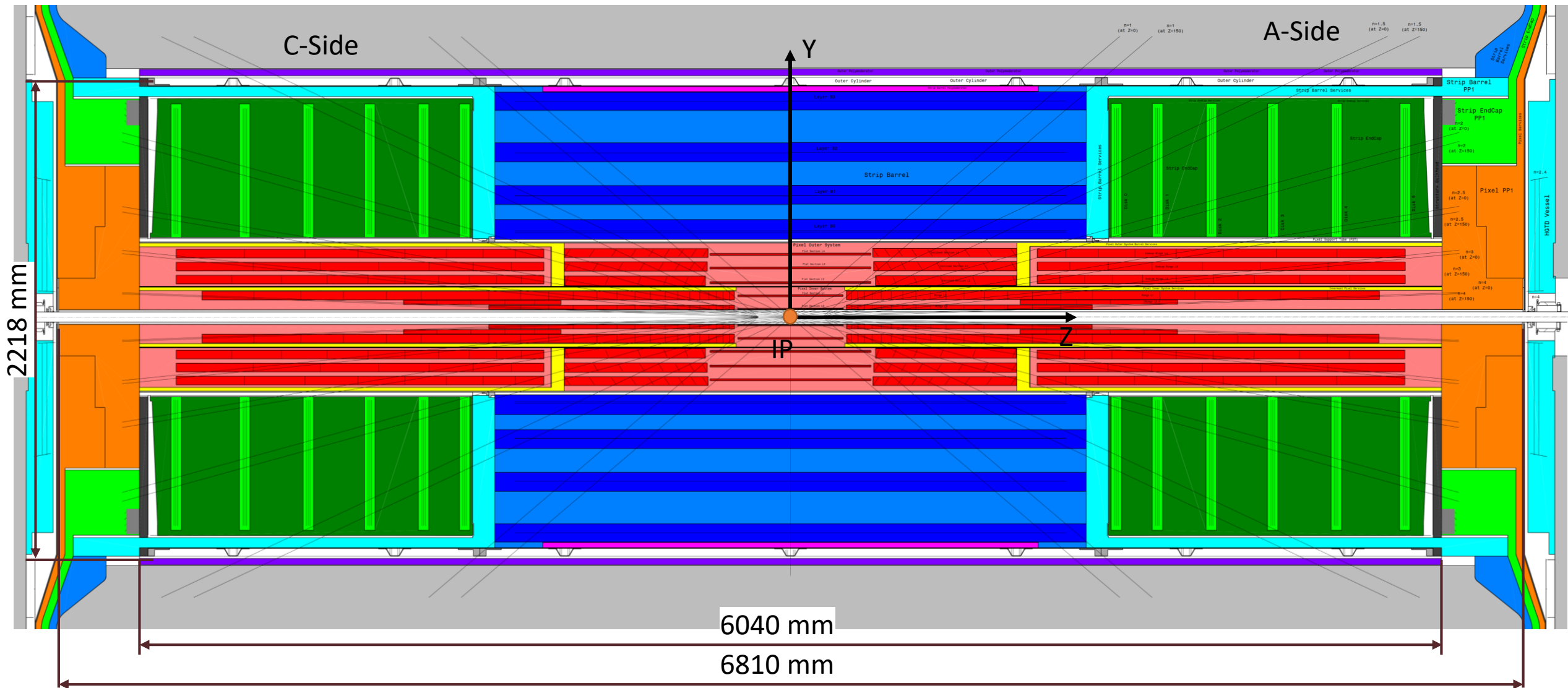


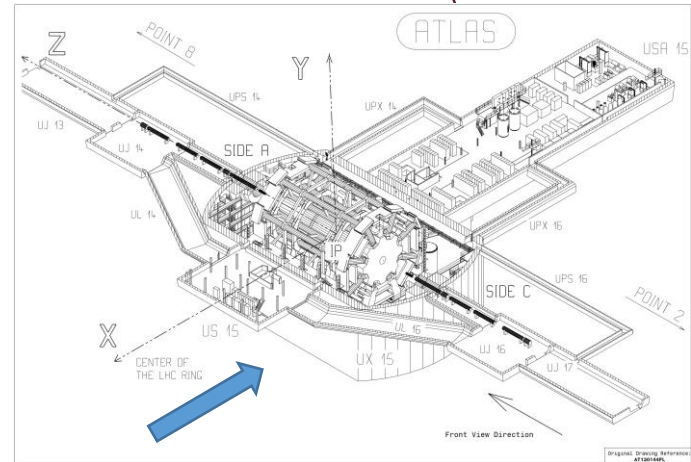
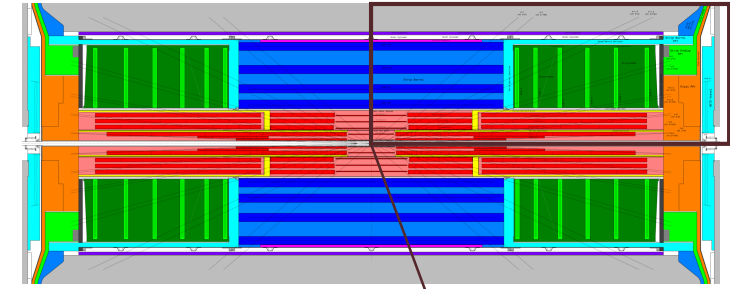
ITk CATIA Geometry - Structure, Components, Smarteam Folders

Martin Janda (Czech Technical University in Prague (CZ))

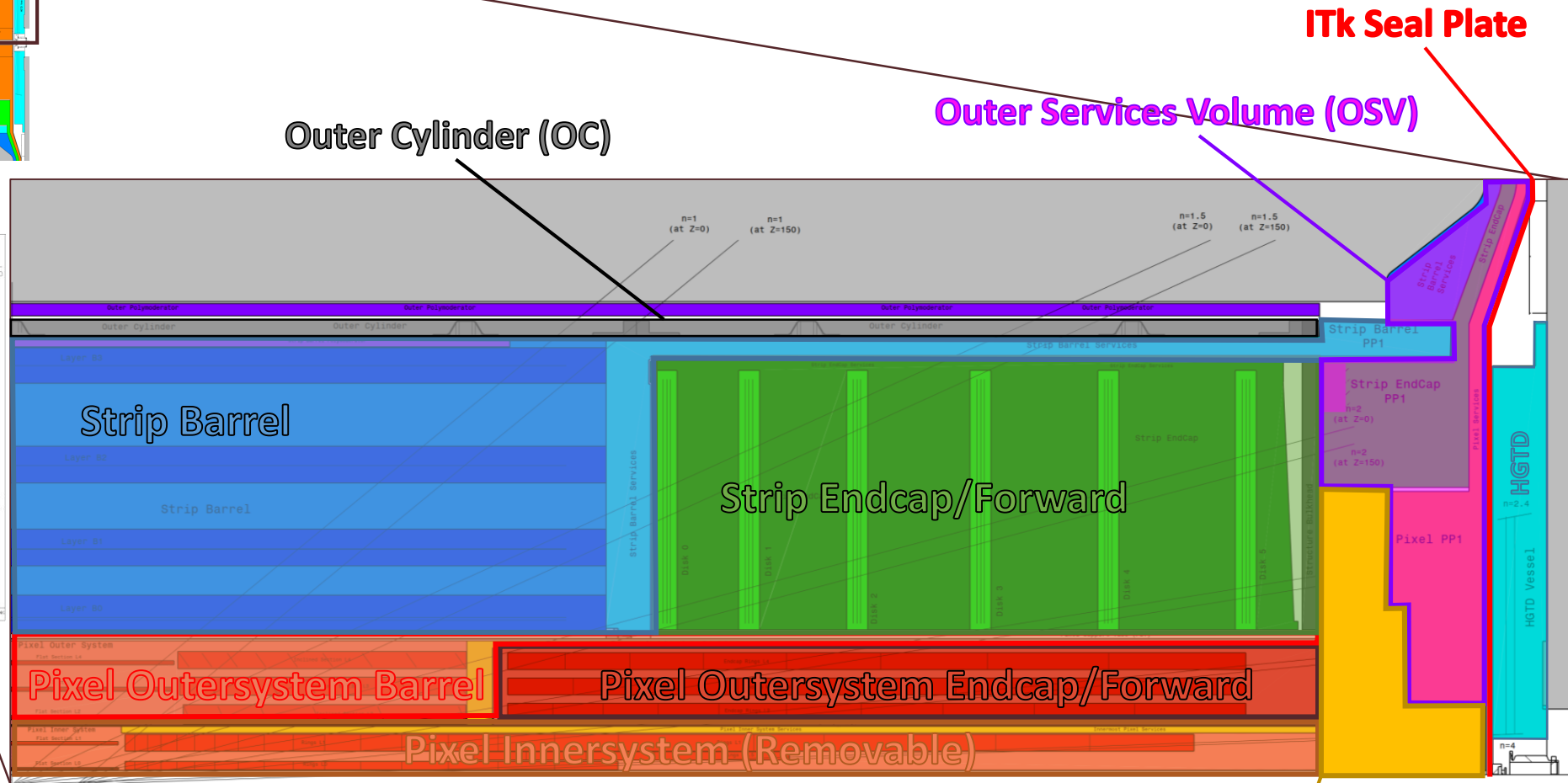
ITk Overview – Full Detector



ITk Overview – ¼ of Detector



View Direction



Pixel Patch Panel 1

ITk Seal Plate

Outer Services Volume (OSV)

Outer Cylinder (OC)

Strip Barrel

Strip Endcap/Forward

Pixel Outersystem Barrel

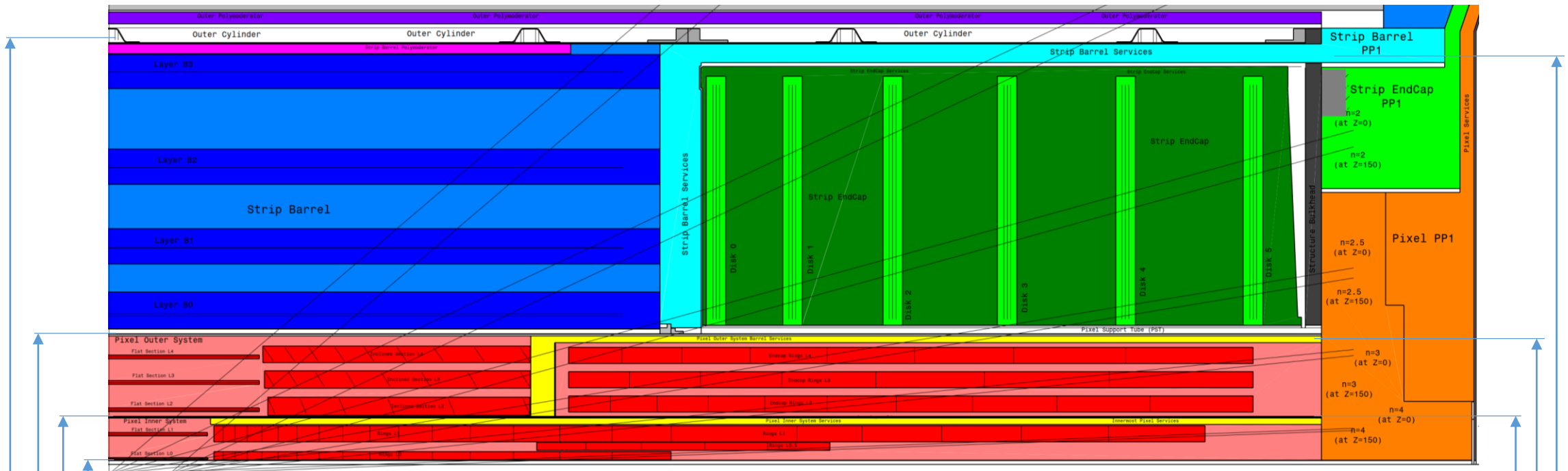
Pixel Outersystem Endcap/Forward

Pixel Innersystem (Removable)

HGTD

HGTD Vessel

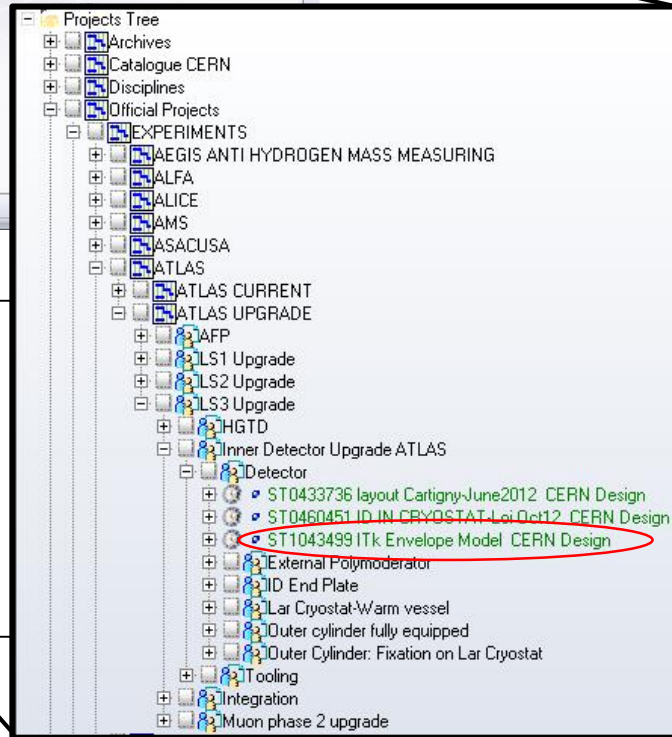
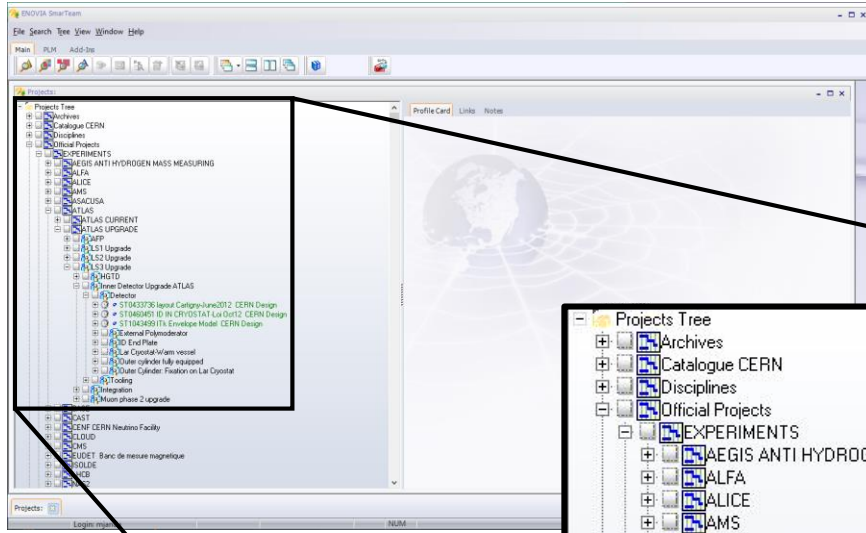
ITk Overview – ¼ of Detector



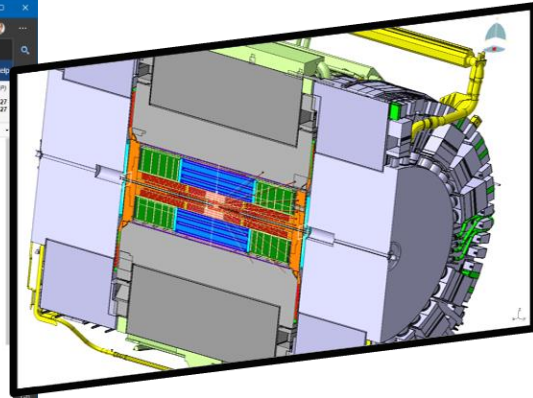
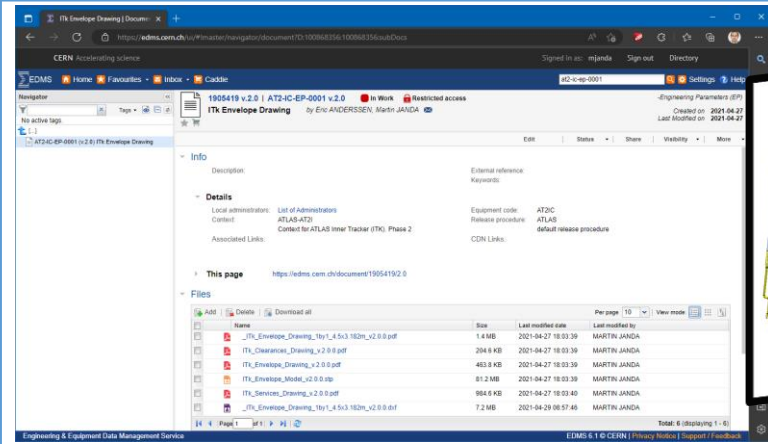
- R33 – R35 -> Inner Pixel Tube (IPT)
- R141 – R144 -> Inner Support Tube (IST)
- R346.7 – R363.45 -> Pixel Support Tube (PST)
- R1069 – R1109 -> Outer Cylinder (OC)
- R123 – R139 -> Innersystem Services
- R327 – R343.7 -> Outer Barrel Services
- R1023 – R1109 -> Strip Barrel Services

Envelope Drawing – SmarTeam + EDMS

SmarTeam number – ST1043499



Official Projects
 |->EXPERIMENTS
 |->ATLAS
 |->ATLAS UPGRADE
 |->LS3 Upgrade
 |->Inner Detector Upgrade ATLAS
 |->Detector

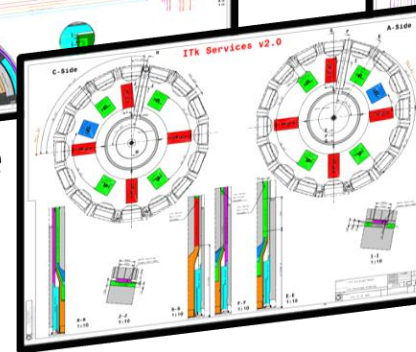


3D Model

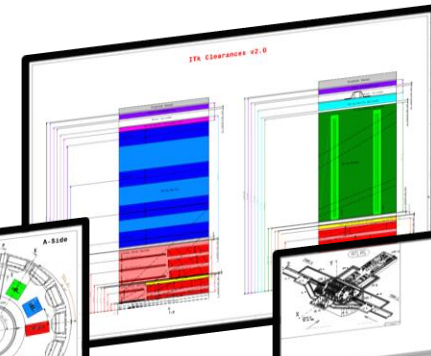
<https://edms.cern.ch/document/1905419/2.0>



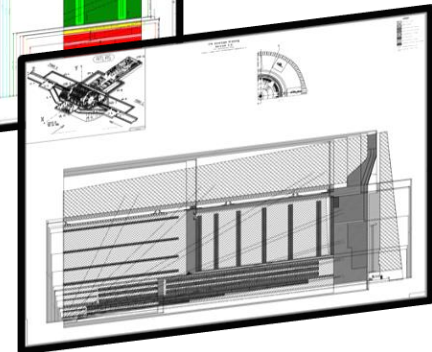
Envelope DWG



Services DWG



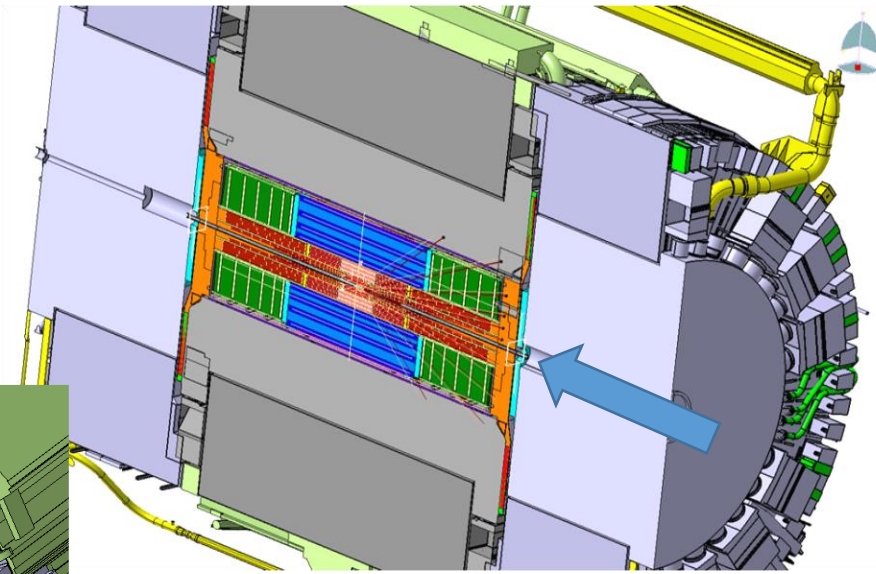
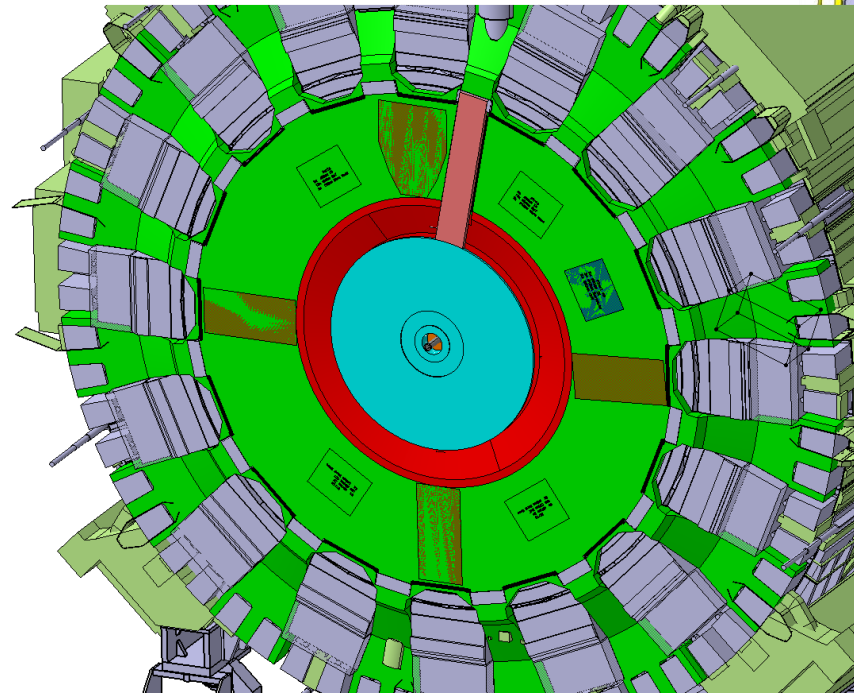
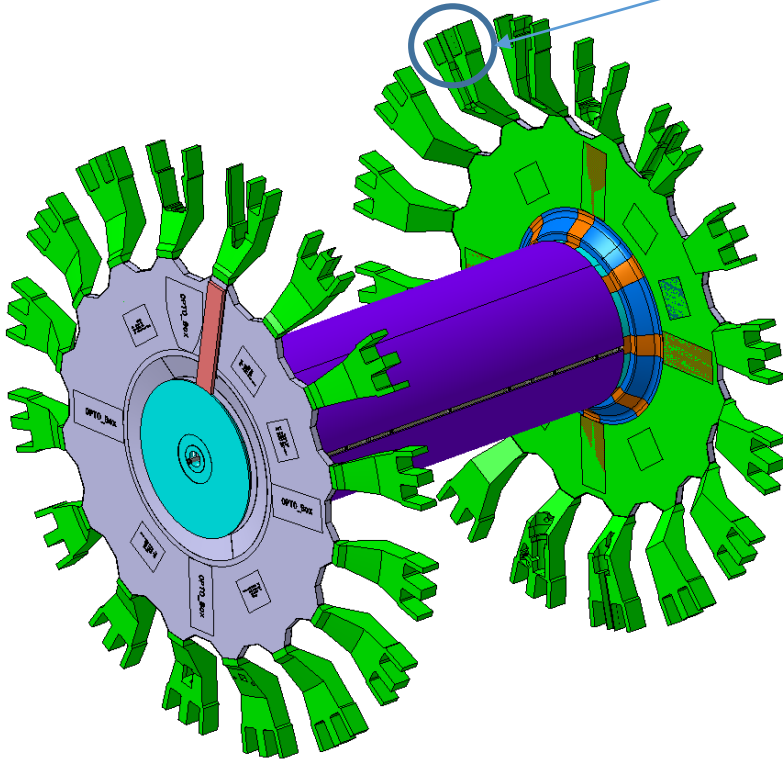
Clearances DWG



1:1 Envelope Drawing

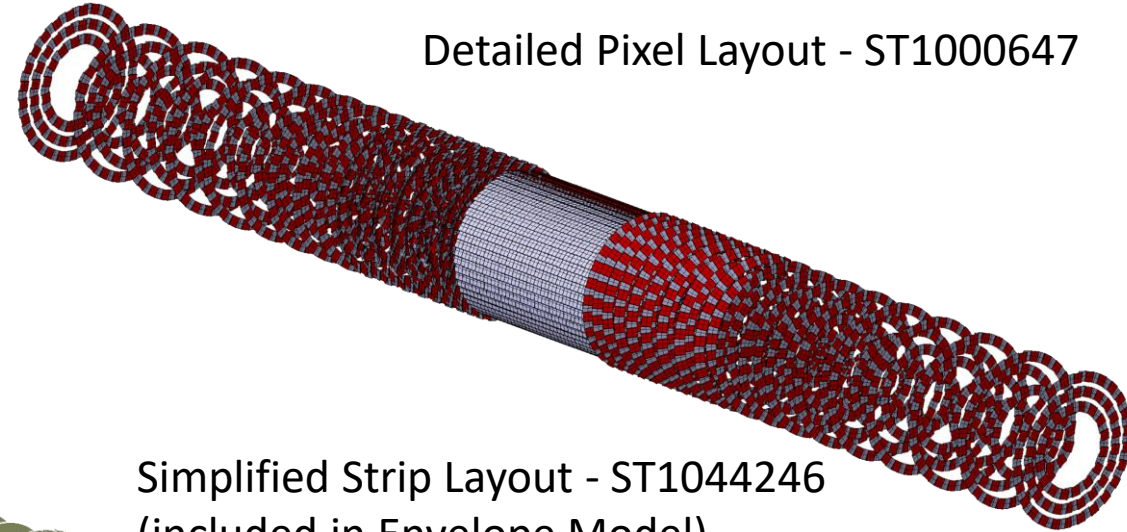
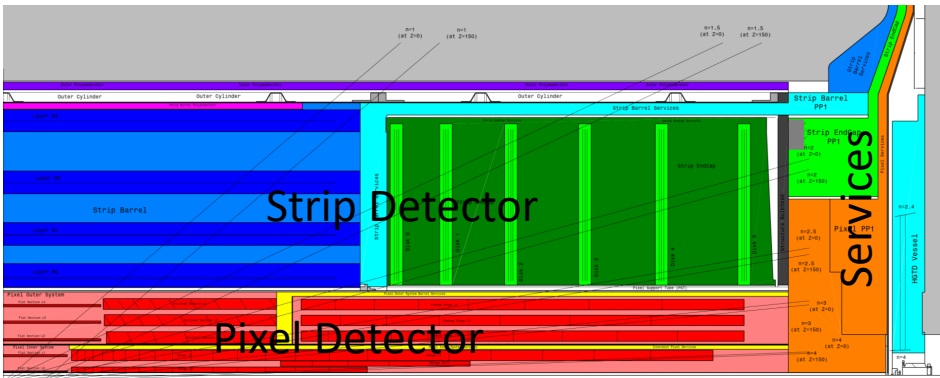
Envelope 3D Model

- SmarTeam number – ST1043499
- The green volumes represent ENVELOPES of Outer Services Volume up to Tile Finger Gaps.

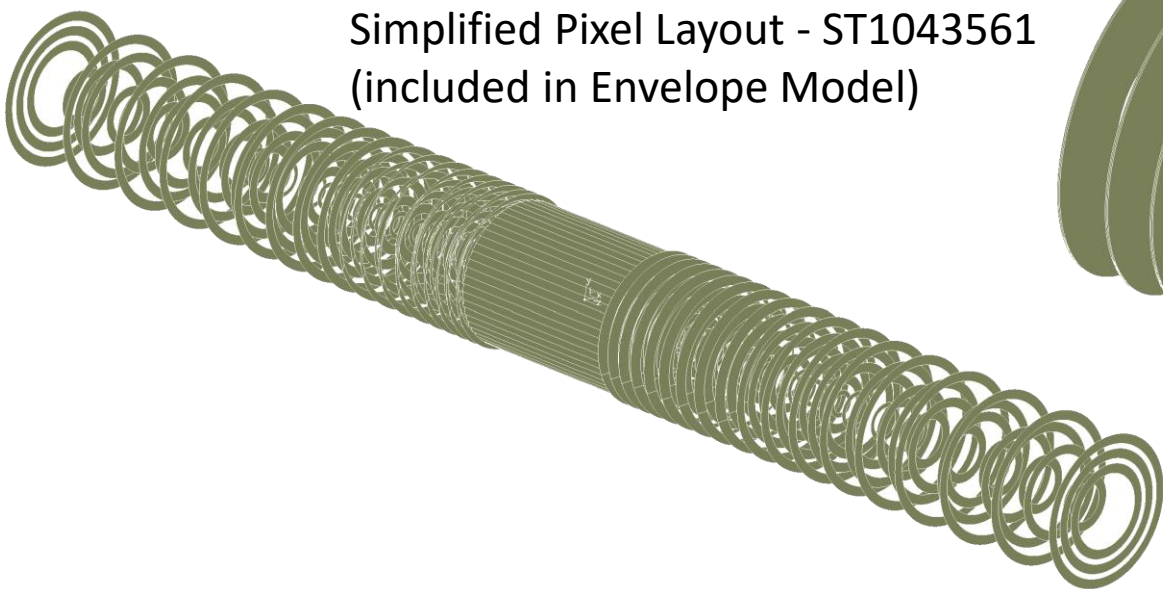


View Direction

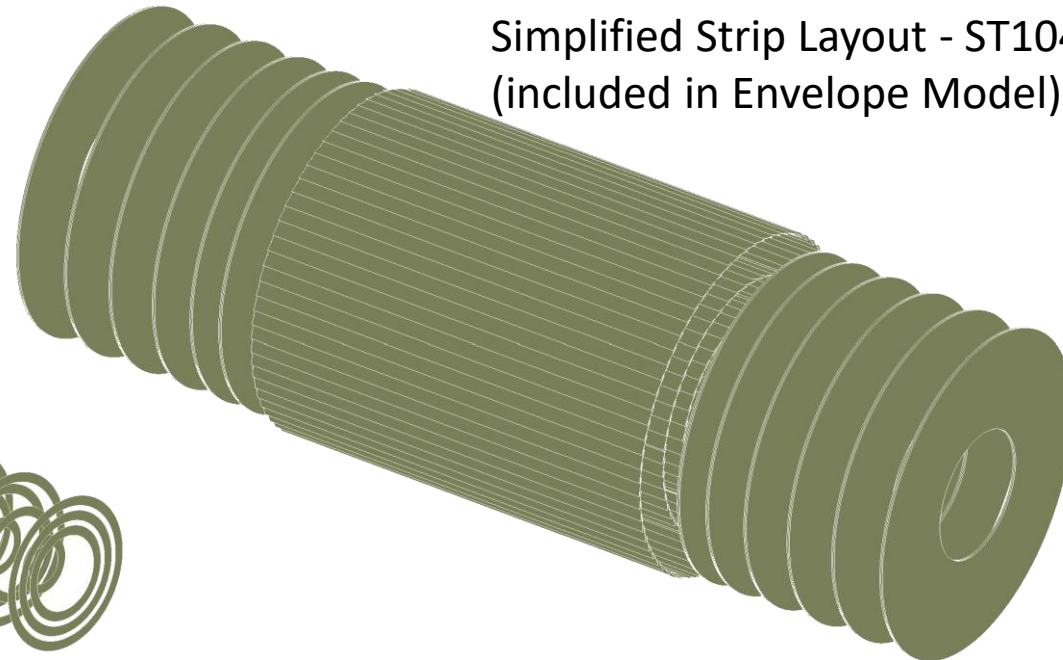
Geometry Available in SmarTeam



Detailed Pixel Layout - ST1000647

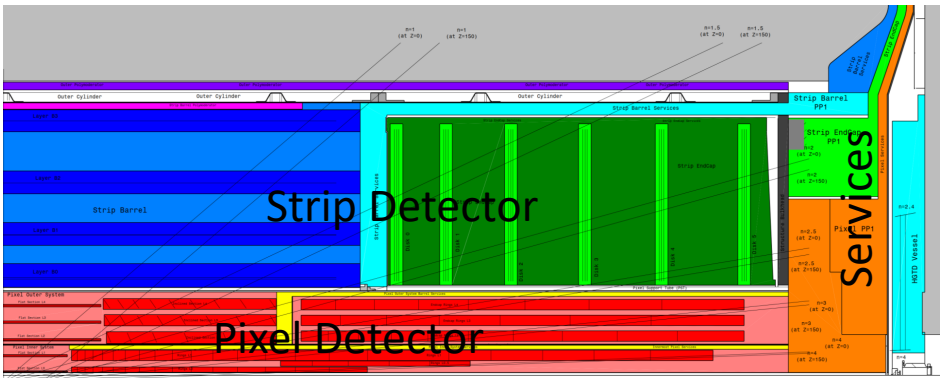


Simplified Pixel Layout - ST1043561
(included in Envelope Model)



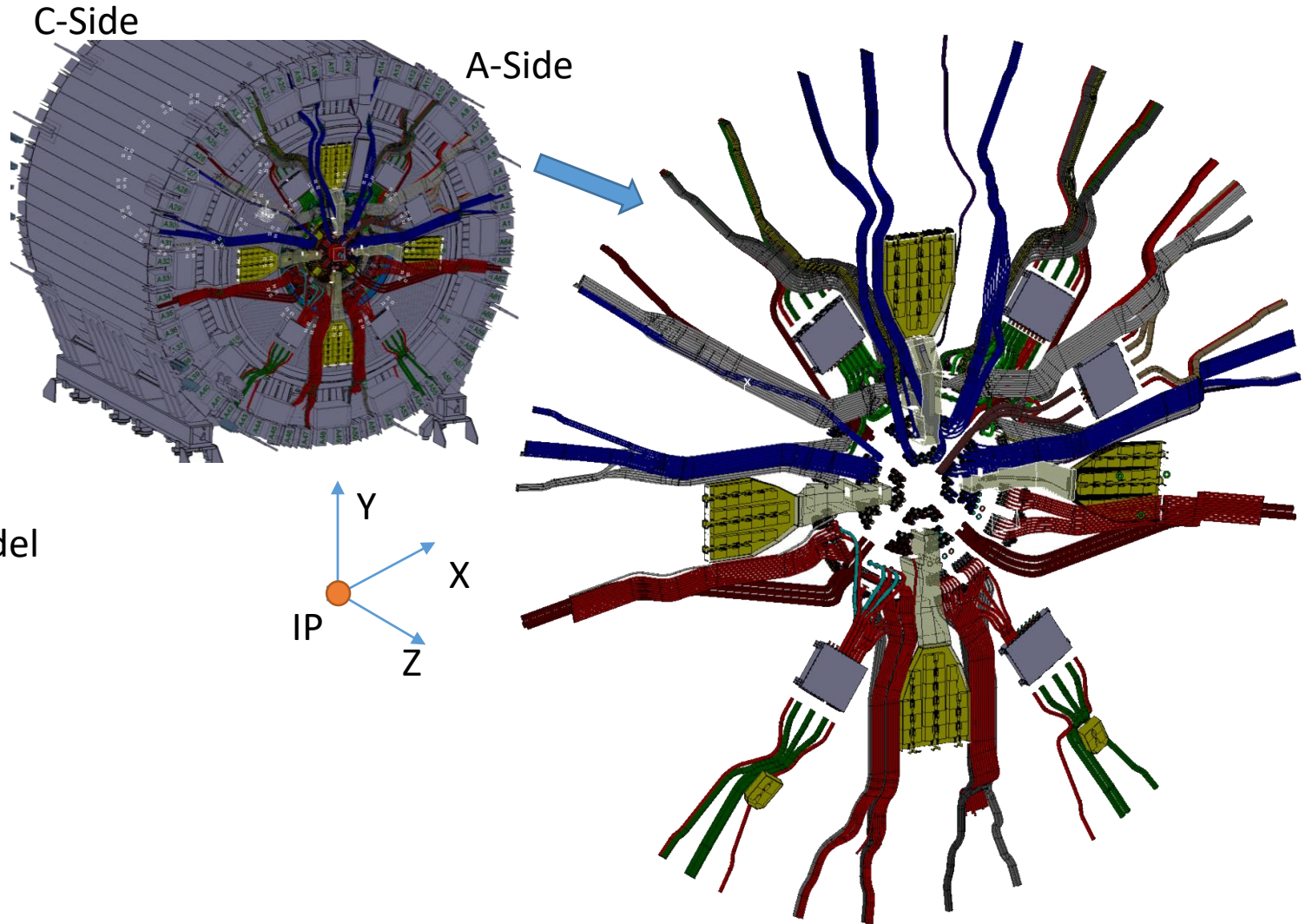
Simplified Strip Layout - ST1044246
(included in Envelope Model)

Geometry Available in SmarTeam

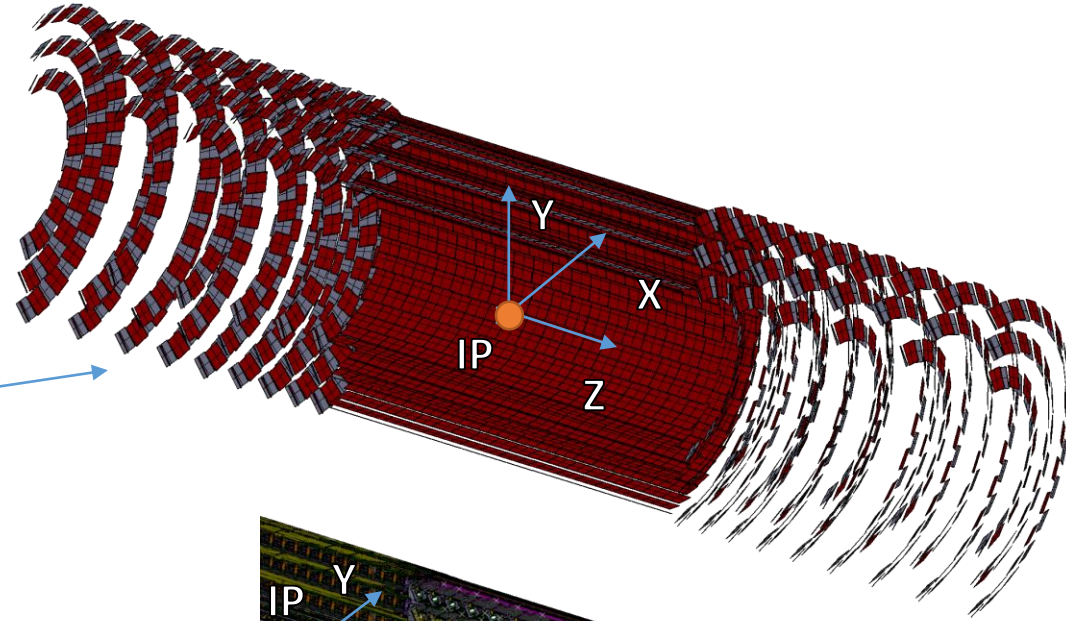
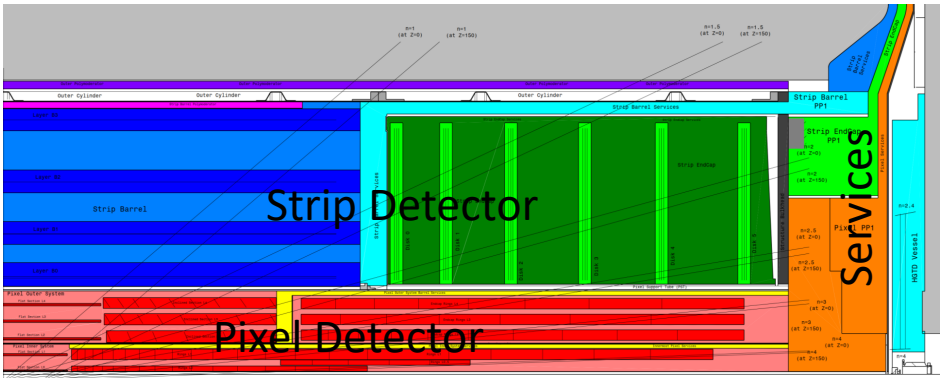


Outer Services Volume - ST0984385

- *Contact Person – Martin Janda*
- Live data – model is changing
- Approx.. 80% of services available in the model
- Model of services on A side only – C Side is mirrored WRT XY plane



Geometry Available in SmarTeam

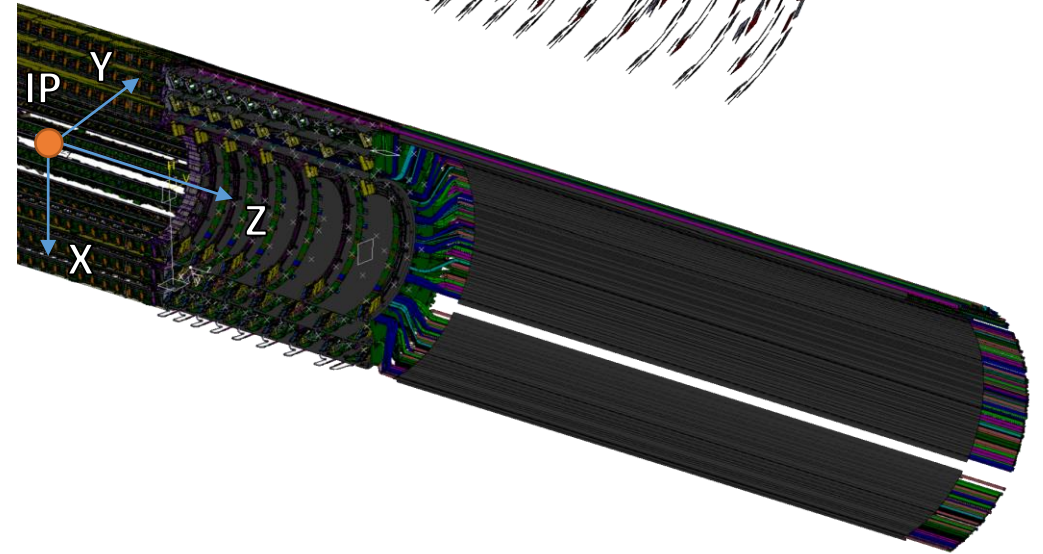


Pixel Outer Barrel – ST????????

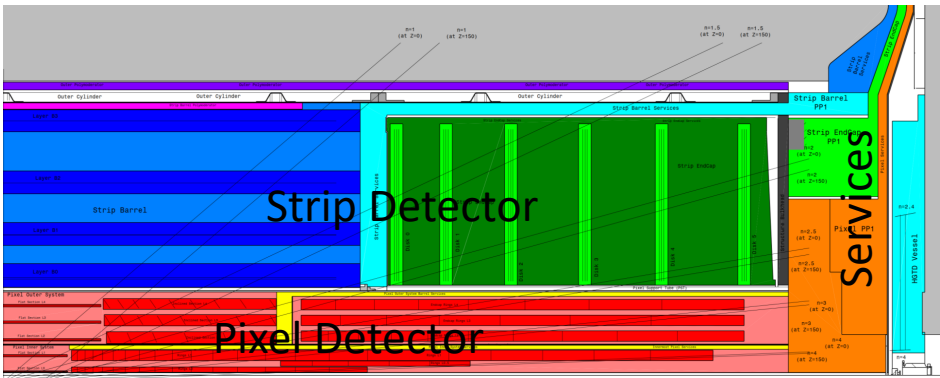
- Contact Person – Diego Alvarez Feito (CERN)

Pixel Outer Barrel Services – ST1238454

- Contact Person – Diego Alvarez Feito (CERN)

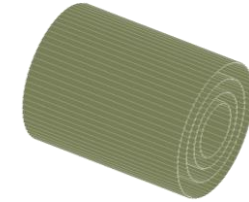


Geometry NOT Available in SmarTeam



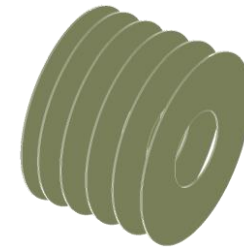
Strip Barrel

- Contact Person – Ian Wilmut (RAL)



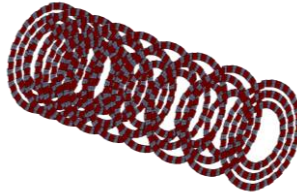
Strip Endcap + OC Bulkhead

- Contact Person – Marcel Vreeswijk (Nikhef)



Pixel Outersystem Endcap

- Contact Person – Jo Pater



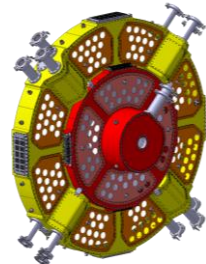
Pixel Innersystem

- Contact Person – Neal David Hartman (CERN)



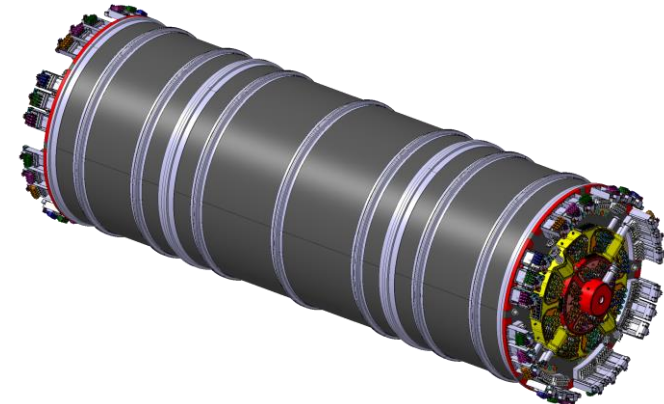
Pixel PP1

- Contact Person – Sandro Tomassini (INFN Frascati)
- Simplified model available - ST1308460



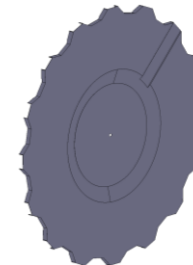
Outer Cylinder

- Contact Person – Eric Anderssen (Berkeley LBNL)
- Simplified model available – ST0948551

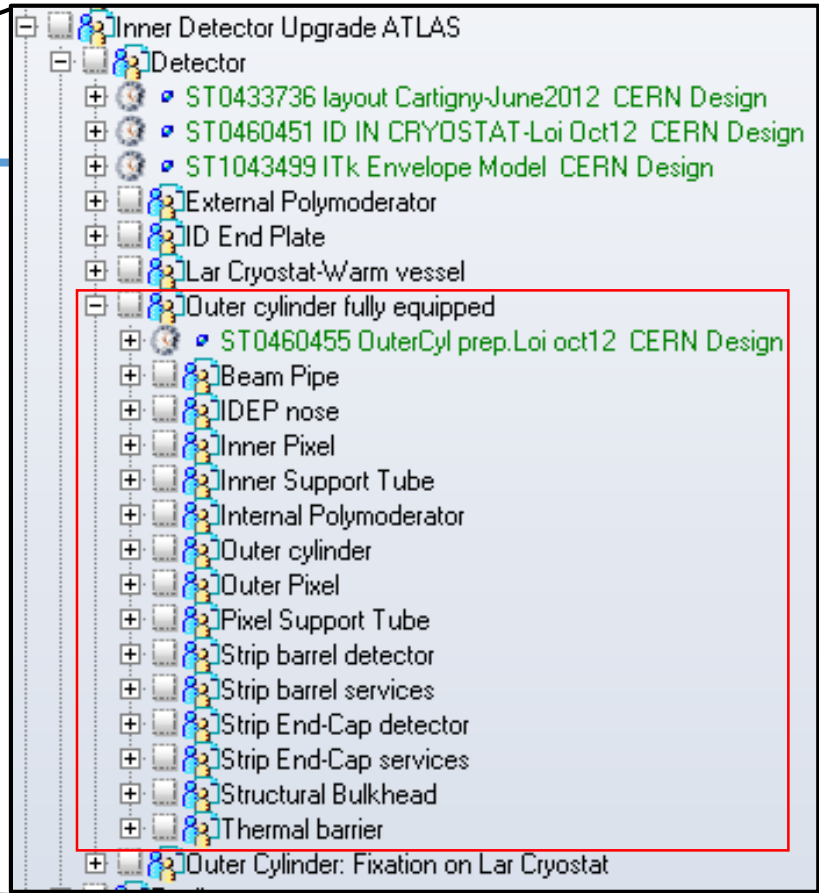
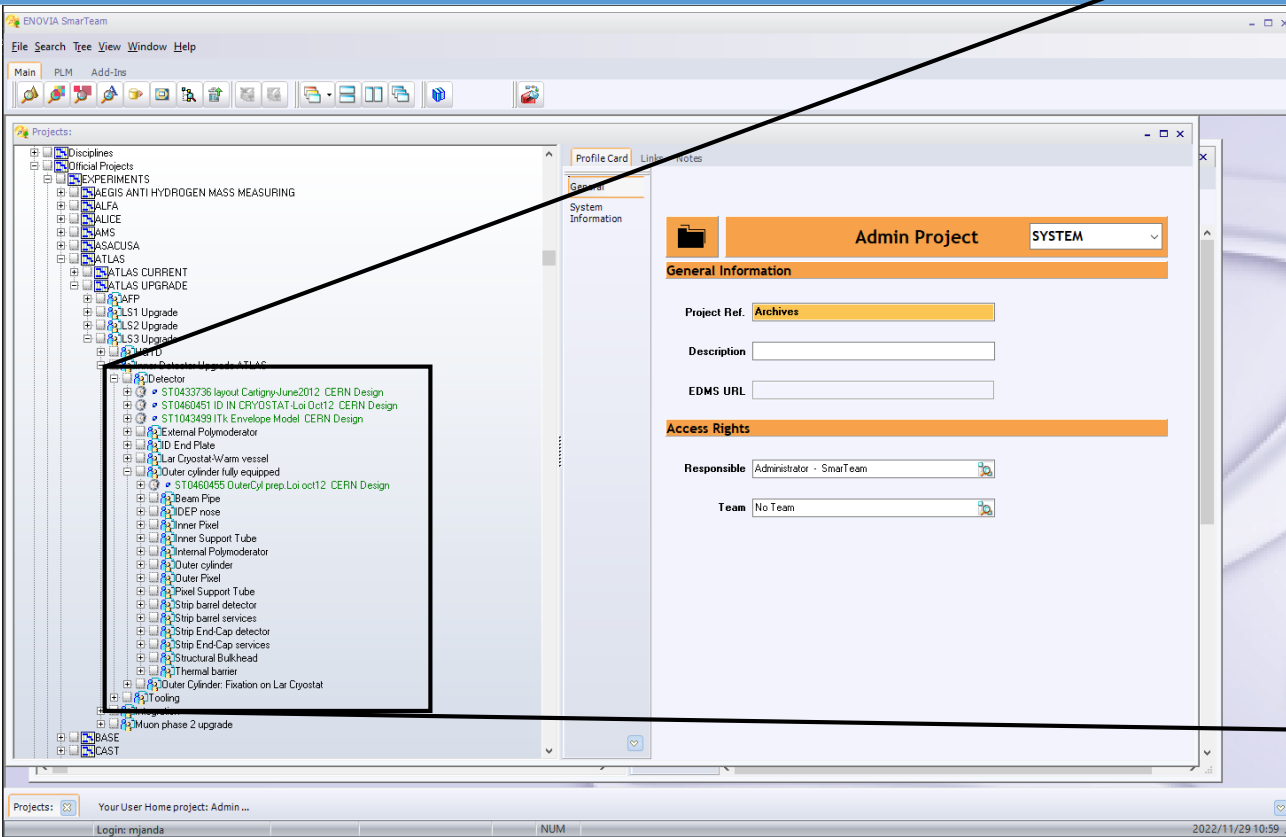


Itk Seal Plate

- Project not yet assigned



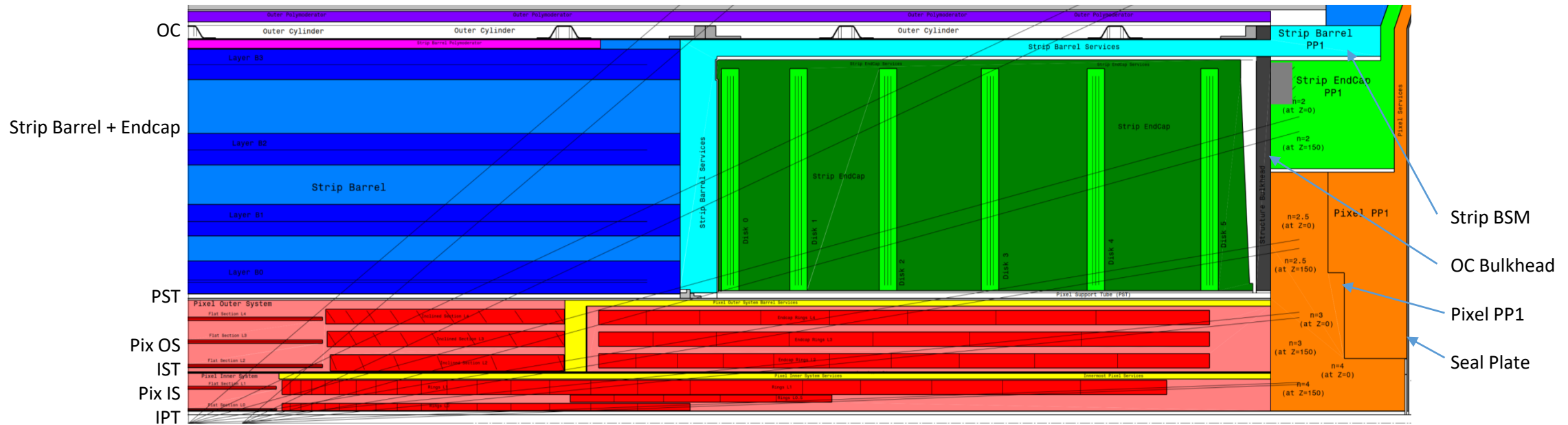
SmarTeam Folders



- Official Projects
- |->EXPERIMENTS
- |->ATLAS
- |->ATLAS UPGRADE
- |->LS3 Upgrade
- |->Inner Detector Upgrade ATLAS
- |->Detector
- |->Outer cylinder fully equipped

Folders available for ITk subsystems in Official SmarTeam folder – only simple envelope models available at the moment.

ITk Mechanics General Comments



- Pixel Supports (Staves and Rings) – Carbon Fibers
- Strip Supports (Staves and Rings) – Carbon Fibers
- IPT, IST, PST, OC, Strip Barrel Support Shells, OC Bulkhead – Carbon Fibers with Titanium inserts
- Strip Barrel Services Modules (BSM) - Aluminium
- Pixel PP1 – Aluminium
- ITk Seal Plate – Carbon Fibers
- Cooling Pipes – Titanium and Stainless Steel (in OSV)

Backup slides