

# **CAD services for mechanical integration of large experiments**

**Introduction to a discussion  
aiming to collect  
comments and requirements  
from 4 LHC experiments**

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- **Introduction**

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2. **SmarTeam: CATIA data base for data storage and management**

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3. **Usage of attributes and creation of dynamic custom attributes**
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# Catia & SmarTeam

CERN has chosen the CAD product “CATIA” for in-house design. Being reinforced by the data management system “SmarTeam” it creates a solid platform to support today’s needs.



## CATIA @ CERN

CATIA is the official 3D mechanical CAD system at CERN.

### Main rules concerning use of CATIA at CERN:

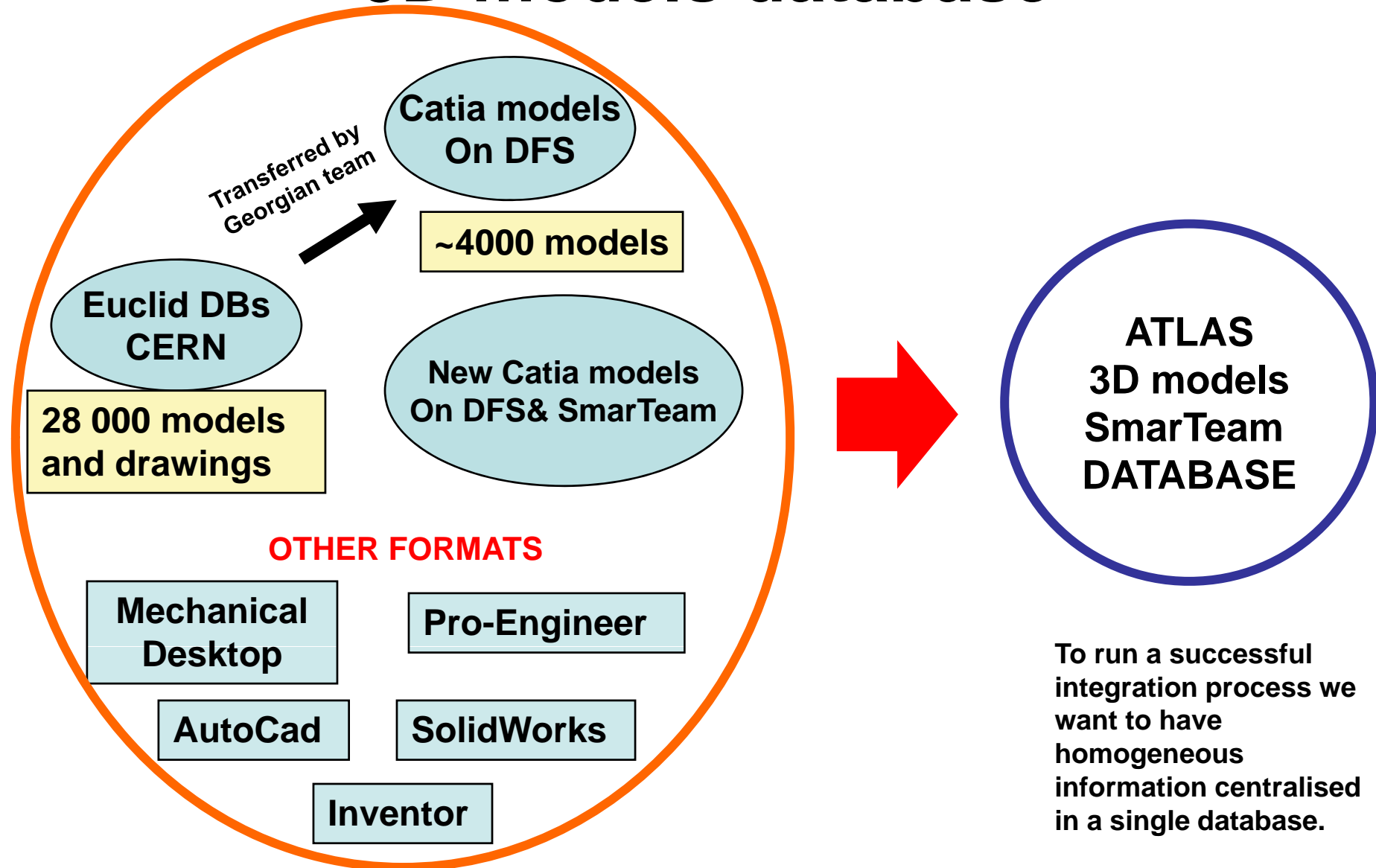
- CATIA support is given to trained users on supported computer configurations. The CATIA training is organized via the CERN Technical Training (<https://hr-training.web.cern.ch/hr-training/>).
- CATIA for mechanical design is in production. CATIA with full data management tools will be in production in mid-2008.
- CATIA is to be used in new CERN non-LHC projects requiring 3D CAD.
- The CERN Euclid production service will be stopped by the end of 2008. Euclid data owners are strongly encouraged to migrate the critical data to CATIA as soon as possible, preferably by mid-2008. For migration methods and tools see documentation in <https://edms.cern.ch/document/841521/1>. For more information contact CAD support.

### Rules for storing of CATIA data:

- New projects shall use the CATIA data base ([SmarTeam](#)) for data storage and management.
- Data stored in file systems shall be migrated to the CATIA data base, as soon as possible, preferably by mid-2008. For more information contact CAD support.

(From CAD support web page)

# ATLAS strategy for organization of 3D models database



# MODELS SEARCH

SmarTeam offers us advanced Search functions

We need a **WEB interface** to allow external users to Find and Visualize 3D models  
+  
**Equivalent of "CONSULT"** to Retrieve models in different formats

- By user
- By date
- By project
- Last modified
- Old Euclid attributes
- .....

ALL THIS WORKS At CERN

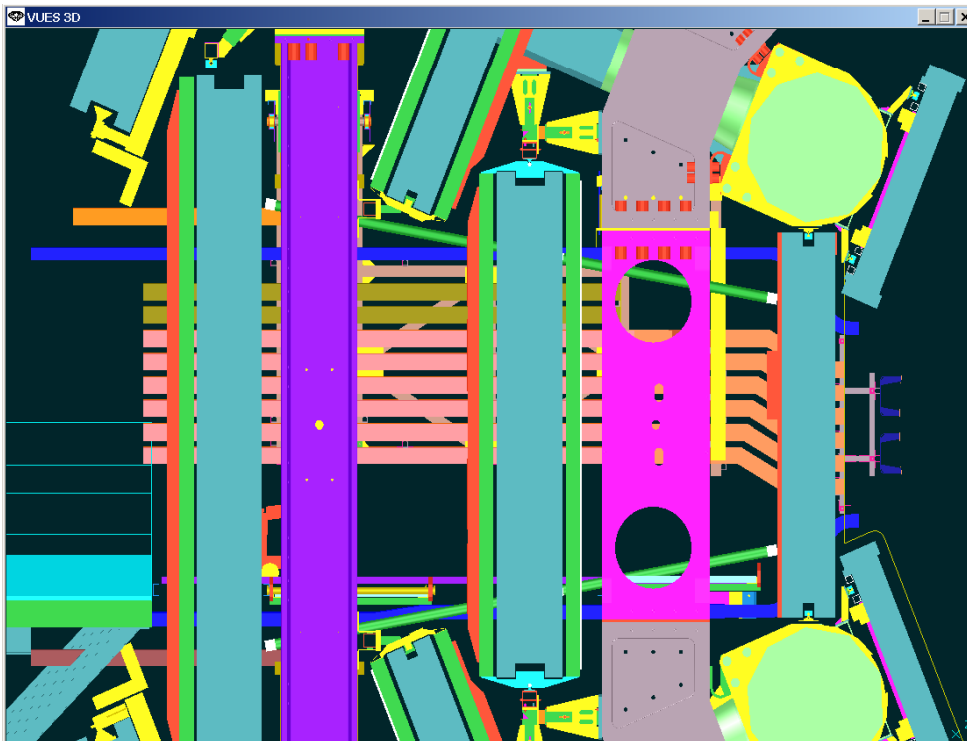
Question:  
Can we open this functionality to external design offices?

# MODELS SEARCH

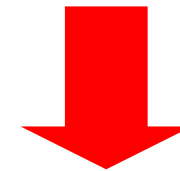
How we managed Global integration In Euclid?

Creating "Help Assemblies"

Creating lists of models (by designers, by functions...)



	Name of model	Euclid number (assembly)	A3	A2	A1	Z0 region	C1	C2	C3	Coordinate System	
43	BOS platforms sec 8	AT13021_082 Cplra assembly	G:\Sensas\Mechanical\CAD\ca\CFE\PA11\A11\J5CT_1\AT13021_082_for_standard_CAD\product							1102	
44											
45											
46	BOS platforms sec 8	Cplra TRIP assembly	G:\Sensas\Mechanical\CAD\ca\CFE\PA11\A11\J5CT_1\Vers4\BOS_access_S2\B\Sec8_Cplra\product							1102	
47											
48											
49	Strut platforms sec 9	AT392443M-Q	AT392030M-Q (Mr. Sym. 201)	AT392036M-Q (Mr. Sym. 201)	AT392044M-Q (Mr. Sym. 201)	AT392449M-Q (Mr. Sym. 201)	A1202447M-Q (Mr. Sym. 201)	AT392054M-Q (M.S. 201, 203)	AT392068M-Q (M.S. 201, 203)	AT392038M-Q (M.S. 201, 203)	1101
50			AT392519M-Q (Mr. Sym. 201)								
51											
52	Vousoir platforms sec 9	AT392443M-Q	AT392059M-Q (Mr. Sym. 201)	AT392118M-Q (Mr. Sym. 201)	AT392144M-Q (Mr. Sym. 201)	see plat strut sec?	AT392144M-Q (M.S. 201, 203)	AT392238M-Q (M.S. 201, 203)	AT392595M-Q (Mr. Sym. 203)	1101	
53											
54											
55	Vousoir platforms sec 10	AT392444M-Q	AT392125M-Q (Mr. Sym. 201)	AT392598M-Q (Mr. Sym. 201)	AT392125M-Q (Mr. Sym. 201)		AT392229M-Q (M.S. 201, 203)	AT392238M-Q (M.S. 201, 203)	AT392213M-Q (M.S. 201, 203)	1101	
56											
57											
58	Strut platforms sec 11	AT392495M-Q	AT392319M-Q (Mr. Sym. 201)	AT392388M-Q (Mr. Sym. 201)	AT392068M-Q (Mr. Sym. 201)	AT392567M-Q (Mr. Sym. 201)	AT392068M-Q (M.S. 201, 203)	AT392068M-Q (M.S. 201, 203)	AT392119M-Q (M.S. 201, 203)	1101	
59			AT392508M-Q (Mr. Sym. 201)								
60							AT392508M-Q (Mr. Sym. 201, 203)				
61	Vousoir platforms sec 11	AT392496M-Q	AT392574M-Q (Mr. Sym. 201)	AT392557M-Q (Mr. Sym. 201)	AT392540M-Q (Mr. Sym. 201)	AT392568M-Q (Mr. Sym. 201)	AT392540M-Q (M.S. 201, 203)	AT392557M-Q (M.S. 201, 203)	AT392574M-Q (M.S. 201, 203)	1101	
62											
63	Strut platforms sec 13	AT392029M-Q								1101	
64	Vousoir platforms sec 13	AT392029M-Q								1101	
65											
66	Strut platforms sec 15	AT392434M-Q	AT392319M-Q (Mr. Sym. 201)	AT392036M-Q (Mr. Sym. 201)	AT392068M-Q (Mr. Sym. 201)		AT392068M-Q (Mr. Sym. 203)	AT392068M-Q (Mr. Sym. 203)	AT392319M-Q (Mr. Sym. 203)	1101	
67			AT392598M-Q								
68							AT392598M-Q (Mr. Sym. 203)				
69	Vousoir platforms sec 15	AT392475M-Q	AT392574M-Q (Mr. Sym. 201)	AT392557M-Q (Mr. Sym. 201)	AT392540M-Q (Mr. Sym. 201)	AT392568M-Q (Mr. Sym. 201)	AT392540M-Q (Mr. Sym. 203)	AT392557M-Q (Mr. Sym. 203)	AT392574M-Q (Mr. Sym. 203)	1101	
70											
71	Vousoir platforms sec 16	AT392467M-Q	AT392229M-Q (M.S. 201, 203)	AT392230M-Q (M.S. 201, 203)	AT392229M-Q (M.S. 201, 203)		AT392239M-Q (M.S. 201, 203)	AT392518M-Q (M.S. 201, 203)	AT392330M-Q (M.S. 201, 203)	1101	

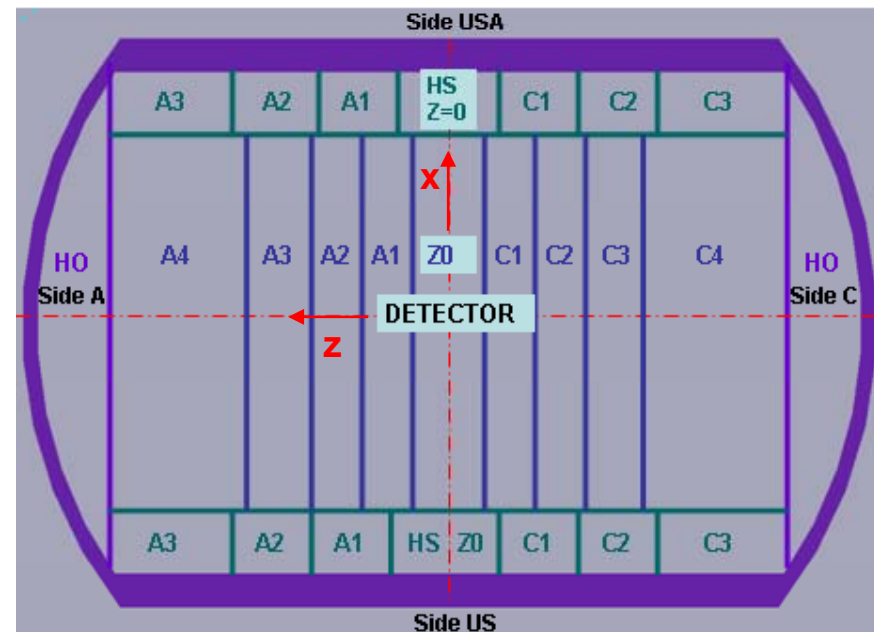
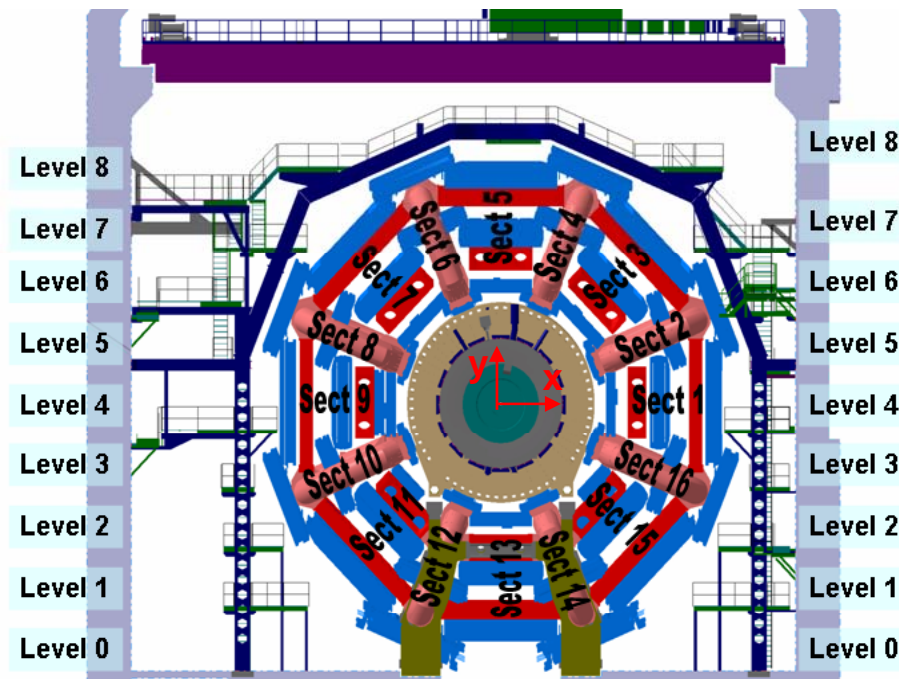


We need "geographic" search:

- By regions inside the experiment
- By coordinates
- models close to a given object
- ...

# MODELS SEARCH

Experience with ATLAS integration processes leads to specific requirements in the 3D models and drawings search functionality. In addition to ability to run efficiently “traditional” attribute-based search (including custom attributes) designers need a “geographic” search, where a query language supports object coordinate expressions and detector’s regions. Some similarities may be found in the famous “Google Earth” product. An ergonomic graphic user interface would facilitate and increase efficiency of the search process. Additional requirements include search for inter-detector dependencies (sharable services, support structures).



# Work Methodology for big assemblies-1

One way of storing design information in Smarteam : put together all parts, drawings and assemblies in the same folder

The screenshot displays the SmarTeam software interface. On the left, a 'Projects Tree' shows a hierarchical structure of projects, including 'EXPERIMENTS', 'ALICE', 'ATLAS', and 'Barrel SS'. The main area on the right shows a table with columns for 'Class', 'Part Number', 'Definition', 'ST S', 'Revision', 'Nomenclature', and 'Last modific'. The table lists various parts and assemblies, such as 'Services fixes Barrel SS-Réservation volume' and 'LAYOUT PHYSIQUE-STRAWMAN06'.

	Class	Part Number	Definition	ST S	Revision	Nomenclature	Last modific
1		ST0054235_01	Services fixes Barrel SS-Réservation volume		a.00		05/19/2008 1
2		ST0054655_01	Services amovibles Barrel SS-en place		a.00		05/16/2008 1
3		ST0050008_01	LAYOUT PHYSIQUE-STRAWMAN06		a.00		05/08/2008 1
4		ST0064140_01	LAYOUT BARREL SS-STRAWMAN07 V13		a.00		07/04/2008 1
5		ST0049885_01	LAYOUT BARREL LS-STRAWMAN07.1		a.00		04/24/2008 1
6		ST0052810_02	ENS BARREL-SS Strawman07		a.00		05/19/2008 1
7		ST0064191_02	ENS BARREL-SS Str07 V13-Réserv.volume		a.00		07/01/2008 1
8		ST0064191_01	ENS BARREL-SS Str07 V13		a.00		07/08/2008 1
9		ST0064191_01	ENS BARREL-SS Str07 V13		a.01		07/11/2008 1
10		ST0052810_01	ENS BARREL-SS Réserv.volume Strawman07		a.00		05/19/2008 1
11		ST0050017_01	ENS BARREL-SS Strawman06		a.00		04/24/2008 1
12		ST0052821_01	B-SS-L3-FRAME-Strawman07		a.00		04/22/2008 1
13		ST0049800_01	B-SS-L3-FRAME-Strawman06		a.00		04/24/2008 1
14		ST0064204_01	B-SS-L3-FRAME-Str07 V13		a.00		06/30/2008 1
15		ST0052823_01	B-SS-L3-FRAME SUPPORT-Strawman07		a.00		05/08/2008 1
16		ST0049799_01	B-SS-L3-FRAME SUPPORT-Strawman06		a.00		04/24/2008 1
17		ST0064206_01	B-SS-L3-FRAME SUPPORT-Réserv.vol.Str07 V13		a.00		07/09/2008 1
18		ST0052820_01	B-SS-L3-COUCHE ACTIVE-Strawman07		a.00		04/22/2008 1
19		ST0049791_01	B-SS-L3-COUCHE ACTIVE-Strawman06		a.00		04/24/2008 1
20		ST0064203_01	B-SS-L3-COUCHE ACTIVE-Str07 V13		a.00		06/30/2008 1
21		ST0052822_01	B-SS-L3-CONNECTOR-Strawman07		a.00		04/22/2008 1
22		ST0049798_01	B-SS-L3-CONNECTOR-Strawman06		a.00		04/24/2008 1
23		ST0064205_01	B-SS-L3-CONNECTOR-Str07 V13		a.00		06/30/2008 1
24		ST0052817_01	B-SS-L2-FRAME-Strawman07		a.00		04/22/2008 1
25		ST0049797_01	B-SS-L2-FRAME-Strawman06		a.00		04/24/2008 1
26		ST0064200_01	B-SS-L2-FRAME-Str07 V13		a.00		06/30/2008 1
27		ST0052819_01	B-SS-L2-FRAME SUPPORT-Strawman07		a.00		05/08/2008 1



# Work Methodology for big assemblies-2

Another way of arranging the folders: create a separate folder for top assemblies.

The top screenshot shows a folder structure where 'Access Structures ATLAS' contains sub-folders for each sector (Sector 01 to Sector 11). The table below shows the parts listed in this structure:

Class	Part Number	Definition	ST S	Revision	Nomenclature
1	ST0061713_01	Ladder_01		a.00	
2	ST0056902_01	Sec_1_Access_platforms		a.00	
3	ST0061697_01	Sec_1_Strut_Ladders_1		a.00	
4	ST0061722_01	Sec_1_Strut_Ladders_2		a.00	
5	ST0061720_01	Sec_1_Strut_Ladders_3		a.00	
6	ST0061696_01	Sec_1_Strut_Ladders_A		a.00	
7	ST0061726_01	Sec_1_Strut_Ladders_C		a.00	
8	ST0056897_01	Sec_1_Strut_platforms_A		a.00	
9	ST0056899_01	Sec_1_Strut_platforms_C		a.00	
10	ST0056888_01	Sec_1_Strut_Platform_A1		a.00	
11	ST0056886_01	Sec_1_Strut_Platform_A2		a.00	
12	ST0056884_01	Sec_1_Strut_Platform_A3		a.00	
13	ST0056889_01	Sec_1_Strut_Platform_C1		a.00	
14	ST0056887_01	Sec_1_Strut_Platform_C2		a.00	
15	ST0056885_01	Sec_1_Strut_Platform_C3		a.00	
16	ST0056896_01	Sec_1_Strut_Platform_Z0		a.00	
17	ST0060563_01	Sec_1_Voussoir_ladders_A		a.00	
18	ST0060562_01	Sec_1_Voussoir_ladders_C		a.00	

The bottom screenshot shows a folder structure where 'Inner Detector ATLAS' contains a sub-folder 'Access Structures ATLAS' which lists the top assemblies in a flat structure. The table below shows the parts listed in this structure:

Class	Part Number	Definition	ST S	Revision
1	ST0056902_01	Sec_1_Access_platforms		a.00
2	ST0056947_01	Sec_2_Access_platforms		a.00
3	ST0056962_01	Access_Platforms_inside_Atlas		a.00
4	ST0058051_01	Sec_3_Access_platforms		a.00
5	ST0064899_01	Sec_5_Access_Platforms		a.00
6	ST0064918_01	Sec_4_Access_Platforms		a.00
7	ST0064923_01	Sec_6_Access_Platforms		a.00
8	ST0087222_01	Sec_7_Access_Platforms		a.00
9	ST0087902_01	Sec_8_Access_Platforms		a.00
10	ST0088408_01	Sec_9_Access_Platforms		a.00
11	ST0091479_01	Sec_16_Access_Platforms		a.00
12	ST0091486_01	Sec_15_Access_Platforms		a.00
13	ST0091493_01	Sec_11_Access_Platforms		a.00
14	ST0091503_01	Sec_10_Access_Platforms		a.00

# Work Methodology for big assemblies-3

**SmarTeam** User area- additional possibility to store engineering data

File Search Tree Window

**Projects:**

- Projects Tree
  - Disciplines
  - Archives
  - References / Standards
  - User Area
    - A login names
    - B login names
    - C login names
    - D login names
    - E login names
    - F login names
    - G login names
    - H login names
    - I login names
    - J login names
    - K login names
    - L login names
    - M login names
    - N login names
    - O login names
    - P login names
    - patenot Contact Yves.Patenotre@cern.ch - - Other
    - perezf Contact Francisco.Perez.Gomez@cern.ch - +41227672603
    - perretp Contact Philippe.Perret@cern.ch - +41227679103 - TS/MK
    - pkulka Contact Peter.Kulka@cern.ch - +41227670986 - PH/UAT
      - BW access from HS USA level 5 ATLAS
      - Inside Toroid Barrel Access Structure ATLAS
    - pminqine Contact Pierre.Minqinette@cern.ch - +41227676136 - TS
    - pmoyret Contact Pierre.Moyret@cern.ch - +41227672073 - TS/MK
    - porlandi Contact Philippe.Orlandi@cern.ch - +41227672254 - TS/
    - pospich Contact Petr.Pospichal@cern.ch - +41227671159 - PH/A
    - prepetti Contact pierre\_e\_repetti@windowslive.com - - Other
    - Q login names
    - R login names
    - S login names
    - T login names
    - U login names
    - V login names
    - W login names
    - X login names
    - Y login names
    - Z login names
    - Official Projects
      - EXPERIMENTS
        - AEGIS ANTI HYDROGEN MASS MEASURING
        - ALFA
        - ALICE
        - ASACUSA

Profile Card Links Notes

	Class	Part Number	Definition	ST S	Revision	Nomenclature	Last modificati
1		ST0067345_03	Frame_BW_Access_A		a.00	ATLHXF__001	07/02/2008 16:...
2		ST0067328_03	Flooring_sheet_02		a.00	ATLHXF__002	07/02/2008 16:...
3		ST0067348_03	Flooring_sheet_01		a.00	ATLHXF__002	07/02/2008 16:...
4		ST0067344_04	BW_Access_A		a.00	ATLHXF__002	08/11/2008 11:...
5		ST0067333_03	Door_BW_Access		a.00	ATLHXF__002	07/04/2008 10:...
6		ST0067322_03	BW_Access_C		a.00	ATLHXF__002	08/11/2008 11:...
7		ST0067329_03	HandRail		a.00	ATLHXF__002	07/04/2008 10:...
8		ST0067338_03	Stopper		a.00	ATLHXF__002	07/04/2008 10:...
9		ST0067339_03	Sheet		a.00	ATLHXF__002	07/04/2008 10:...
10		ST0067323_03	Frame_BW_Access_C		a.01	ATLHXF__002	08/11/2008 11:...
11		ST0068561_01	Bill_BW_access		a.00		07/02/2008 16:...
12		ST0067322_01	BW_Access_C		a.00	ATLHXF__002	08/11/2008 10:...
13		ST0067323_01	Frame_BW_Access_C		a.00	ATLHXF__002	07/01/2008 17:...
14		ST0067329_01	HandRail		a.00	ATLHXF__002	07/01/2008 17:...
15		ST0067333_01	Door_BW_Access		a.00	ATLHXF__002	08/11/2008 10:...
16		ST0067340_01	Clamp_assembly		a.00		07/01/2008 17:...
17		ST0067344_03	BW_Access_A		a.00	ATLHXF__002	08/11/2008 10:...
18		ST0067345_01	Frame_BW_Access_A		a.00	ATLHXF__001	07/03/2008 15:...
19		ST0071389_01	BW_Access_help_assy		a.00		08/11/2008 10:...
20		ST0090892_01	HandRail 2 for BW access platforms		a.00	ATLHXF__003	08/11/2008 11:...
21		ST0067324_01	Angel_80_03		a.00		07/01/2008 16:...
22		ST0067325_01	Angel_80_04		a.00		07/01/2008 16:...
23		ST0067326_01	Angel_80_05		a.00		07/01/2008 16:...
24		ST0067327_01	Flat_bar		a.00		07/02/2008 15:...
25		ST0067328_01	Flooring_Sheet_02		a.00	ATLHXF__002	07/01/2008 17:...
26		ST0067330_01	Square_Tube_02		a.00		07/01/2008 16:...
27		ST0067331_01	Square_Tube_01		a.00		07/01/2008 16:...
28		ST0067332_01	Round_Tube_01		a.00		07/01/2008 16:...
29		ST0067334_01	Square_Tube_04		a.00		07/01/2008 16:...
30		ST0067335_01	Square_Tube_03		a.00		07/01/2008 16:...
31		ST0067336_01	Round_Tube_02		a.00		07/16/2008 10:...
32		ST0067337_01	Half_Hinge		a.00		07/01/2008 16:...
33		ST0067338_01	Stopper		a.00	ATLHXF__002	07/04/2008 10:...
34		ST0067339_01	Sheet		a.00	ATLHXF__002	07/14/2008 17:...
35		ST0067341_01	Clipped_washer		a.00		07/01/2008 16:...
36		ST0067342_01	Flat_top_fixing_B12		a.00		07/01/2008 16:...

Login: tklioutc

# Work Methodology for big assemblies-4

Some designers started to use Catia when Smarteam was not yet available. They saved data on DFS in personal folders.

The screenshot shows a Windows Explorer window with the address bar set to `G:\Services\MechanicalCAD\Catia\Pospichal`. The main pane displays a list of folders and files. A red arrow points to the folder `JD_Lifting_Beam`. A secondary window is open, showing the contents of `Catia\Pospichal\JD_Lifting_Beam`.

Name	Size	Type	Date Modified
Air-Pad Chains		File Folder	3/15/2007 5:43 PM
Buffer_Zone		File Folder	6/17/2008 5:00 PM
BW_Access_Pltf		File Folder	7/18/2008 9:41 AM
Chain_Clamps		File Folder	
Different		File Folder	
ECT		File Folder	
ECT_Access_Platform		File Folder	
HF_Light_Truck		File Folder	
HF_Truck_Compres...		File Folder	
JD_Docking		File Folder	
JD_Frame_Calculation		File Folder	
JD_in_SX1		File Folder	
JD_Lifting_Beam		File Folder	
JD_Z_Bracket		File Folder	
Jenda		File Folder	
JF_Installation		File Folder	
Load_Test_Beam		File Folder	
Round_Scaffolding_...		File Folder	
Training		File Folder	
Truck_Movement		File Folder	
FC_Gap_1.jpg	160 KB	JPG	
FC_Gap_2.jpg	325 KB	JPG	
FC_Gap_Assy.CATD...	1,489 KB	CAT	
FC_Gap_Assy.CATP...	616 KB	CAT	
Shortcut to Training	1 KB	Sho	

Name	Size	Type	Date Modified
Calculation		File Folder	11/16/2007 3:31 PM
Bolt_M20x80_ISO4...	171 KB	CATIA Part	7/19/2007 9:59 AM
Central_Plate.CATPart	206 KB	CATIA Part	11/7/2007 12:10 PM
Cover.CATDrawing	496 KB	CATIA Drawing	9/19/2007 2:51 PM
Design_Final.zip	4,062 KB	WinRAR ZIP archive	11/6/2007 7:27 PM
Design_Old.zip	4,045 KB	WinRAR ZIP archive	10/18/2007 4:24 PM
Distance_Ring.CATP...	63 KB	CATIA Part	7/16/2007 3:42 PM
Fasteners.CATProduct	34 KB	CATIA Product	7/20/2007 6:41 PM
HEB_1.CATPart	96 KB	CATIA Part	10/4/2007 6:21 PM
HEB_2.CATPart	180 KB	CATIA Part	9/10/2007 11:57 AM
Hook_calc.CATPart	88 KB	CATIA Part	7/10/2007 1:45 PM
JD_SX1.CATProduct	11,123 KB	CATIA Product	9/20/2007 6:20 PM
Load_Desk.CATPart	86 KB	CATIA Part	6/21/2007 9:27 AM
Load_Plate.CATPart	66 KB	CATIA Part	6/21/2007 9:27 AM
Load_Suspension.C...	81 KB	CATIA Part	6/21/2007 9:27 AM
Lug.CATPart	121 KB	CATIA Part	7/10/2007 1:45 PM
Lug_Simple.CATPart	67 KB	CATIA Part	6/21/2007 9:27 AM
Lug_Sling.CATProd...	36 KB	CATIA Product	7/23/2007 9:14 AM
Old1.zip	2,286 KB	WinRAR ZIP archive	9/27/2007 8:33 AM
Old2_HEB400.zip	825 KB	WinRAR ZIP archive	9/27/2007 8:33 AM
Old.zip	1,912 KB	WinRAR ZIP archive	9/27/2007 8:33 AM
Pallonier_JD.CATPro...	295 KB	CATIA Product	11/7/2007 12:24 PM
Palonnier_JD.CATDr...	1,769 KB	CATIA Drawing	4/9/2008 2:06 PM
Palonnier_JD_Assy...	1,190 KB	CATIA Drawing	9/19/2007 4:59 PM
Palonnier_JD_Assy...	108 KB	CATIA Product	1/22/2008 4:57 PM
Palonnier_Lug_2.CA...	102 KB	CATIA Part	6/21/2007 9:27 AM
Palonnier_Lug_Side...	46 KB	CATIA Product	6/21/2007 10:32 AM
Palonnier_Overall_di...	611 KB	CATIA Drawing	10/4/2007 3:35 PM
Palonnier_Pin.CATPart	61 KB	CATIA Part	7/23/2007 9:14 AM
Pin_Hook.CATDrawi...	562 KB	CATIA Drawing	11/12/2007 4:15 PM
Pin_Hook.CATPart	448 KB	CATIA Part	7/20/2007 6:41 PM

# Work Methodology for big assemblies-5

Address G:\Services\MechanicalCAD\Catia\Standards\cgr\1102

**3D models transferred from Euclid to Catia are stored on DFS with reference to CDD folders . We need to import them to Smarteam.**

**File and Folder Tasks**

- Make a new folder
- View previous versions

**Other Places**

- ATCUL : 3D CATIA Objects of Tile Calorimeter**
  - ATCULB** : 3D CATIA Objects of Tile Barrel Calorimeter
  - ATCULE** : 3D CATIA Objects of Tile Extended Calorimeter
- ATCUT : 3D CATIA Objects of Toroid Magnets**
  - ATCUTB** : 3D CATIA Objects of Barrel Toroid
  - ATCUTE** : 3D CATIA Objects of End-Cap Toroid
- ATCUM : 3D CATIA Objects of Muon Spectrometer**
  - ATCUMB** : 3D CATIA Objects of Barrel Brackets & Rails
  - ATCUMC** : 3D CATIA Objects of Chambers
  - ATCUMA** : 3D CATIA Objects of Alignment
- ATCUJ : 3D CATIA Objects of Shieldings**
- ATCUS : 3D CATIA Objects of Services**
  - ATCUSB** : 3D CATIA Objects of Barrel Calorimeter
  - ATCUSE** : 3D CATIA Objects of Extended Calorimeter
  - ATCUSM** : 3D CATIA Objects of Muon Spectrometer
  - ATCUSR** : 3D CATIA Objects of Racks, Cable Trays
  - ATCUSG** : 3D CATIA Objects of Gas
  - ATCUSO** : 3D CATIA Objects of Cooling
- ATCUH : 3D CATIA Objects of Support Structures**
  - ATCUHX** : 3D CATIA Objects of Access Structures
  - ATCUHB** : 3D CATIA Objects of Feet and Rails

UMC__1166.cgr	UMC__1207.cgr	UMC__1248.cgr	UMC__1289.cgr	UMC__1330.cgr	UMC__1373.cgr	USB__0016.cgr
UMC__1167.cgr	UMC__1208.cgr	UMC__1249.cgr	UMC__1290.cgr	UMC__1331.cgr	UMC__1374.cgr	USB__0017.cgr
UMC__1168.cgr	UMC__1209.cgr	UMC__1250.cgr	UMC__1291.cgr	UMC__1332.cgr	UMC__1375.cgr	USB__0018.cgr
UMC__1169.cgr	UMC__1210.cgr	UMC__1251.cgr	UMC__1292.cgr	UMC__1333.cgr	UMC__1376.cgr	USB__0019.cgr
		UMC__1252.cgr	UMC__1293.cgr	UMC__1334.cgr	UMC__1377.cgr	USB__0020.cgr
		UMC__1253.cgr	UMC__1294.cgr	UMC__1335.cgr	UMC__1378.cgr	USB__0021.cgr
		UMC__1254.cgr	UMC__1295.cgr	UMC__1336.cgr	UMC__1379.cgr	USB__0022.cgr
		UMC__1255.cgr	UMC__1296.cgr	UMC__1337.cgr	UMC__1380.cgr	USB__0023.cgr
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		UMC__1263.cgr	UMC__1304.cgr	UMC__1347.cgr	UMC__1388.cgr	USB__0031.cgr
		UMC__1264.cgr	UMC__1305.cgr	UMC__1348.cgr	UMC__1389.cgr	USB__0032.cgr
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		UMC__1280.cgr	UMC__1321.cgr	UMC__1364.cgr	USB__0007.cgr	USB__0048.cgr
		UMC__1281.cgr	UMC__1322.cgr	UMC__1365.cgr	USB__0008.cgr	USB__0049.cgr
		UMC__1282.cgr	UMC__1323.cgr	UMC__1366.cgr	USB__0009.cgr	USB__0050.cgr
		UMC__1283.cgr	UMC__1324.cgr	UMC__1367.cgr	USB__0010.cgr	USB__0051.cgr
		UMC__1284.cgr	UMC__1325.cgr	UMC__1368.cgr	USB__0011.cgr	USB__0052.cgr

Type: CGR File  
Size: 627 KB

# Work Methodology for big assemblies

We start working using new complex system. Every designer starts inventing his own methods of work. We need answers to all kind of questions, like:

Do we put together all parts, documents and assemblies in the same folder or create a separate folder for top assemblies?

Attempt to re-create sub-assemblies in SmarTeam – is it a good way of search problem solving?

**We need a well defined work methodology similar for all designers**


# Usage of attributes and creation of dynamic custom attributes

Presentation of an object in Smarteam: can we modify this main page to give more useful information?

	Class	Part Number	Definition
1		ST0054235_01	Services fixes Barrel SS-Réreservation volume
2		ST0054655_01	Services amovibles Barrel SS-en place
3		ST0050008_01	LAYOUT PHYSIQUE-STRAWMAN06
4		ST0064140_01	LAYOUT BARREL SS-STRAWMAN07 V13
5		ST0049885_01	LAYOUT BARREL LS-STRAWMAN07.1
6		ST0052810_02	ENS BARREL-SS Strawman07
7		ST0064191_02	ENS BARREL-SS Str07 V13-Réserv.volume
8		ST0064191_01	ENS BARREL-SS Str07 V13
9		ST0064191_01	ENS BARREL-SS Str07 V13
10		ST0052810_01	ENS BARREL-SS Réserv.volume Strawman0
11		ST0050017_01	ENS BARREL-SS Strawman06
12		ST0052821_01	B-SS-L3-FRAME-Strawman07
13		ST0049800_01	B-SS-L3-FRAME-Strawman06
14		ST0064204_01	B-SS-L3-FRAME-Str07 V13
15		ST0052823_01	B-SS-L3-FRAME SUPPORT-Strawman07
16		ST0049799_01	B-SS-L3-FRAME SUPPORT-Strawman06
17		ST0064206_01	B-SS-L3-FRAME SUPPORT-Réserv.vol.Str07
18		ST0052820_01	B-SS-L3-COUCHE ACTIVE-Strawman07
19		ST0049791_01	B-SS-L3-COUCHE ACTIVE-Strawman06
20		ST0064203_01	B-SS-L3-COUCHE ACTIVE-Str07 V13
21		ST0052822_01	B-SS-L3-CONNECTOR-Strawman07
22		ST0049798_01	B-SS-L3-CONNECTOR-Strawman06
23		ST0064205_01	B-SS-L3-CONNECTOR-Str07 V13
24		ST0052817_01	B-SS-L2-FRAME-Strawman07
25		ST0049797_01	B-SS-L2-FRAME-Strawman06
26		ST0064200_01	B-SS-L2-FRAME-Str07 V13
27		ST0052819_01	B-SS-L2-FRAME SUPPORT-Strawman07
28		ST0049796_01	B-SS-L2-FRAME SUPPORT-Strawman06
29		ST0064202_01	B-SS-L2-FRAME SUPPORT-Réserv.vol.Str07
30		ST0052812_01	B-SS-L2-COUCHE ACTIVE-Strawman07
31		ST0049790_01	B-SS-L2-COUCHE ACTIVE-Strawman06
32		ST0064199_01	B-SS-L2-COUCHE ACTIVE-Str07 V13

Profile Card | Links | Notes | Revision | Viewer

**CATIA Part** 

NEW ITEM AND DOC

ADD DOC TO ITEM

**Doc. Number** ST0049885\_01 a.00

**Definition** LAYOUT BARREL LS-STRAWMAN07.1

**Nomenclature** CDD NUM

**Coord System** ▼

**Design State** In Work ▼

**SMARTEAM St** Checked In ▼

**Document Type** Master ▼

**Description**

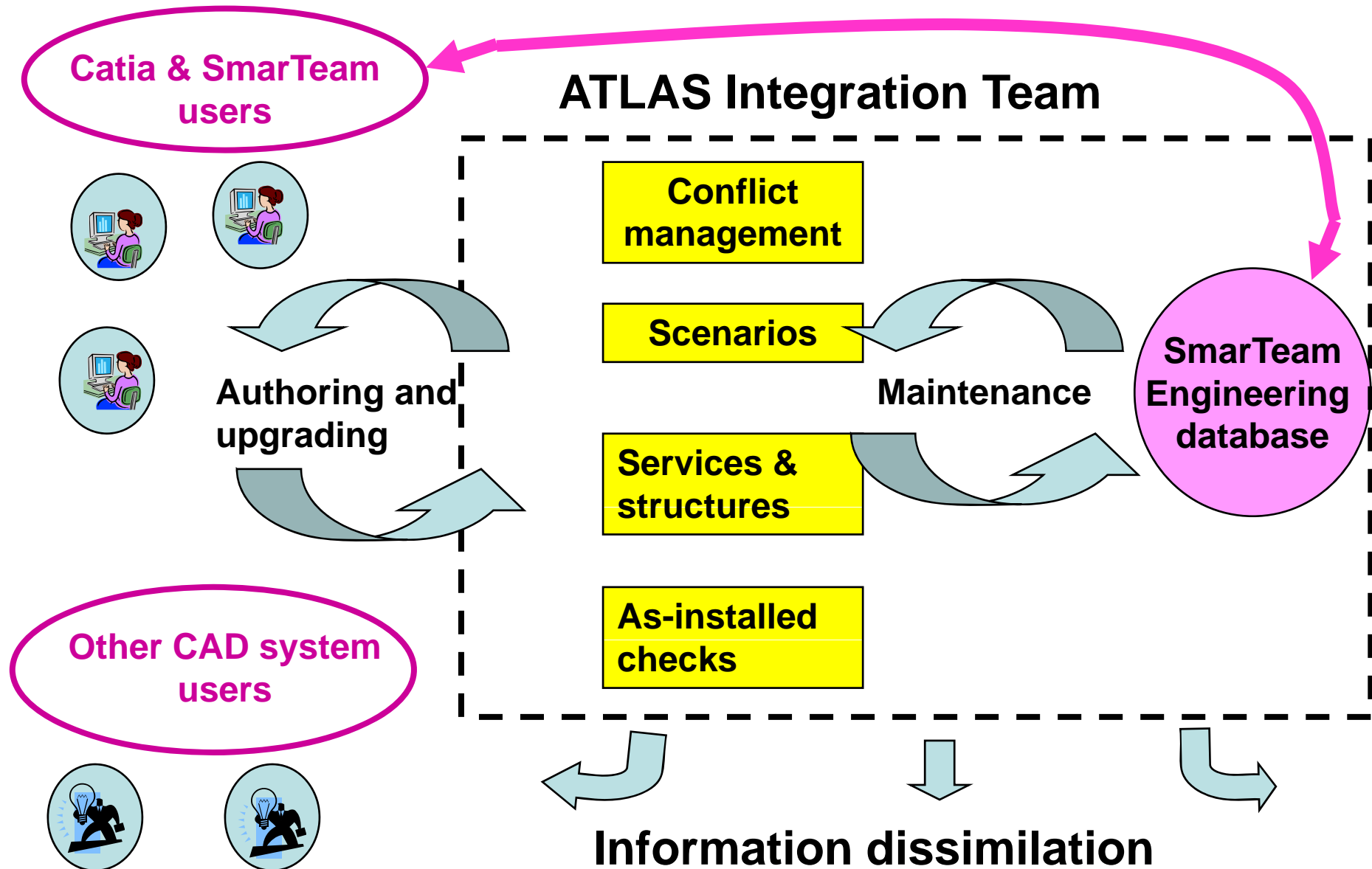
Catia Migrated  
OLD Part: Layout Barrel LS-Strawman07.1

**Reason for Publication**

**EDMS URL** \_\_\_\_\_

**Responsible** Christophe - Bault 03/27/2008 14:12

# Exchange with external designers

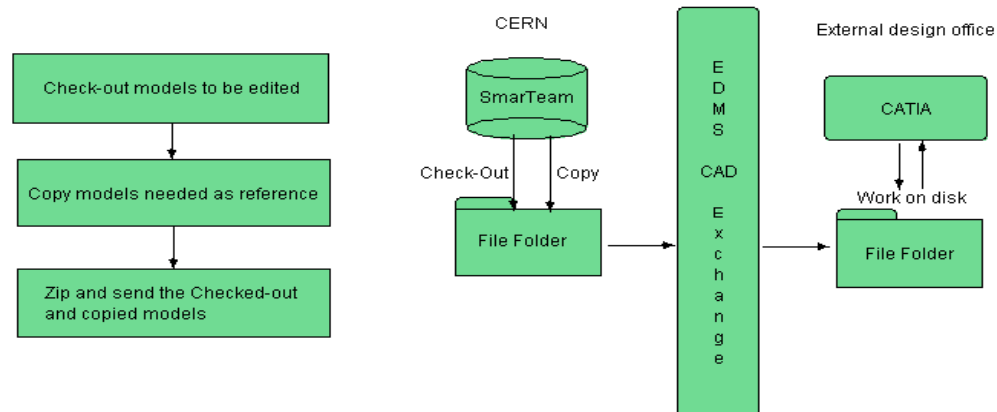


# Exchange with external designers

How to send and receive models stored in Smarteam with external design office?

## Selecting and Sending the documents

Overview of Procedure:



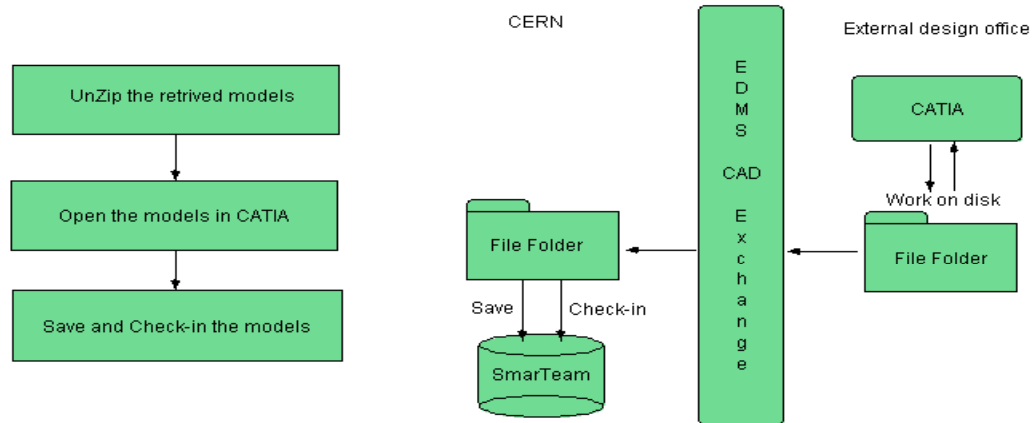
1. Create a new document in EDMS CAD exchange for the exchange, note the EDMS document number. EDMS CAD exchange: <http://edms.cern.ch/nav/CERN-0000006727>
2. Create a file folder for the exchange with the EDMS document number in it.
3. Login to Smarteam as owner of the documents and transfer the responsibility to the external design office for the models they will edit.
4. Login to [SmarTeam](#) as the external design office.
5. Create a user project for the exchange with the name on the EDMS document number.
6. Create a *compressed (zipped) folder* of the folder for the exchange.
7. Make a list of objects with the corresponding filename.
8. Upload the *compressed (zipped) folder* to the EDMS document of the exchange.
9. Perform an 'Engineering-Check' on the document when all desired files are uploaded.



# Exchange with external designers

## Re-integrating the documents in [SmarTeam](#)

### Overview of Procedure:



1. Retrieve the models from the external design office via an EDMS document in EDMS CAD exchange.
2. Place the new and updated files in the folder used for the exchange.
3. Make sure that the *SMARTTEAM-FileCatalog* folder is intact, or restore it from the EDMS document used to send the documents. \* This is a system folder only needed for the re-integration of the files to [SmarTeam](#).
4. Login to [SmarTeam](#) as the external design office.
5. Open the New and modified documents in CATIA.
  - o If there are modified files that are Read-only, check the modifications and resolve the problem is needed.
6. Save and Check-In the models.

This procedure described on CAD support web page includes 15 manual operations and works only when external design office use the same version of Catia & Smarteam ( 2 out of 3 groups participating in Atlas upgrade using Catia have different versions, 17 and 18)

# **CONCLUSIONS : first proposals for possible improvements**

- 1. Additional possibilities of SEARCH functionality: “geographic” search with graphic interface**
- 2. Methodology of work common for all designers**
- 3. Possibility of custom attribute creation**
- 4. Additional possibilities for external design offices to find, visualize and retrieve 3D models in different formats: Web interface .**