
 - BDS Commissioning
 - BDS Controls
 - BDS Crab RF
 - BDS Cryogenics
 - [+] ● BDS Detector Integration
 - BDS Dumps
 - BDS Installation
 - BDS Instrumentation
 - [+] ● BDS Integration
 - [+] ● BDS Lattice
 - [+] ● BDS Magnets

We need to define list of keywords.

ILD-EDMS Basic Operation Principle



- team environments offer structured access to those items which team members need for their work
- projects provide storage areas for publication, data exchange and archival purposes
- lifecycles transfer items between teams and projects

Teams

- **Team** means:
 - A group of people whose membership is explicitly defined in accordance with specific tasks within ILD
 - Each team has its own workspace within EDMS, which is called Team Workspace

Team Workspace

- A **Team Workspace**
 - Is like a webspace which can have hierarchical file folder structure.
 - Creation of Team Workspace is under control by management.
 - Generally a Team Workspace can be read/written only by those who are registered Members of its Team.
- What makes a document in a Team Workspace available for viewing by non-members of the Team is an action called **Release**. A Release action makes the documents available in a Released vault, i.e. Project.

Teams in ILD-EDMS

- ILD_Integration_Team
 - 12 members
 - TL: Catherine Clerc, Karsten Buesser, Hagge Lars
- ILD_CAD_Integration_Team
 - 20 members
 - TL: Volkenborn Robert
- ILD_MDI_Team
 - 12 members
 - TL: KB, HL, Benno List
- ILD_Physics-and-Optimisation_Team
- ILD_TPC_Team
 - 10 members
 - TL: AR, VR
- ILD_TPC_CAD_Team
 - 8 members
 - TL: VR, Prah Volker
- ILD_Yoke_Team
 - 4 members
 - TL: Uwe Schneekloth, Richard Stromhagen
- ILD_Yoke_CAD_Team
 - ???

We need to define teams for the other WBS nodes.

Next steps

- Define list of keywords
- Finalize WBS
- Define what should be assigned for each WBS element
- Assign responsible persons for each WBS element
- Define the Team structure
- Collect names of members and team leaders for each team
- Collect available 3D CAD models, 3D simulation models.
- Define deadlines

Using EDMS: First Steps

- EDMS-URL: <http://ilc-edms.desy.de>
- Request your EDMS account at ilc-edms-support@desy.de
- Start using the system – and address all the questions to ipp-support@desy.de or send me an e-mail at aura.rosca@desy.de.

Summary

- Available Technical Design Documentation is still few, we should take care that it grows and gains structure.
- We need to develop a coherent plan on how to proceed.
- Please make sure your existing and upcoming documentation makes its way into ILD-EDMS
 - The ILD-EDMS team will support you!