# CATIA FORUM

# RECONSTRUCTION OF OPTICAL FIBERS ENVELOPE FROM ATLAS 3D SCAN

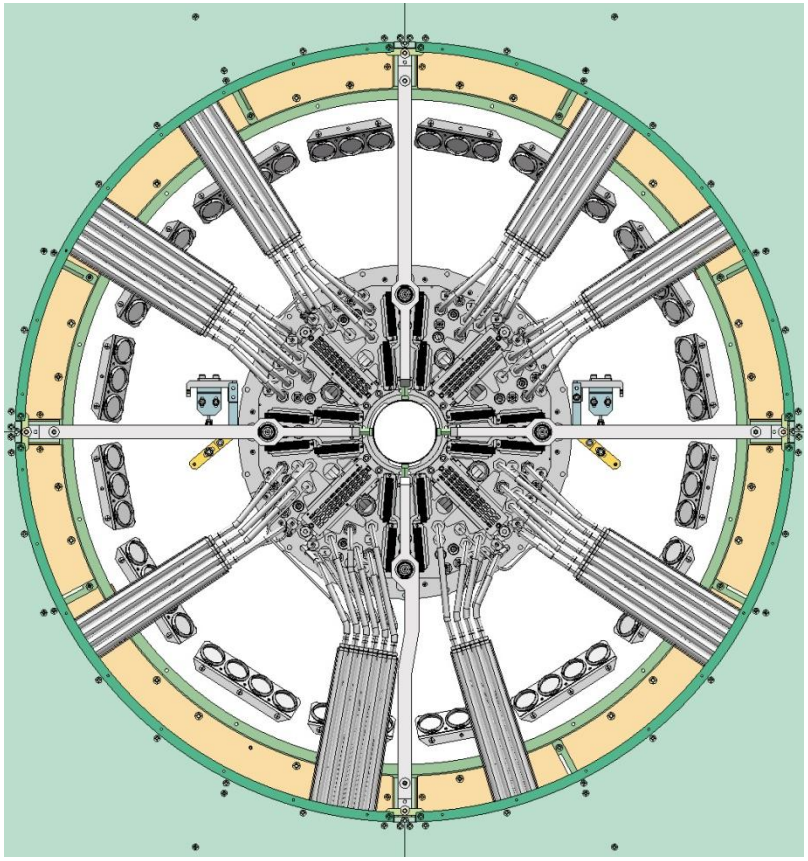
Sébastien MICHAL

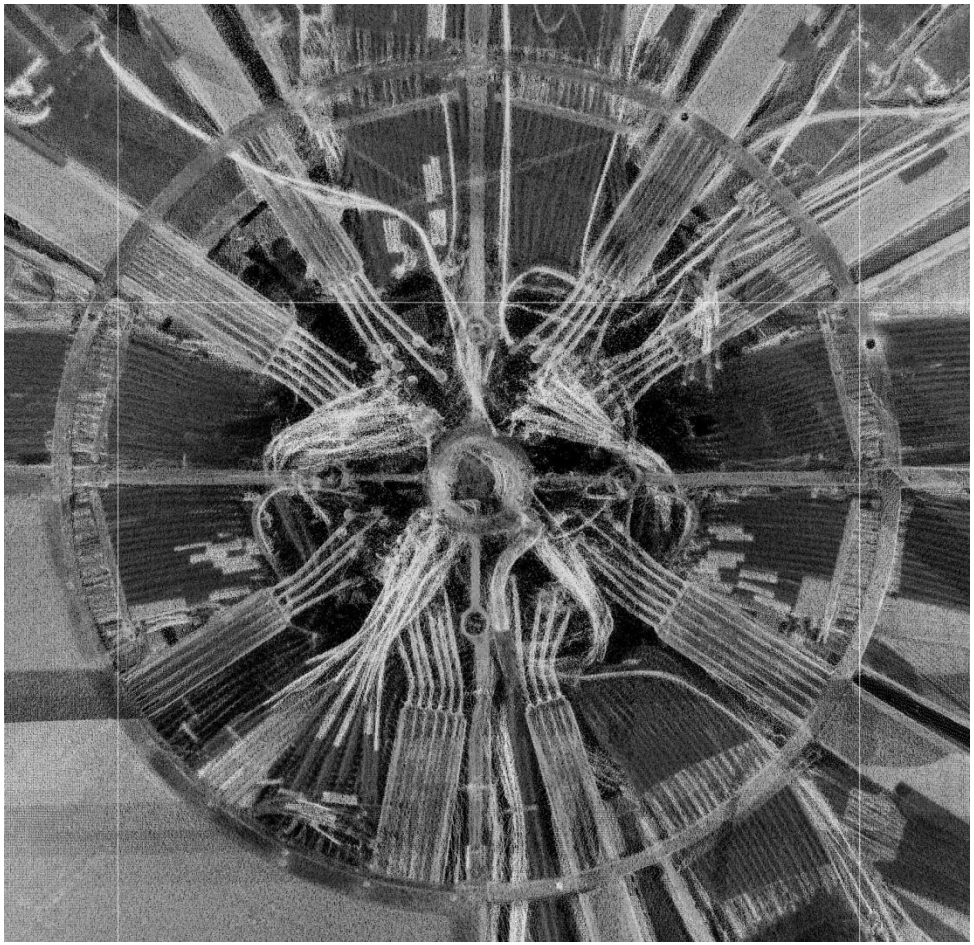
June 17th 2010

ATLAS project

# ATLAS PP1 area

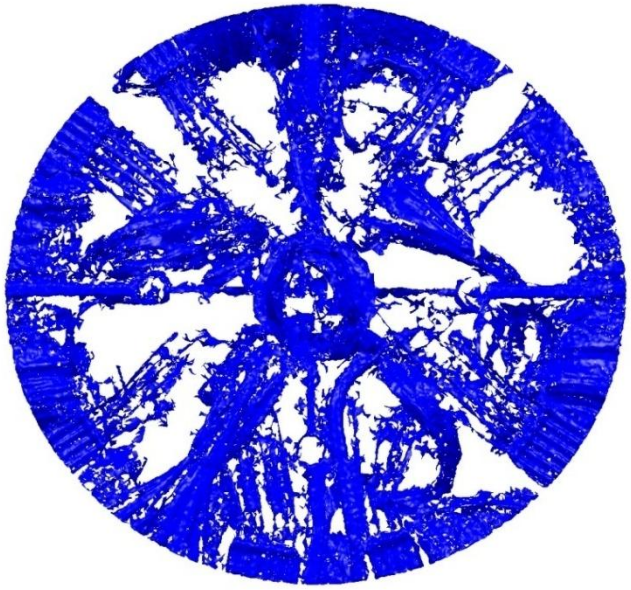
- ATLAS 3D model without cables and OF

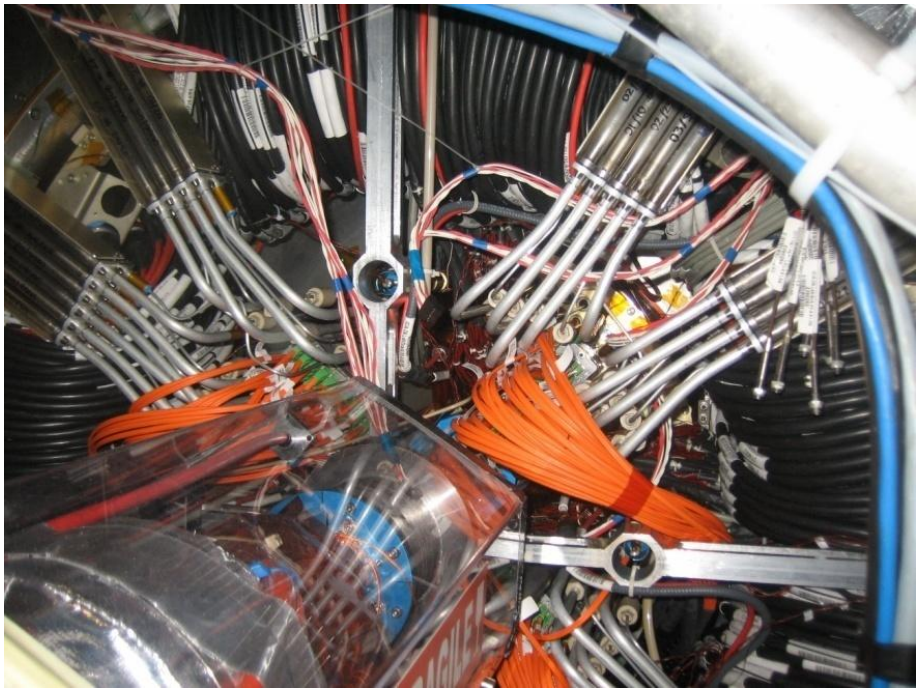




# ATLAS PP1 area

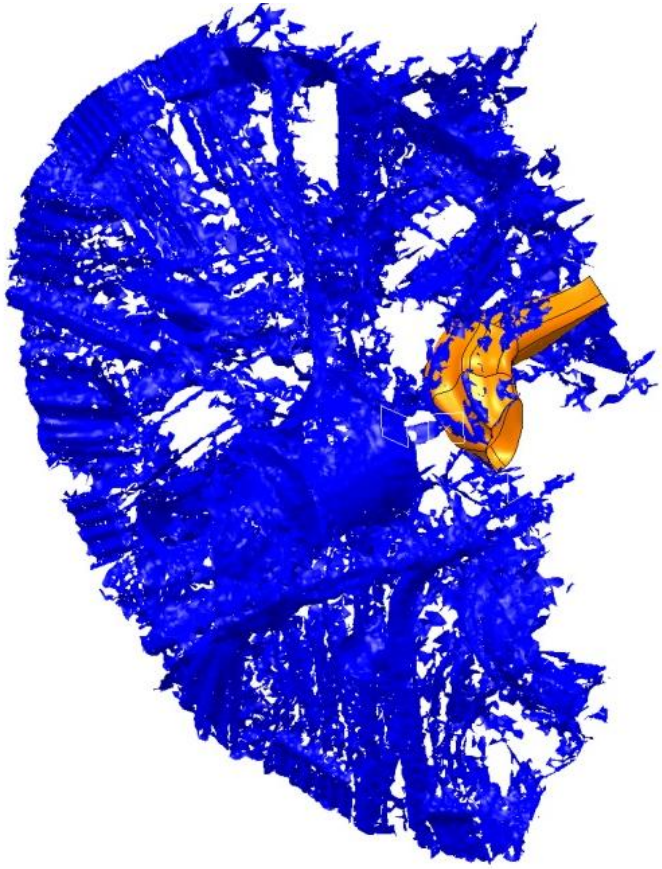
- Need of existing services envelopes for routing of ATLAS upgrade services (3D scan to heavy to work with)
- Informations available: - Pictures
  - 3D scan (points and surfaces pretreated before CAD integration)





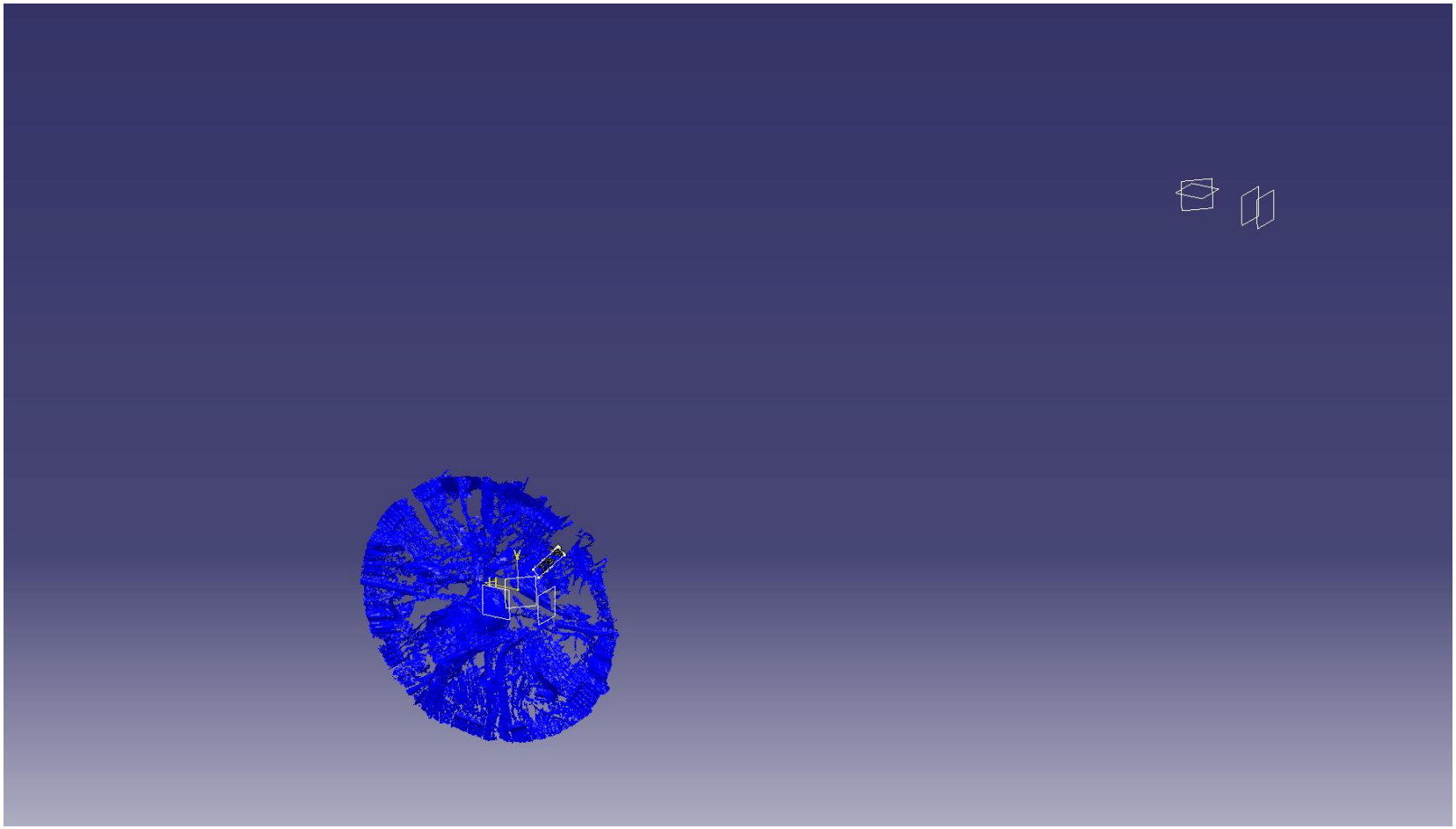
# Methodology

- Create planes to make section/sketch on scan
- Create sketch (spline) following scan limits
- Create 3D curves btw 2 sketches
- Create multisection solid

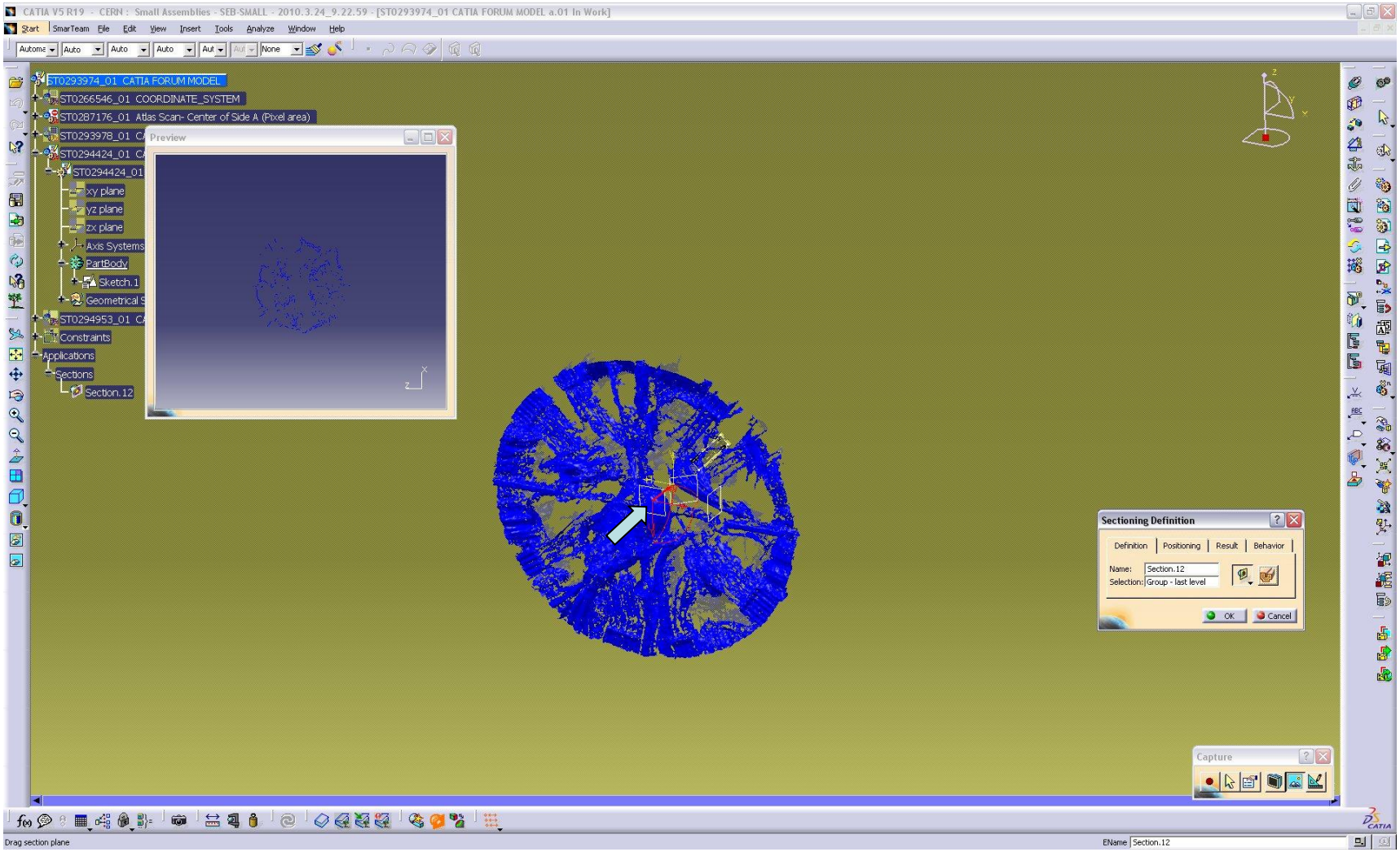


# Planes

- Create planes to support sketches and 3D sectioning

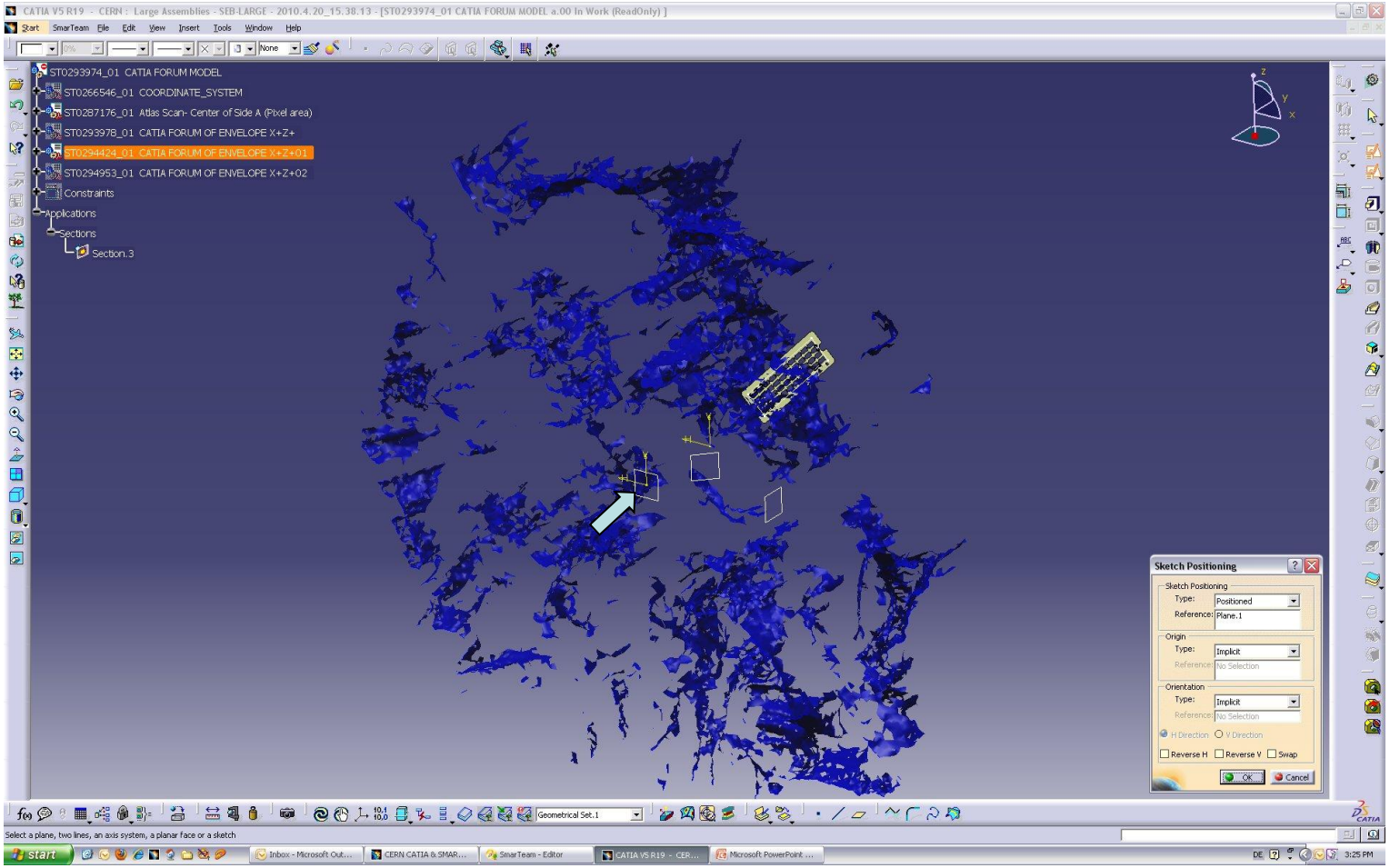


# 3D sectioning

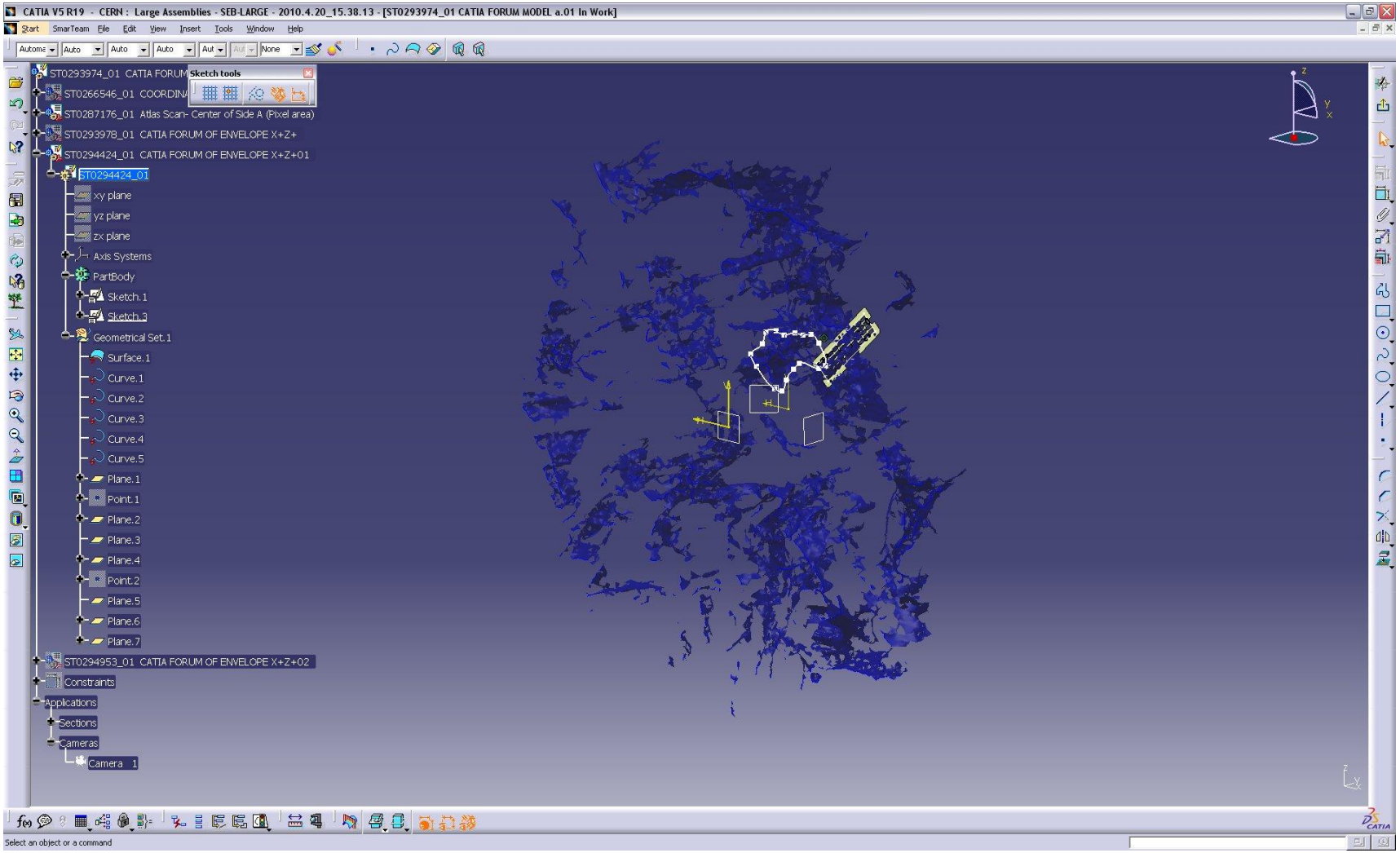


# Sketch

- Same plane as previous 3D sectioning



# Spline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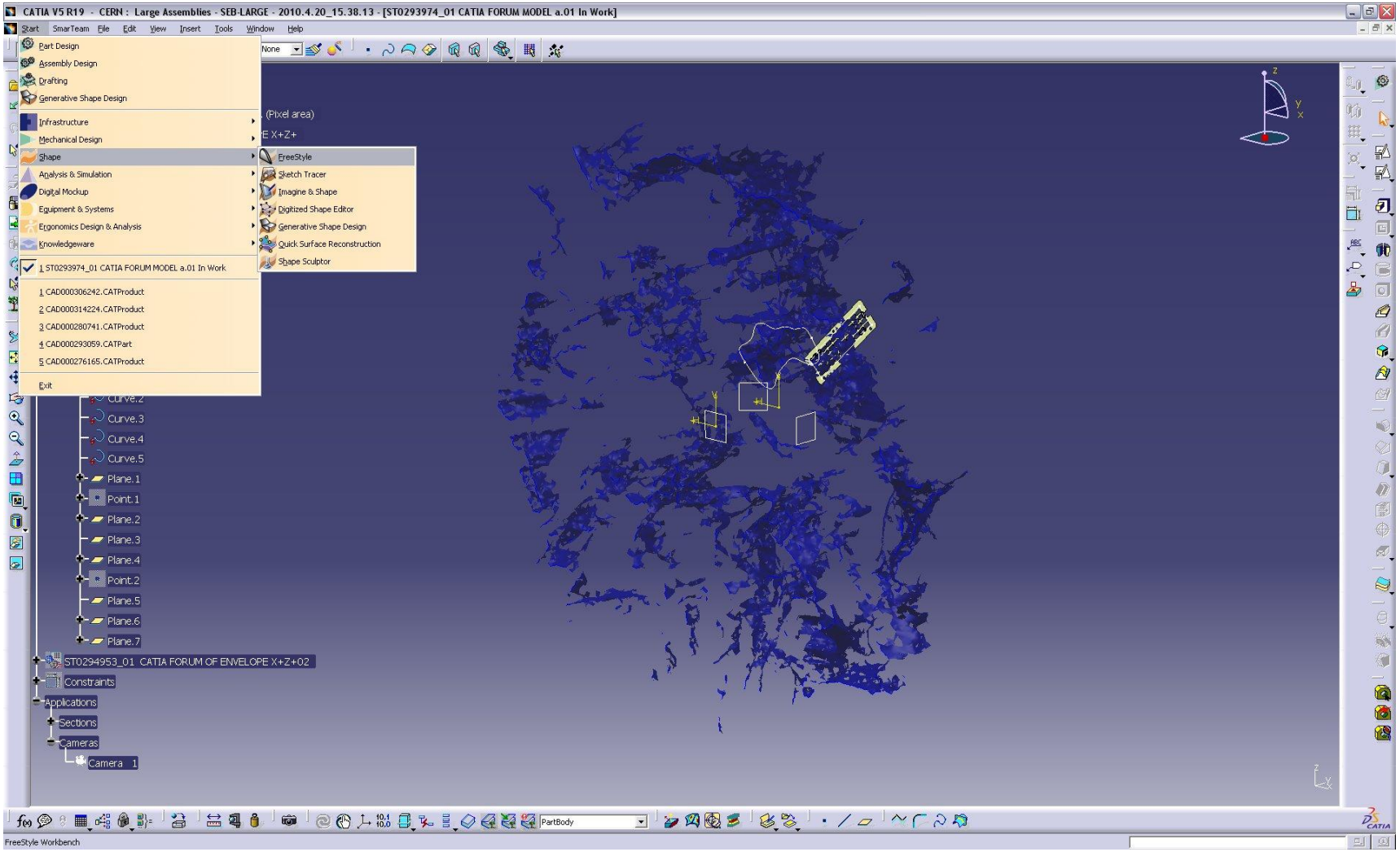
# 3D curve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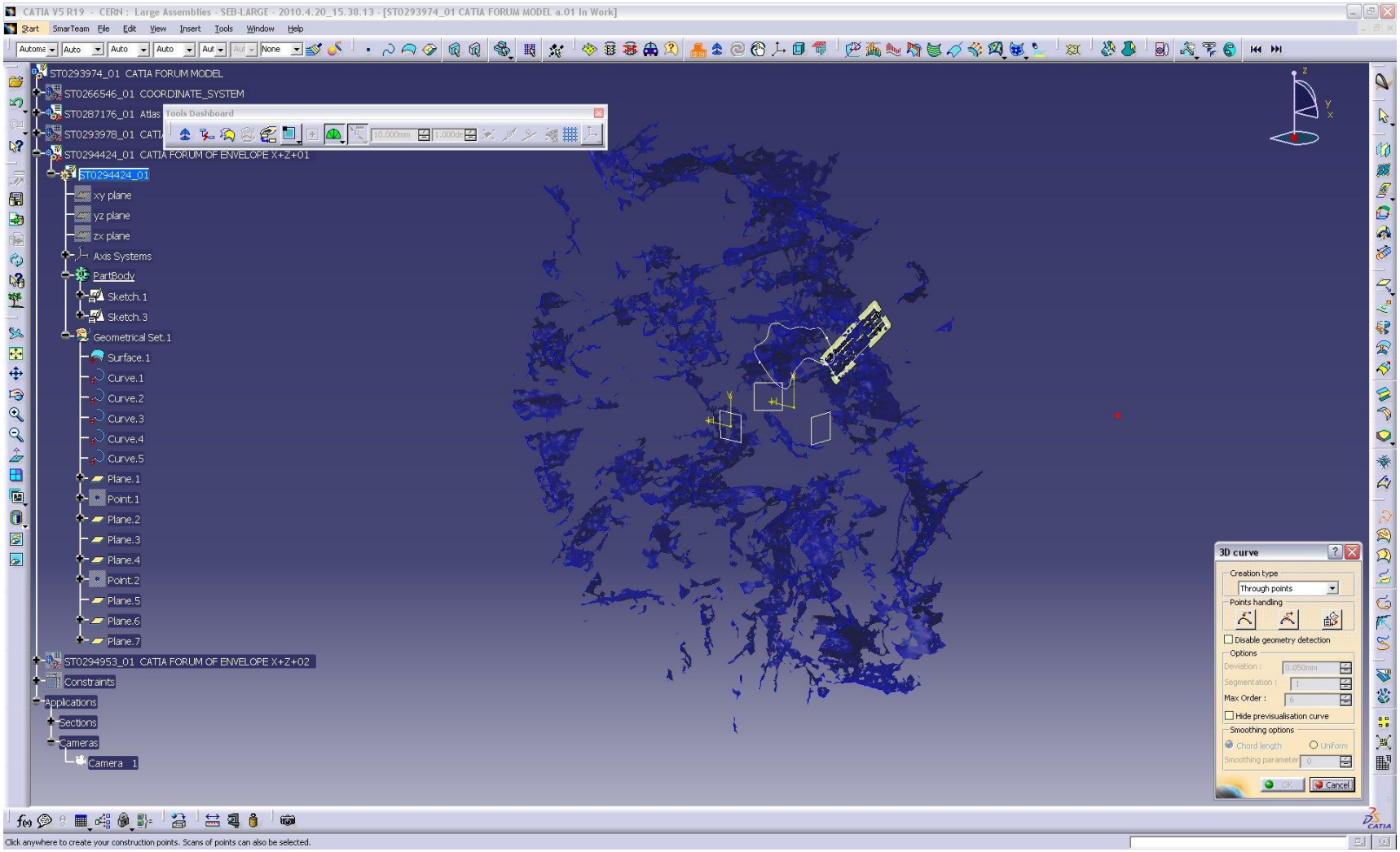
# 3D curve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Disable geometry detection
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Max Order :
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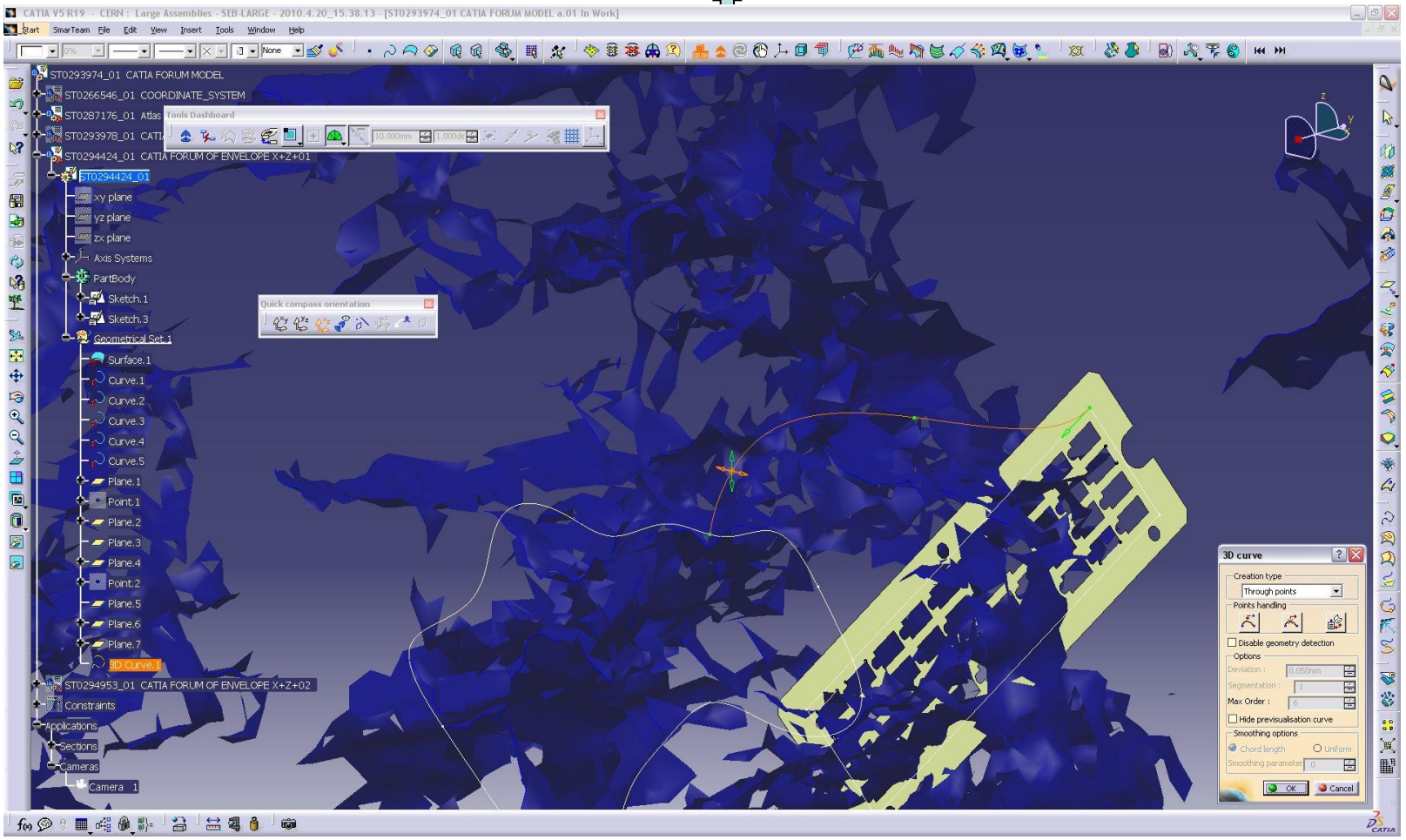
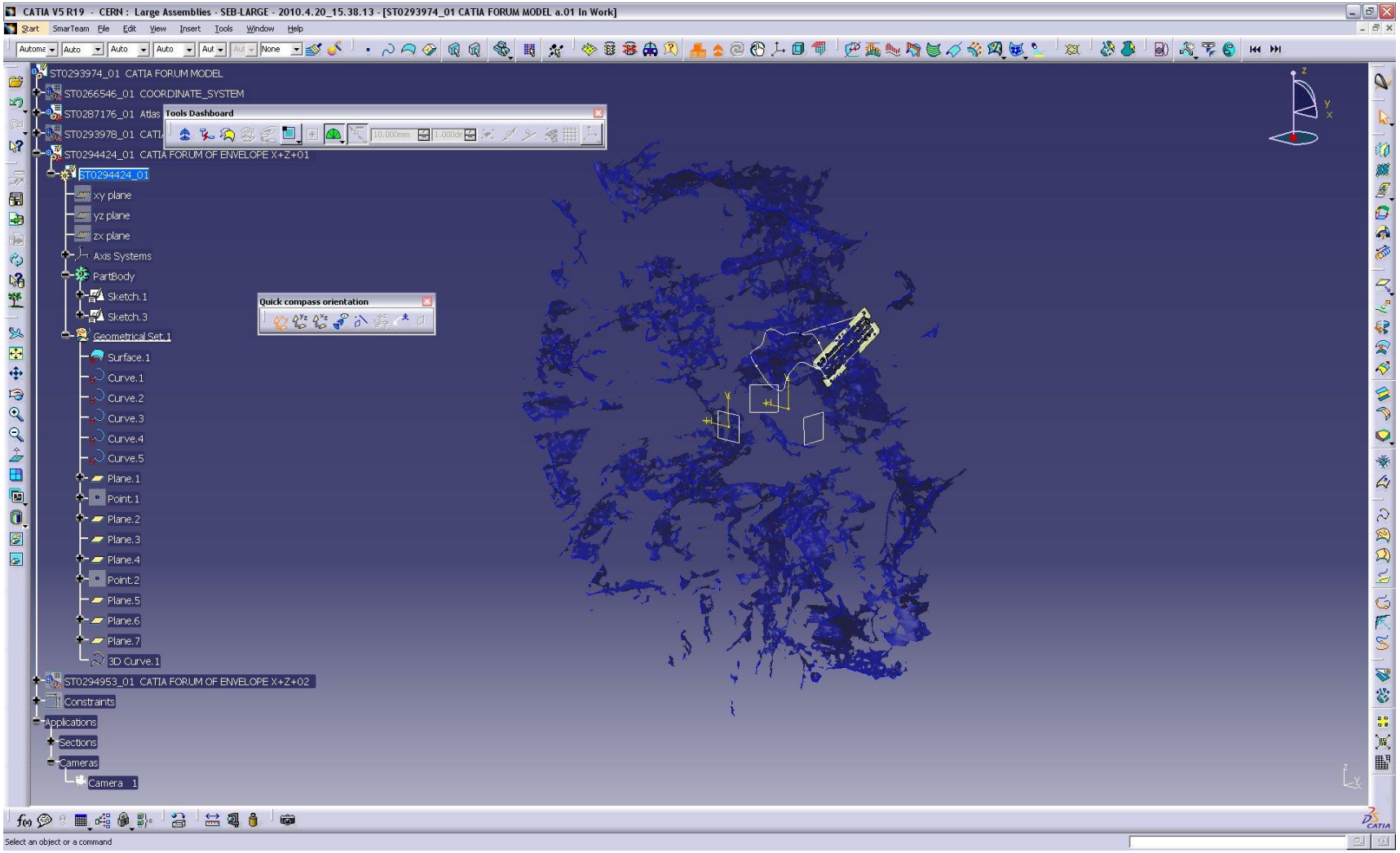
OK
Cancel
Click anywhere to create your construction points. Scans of points can also be selected.

# 3D curve

- From sketch 1 to sketch 2



# 3D curve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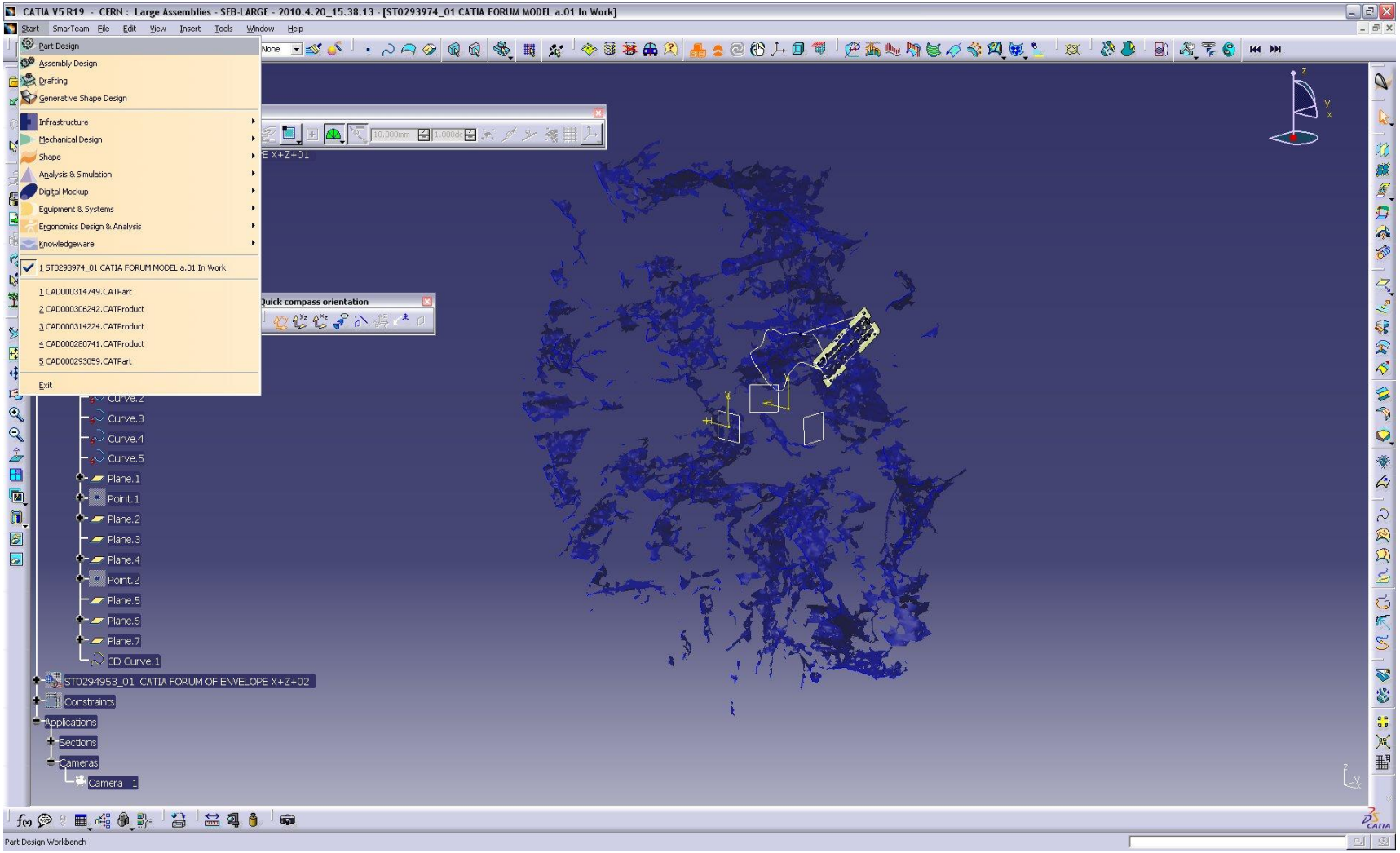
# 3D curve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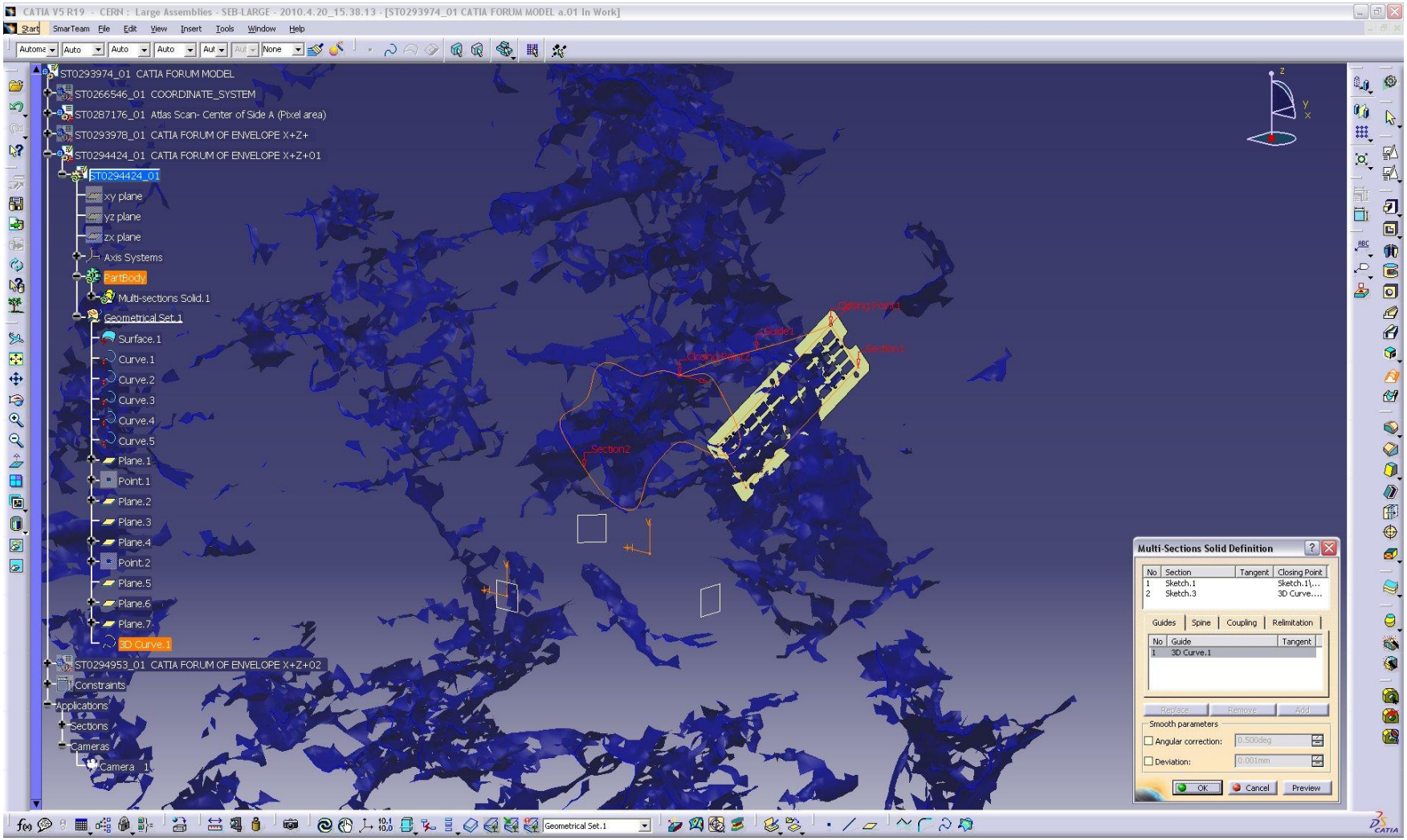
# Multisection solid



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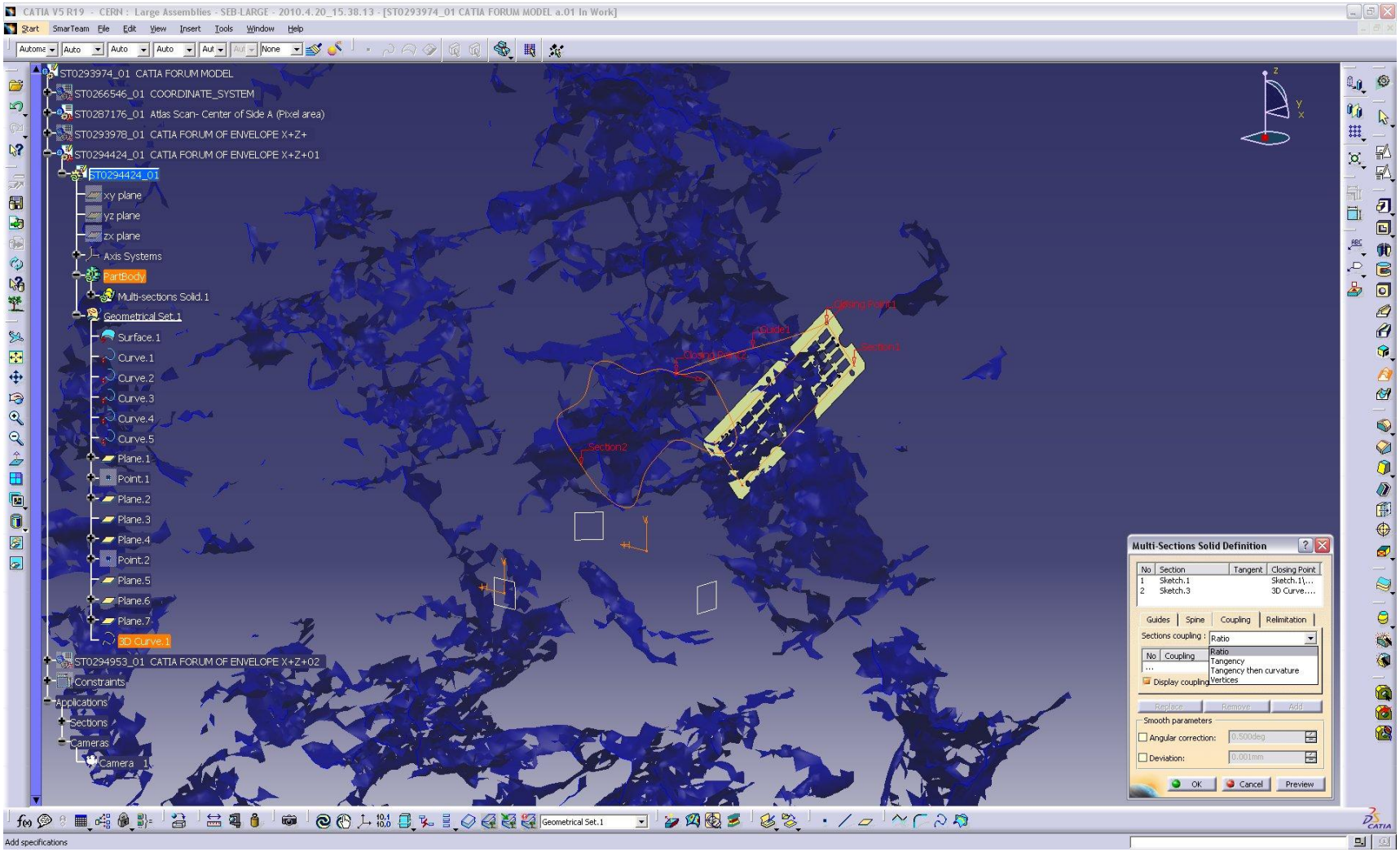

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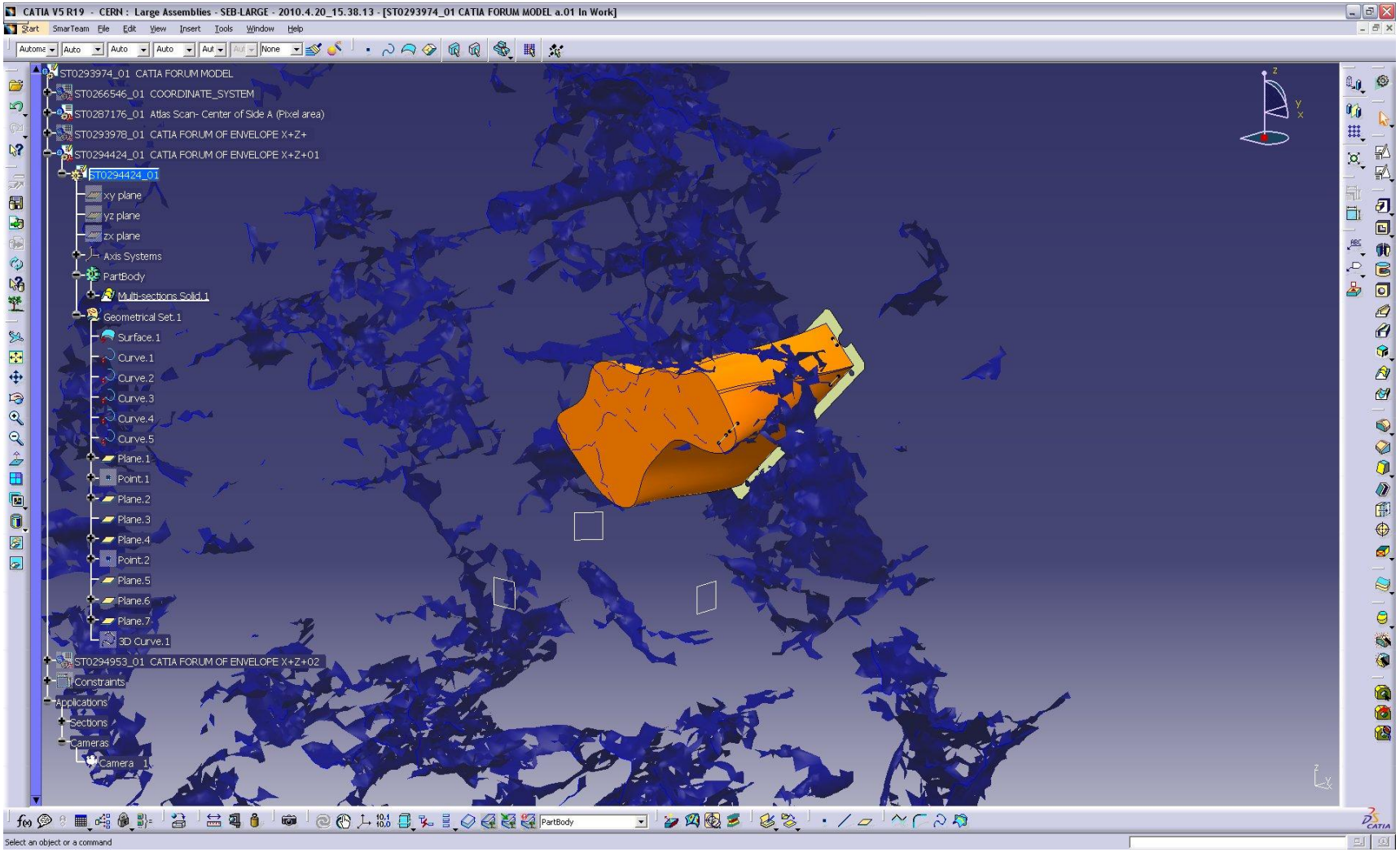

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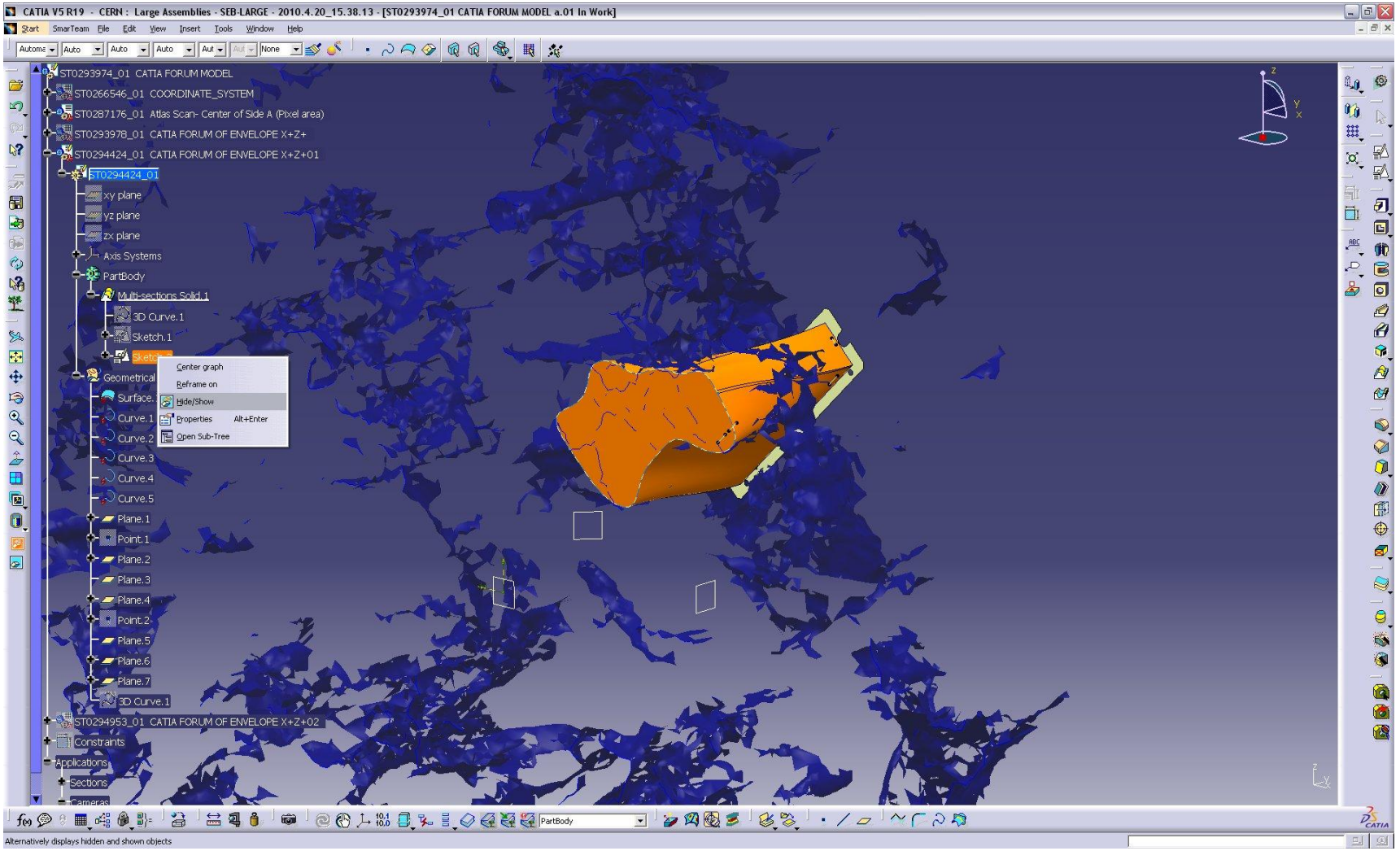
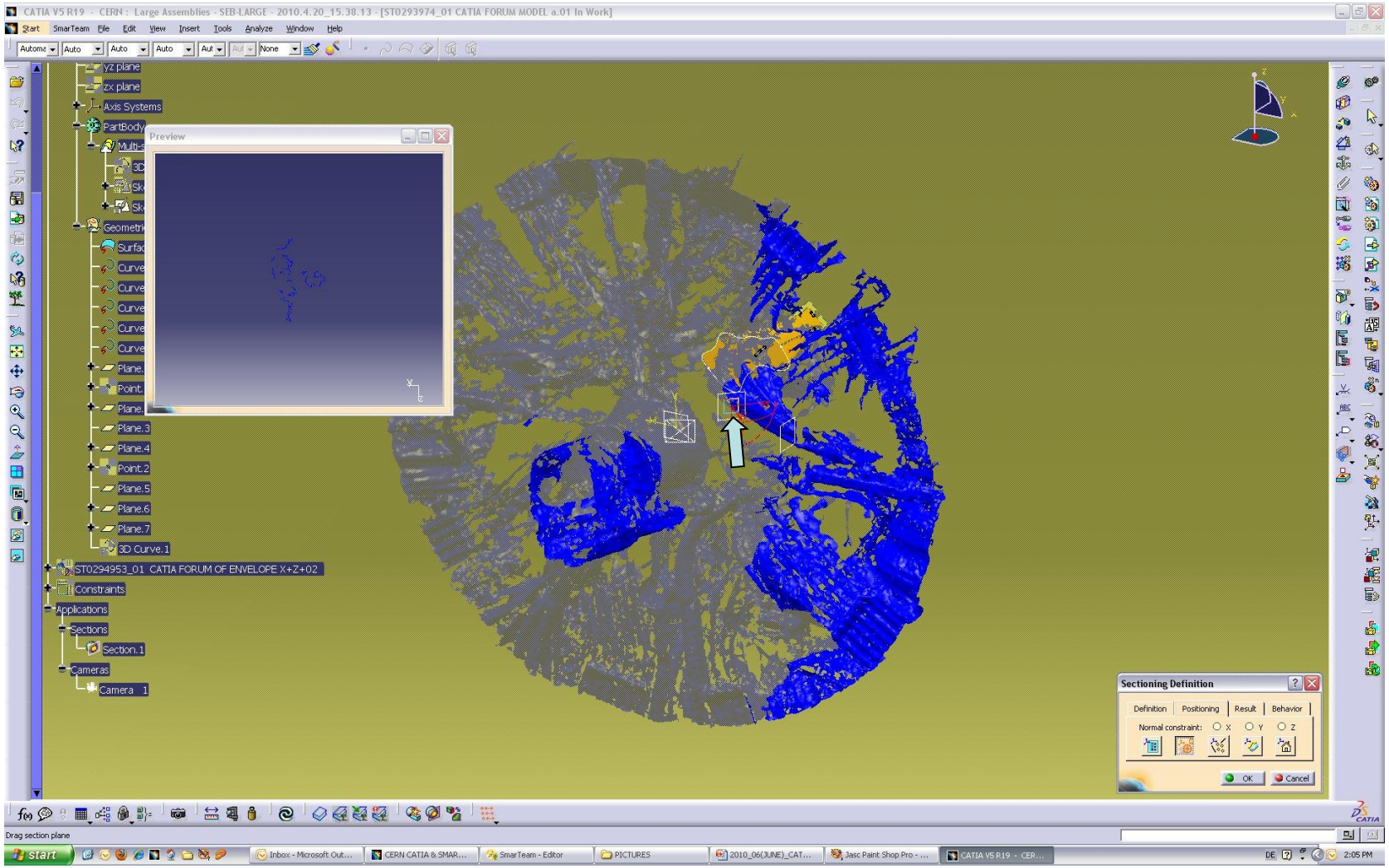
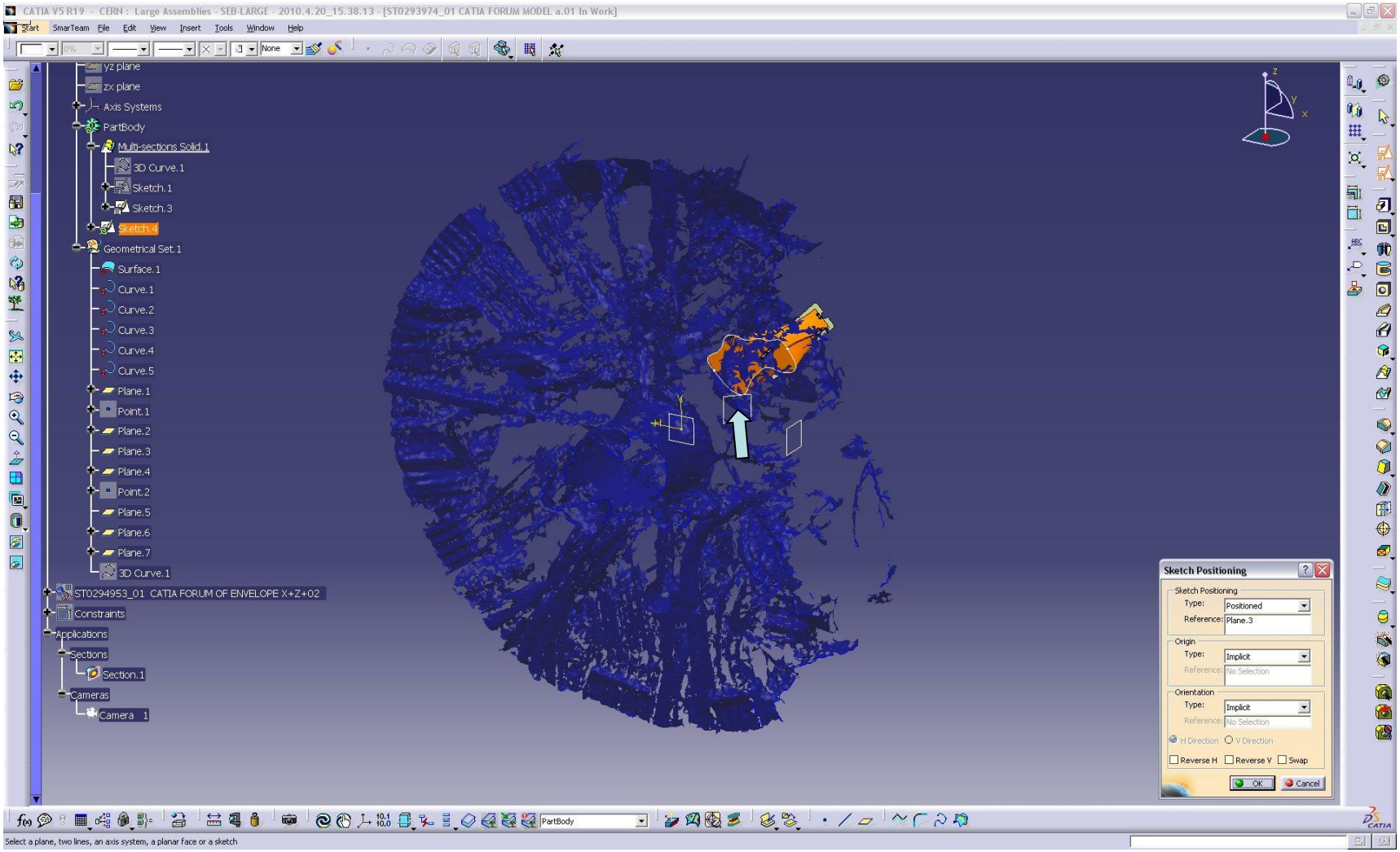


# 3D sectioning



# Sketch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yz plane
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Reference: Plane.3
Origin
Type: Implicit
Reference: No Selection
Orientation
Type: Implicit
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Reverse H Reverse V Swap
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PartBody
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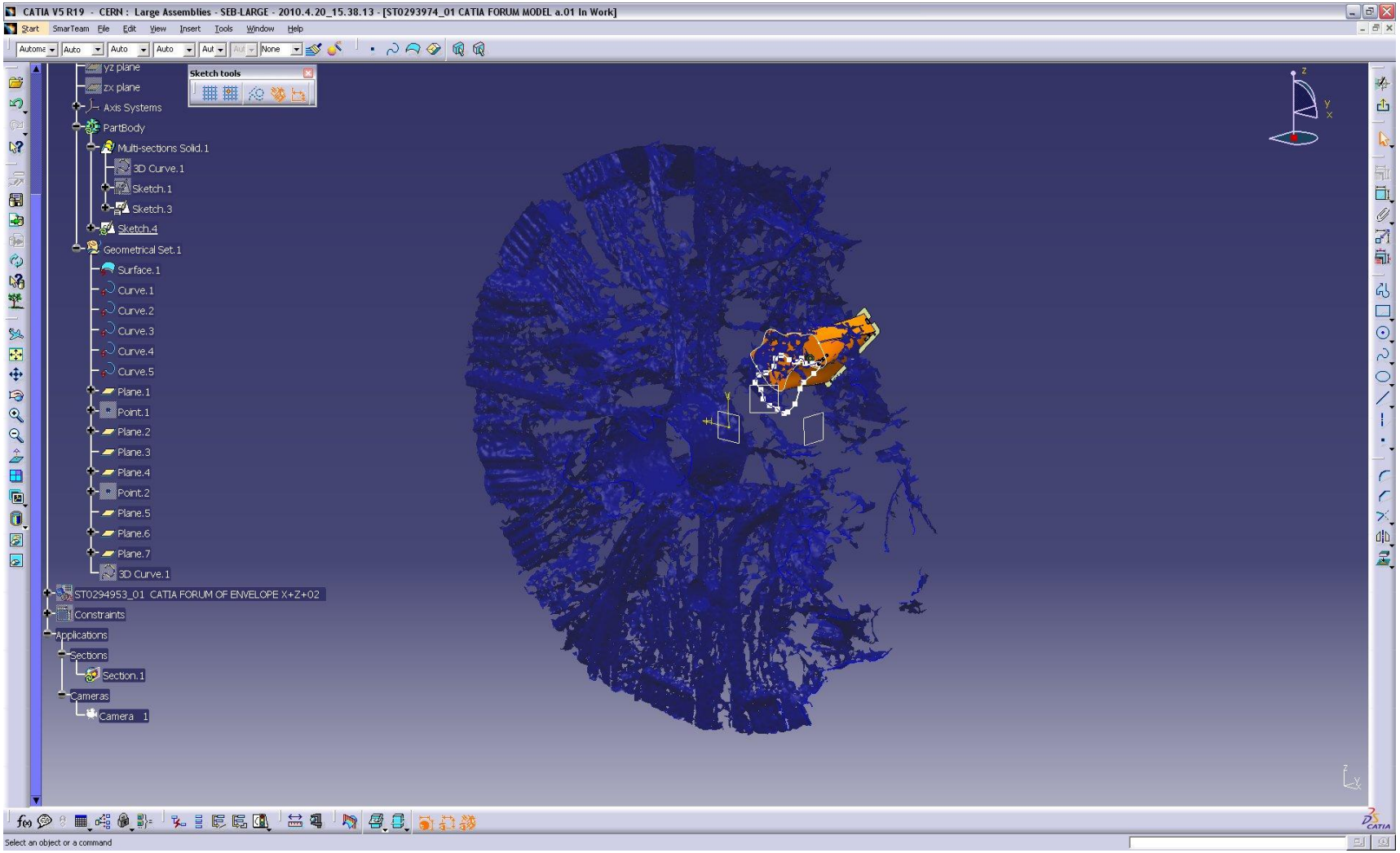
# Spline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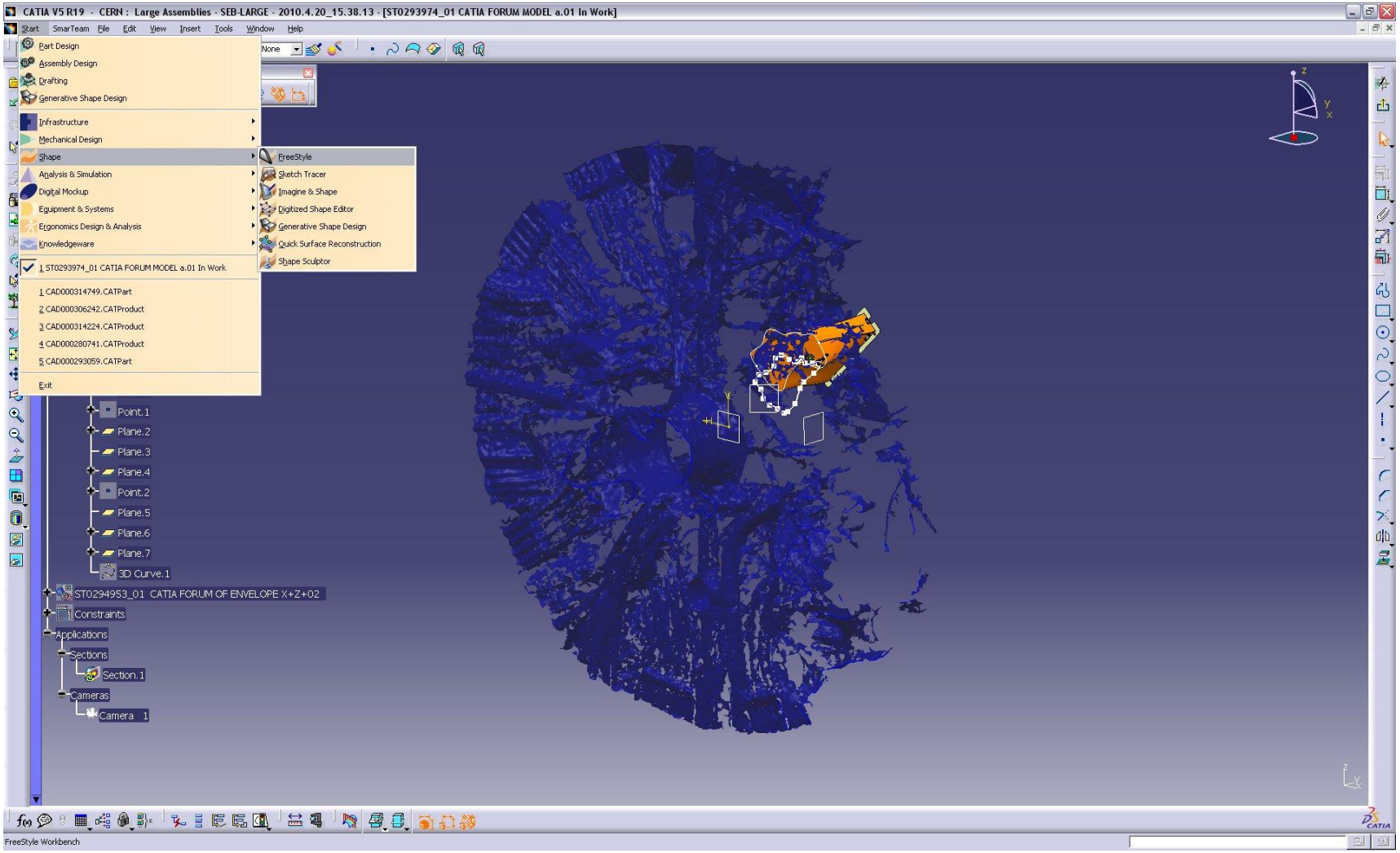
# 3D curve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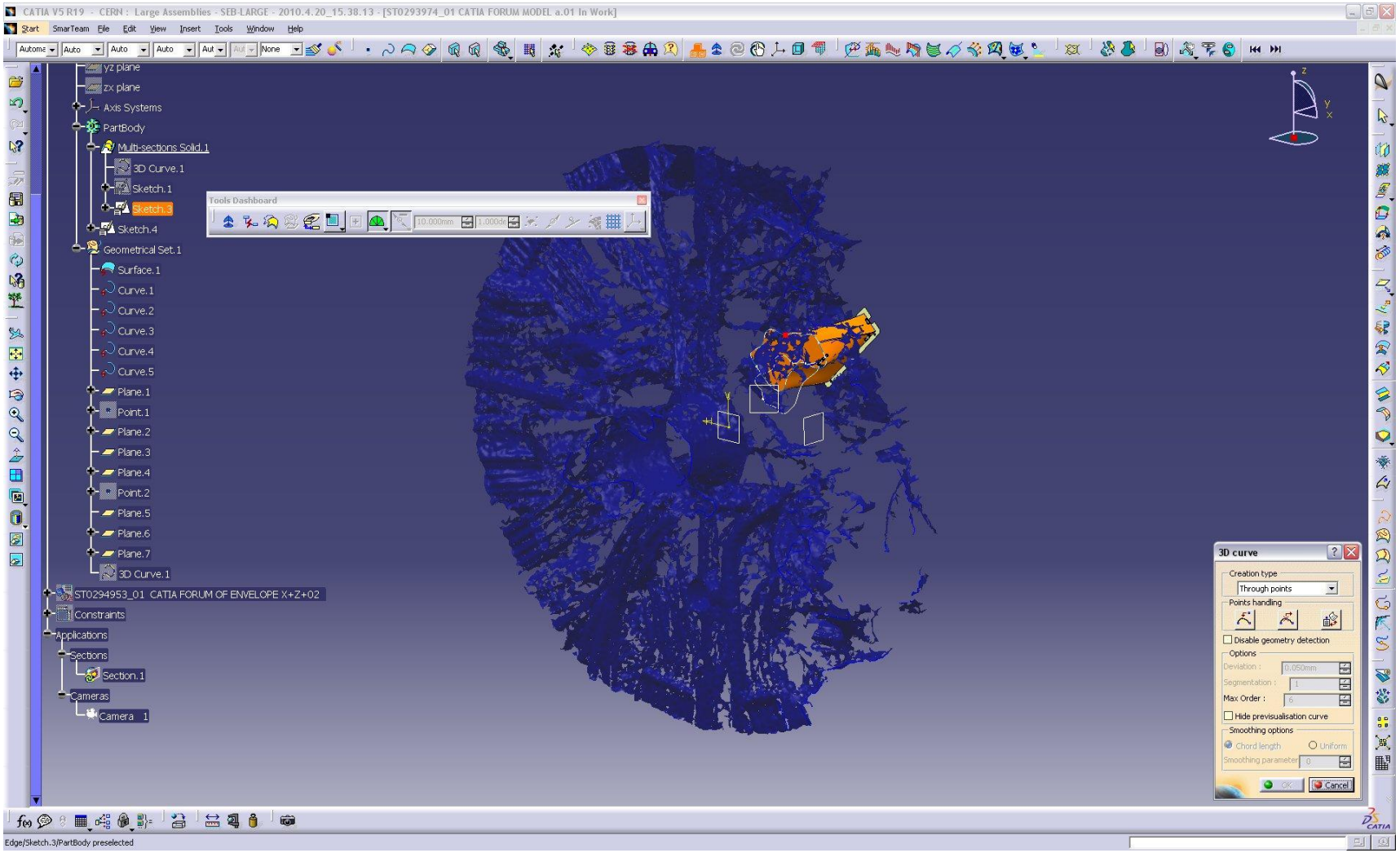
# 3D curve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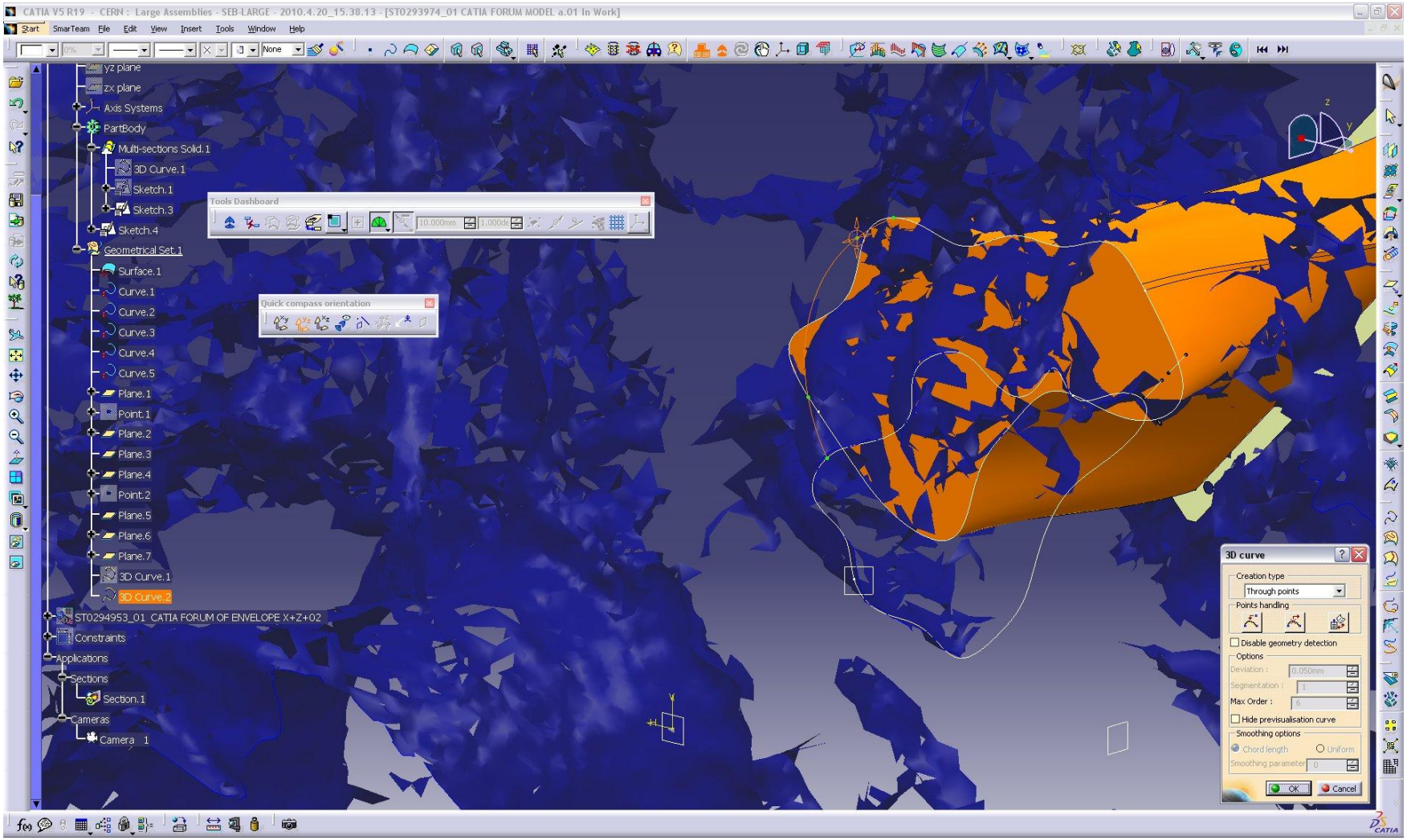
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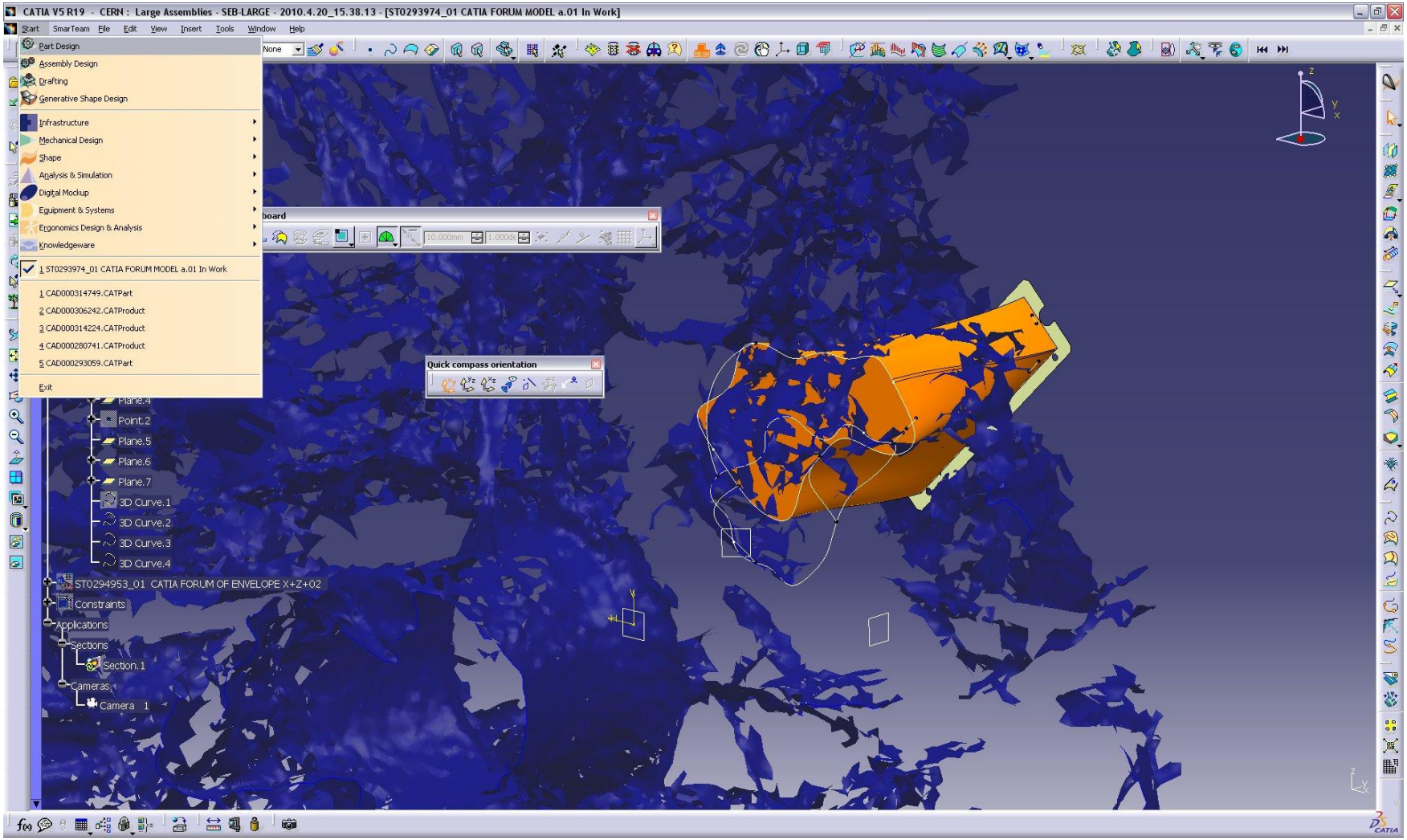
# 3D curve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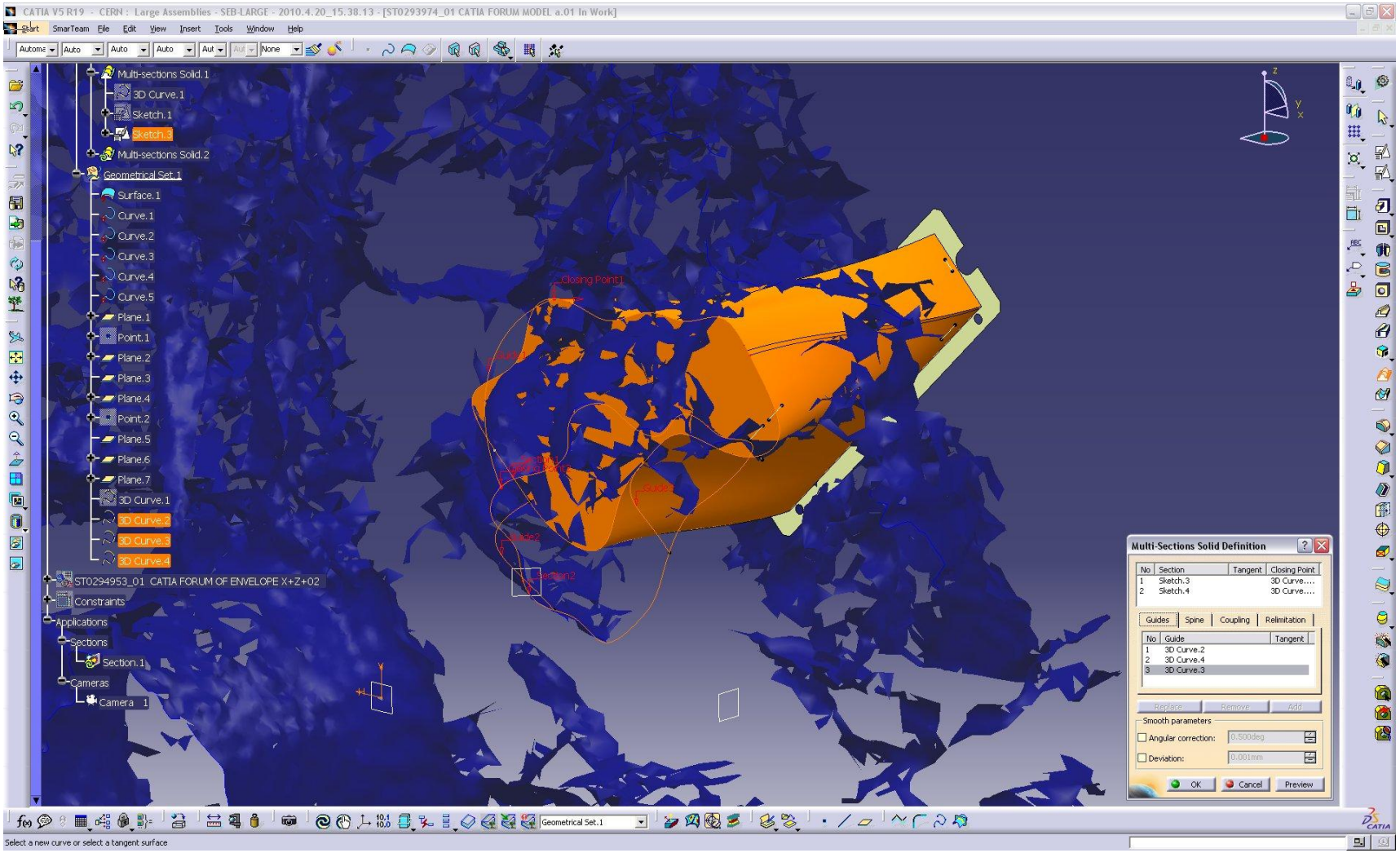
Camera 1

# Multisection solid



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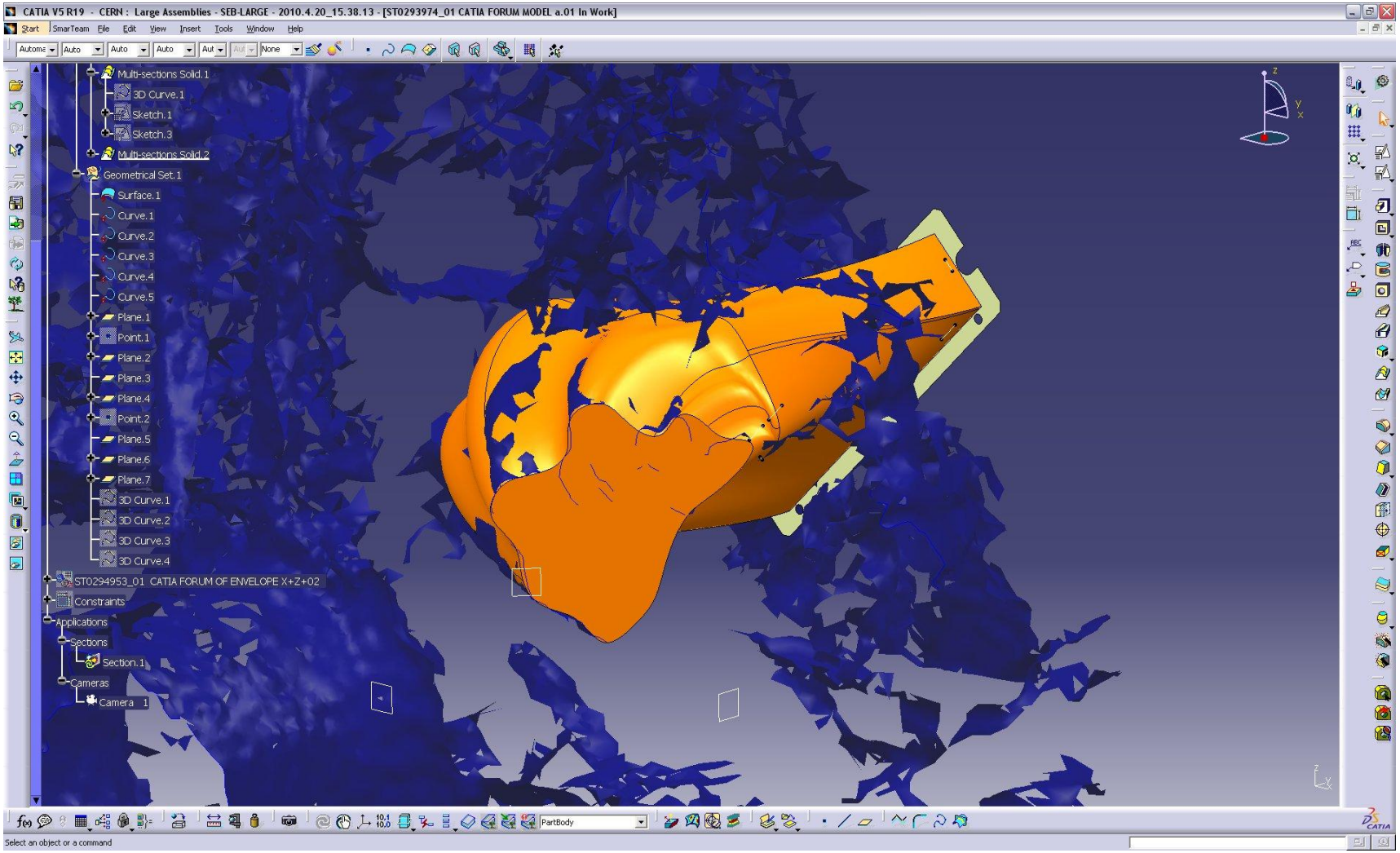
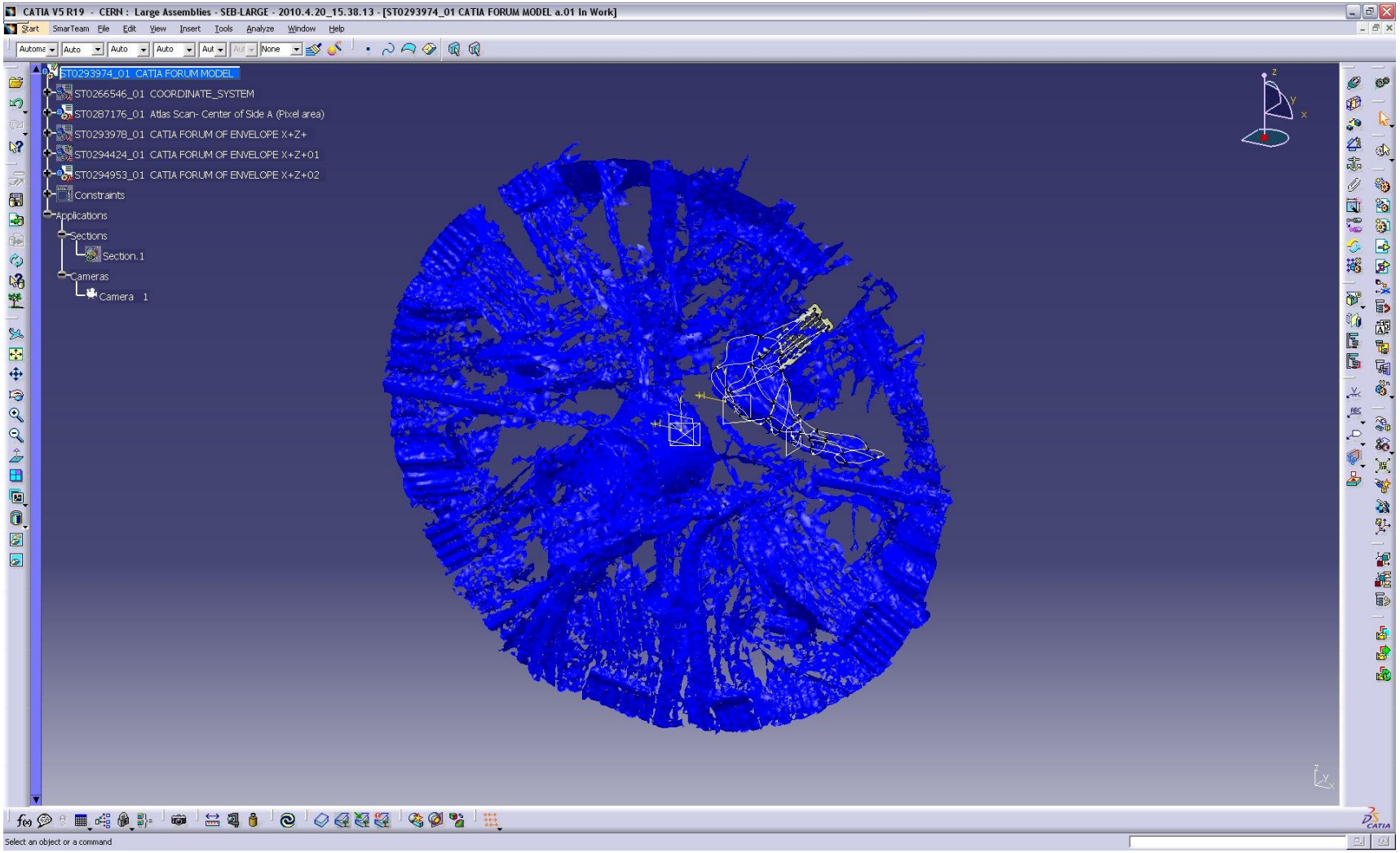
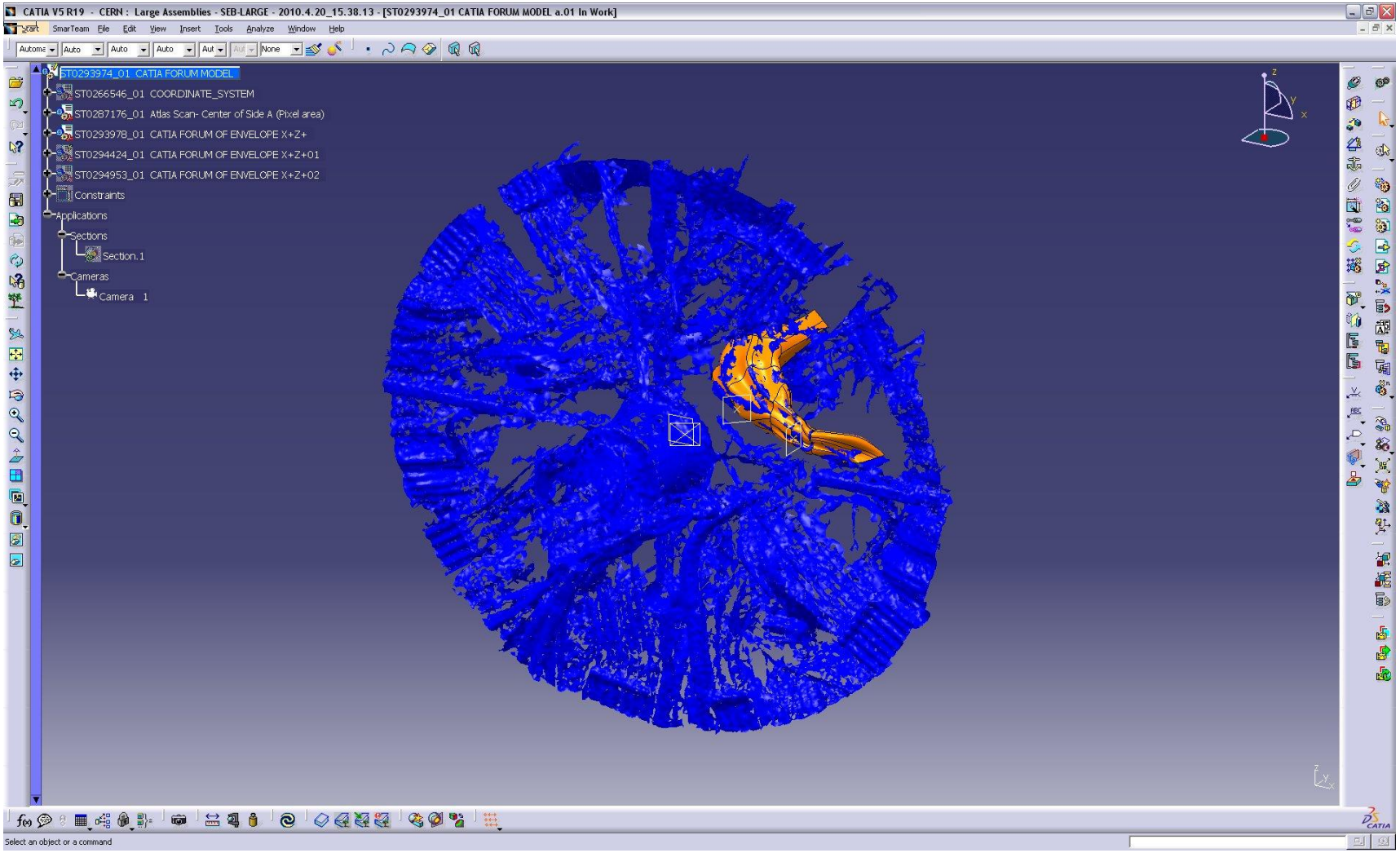


# Splines and 3D curves



# Result


CATIA V5 R19 - CERN : Large Assemblies - SEB-LARGE - 2010.4.20_15.38.13 - [ST0293974_01 CATIA FORUM MODEL a.01 In Work]
Start
SmarTeam
File
Edit
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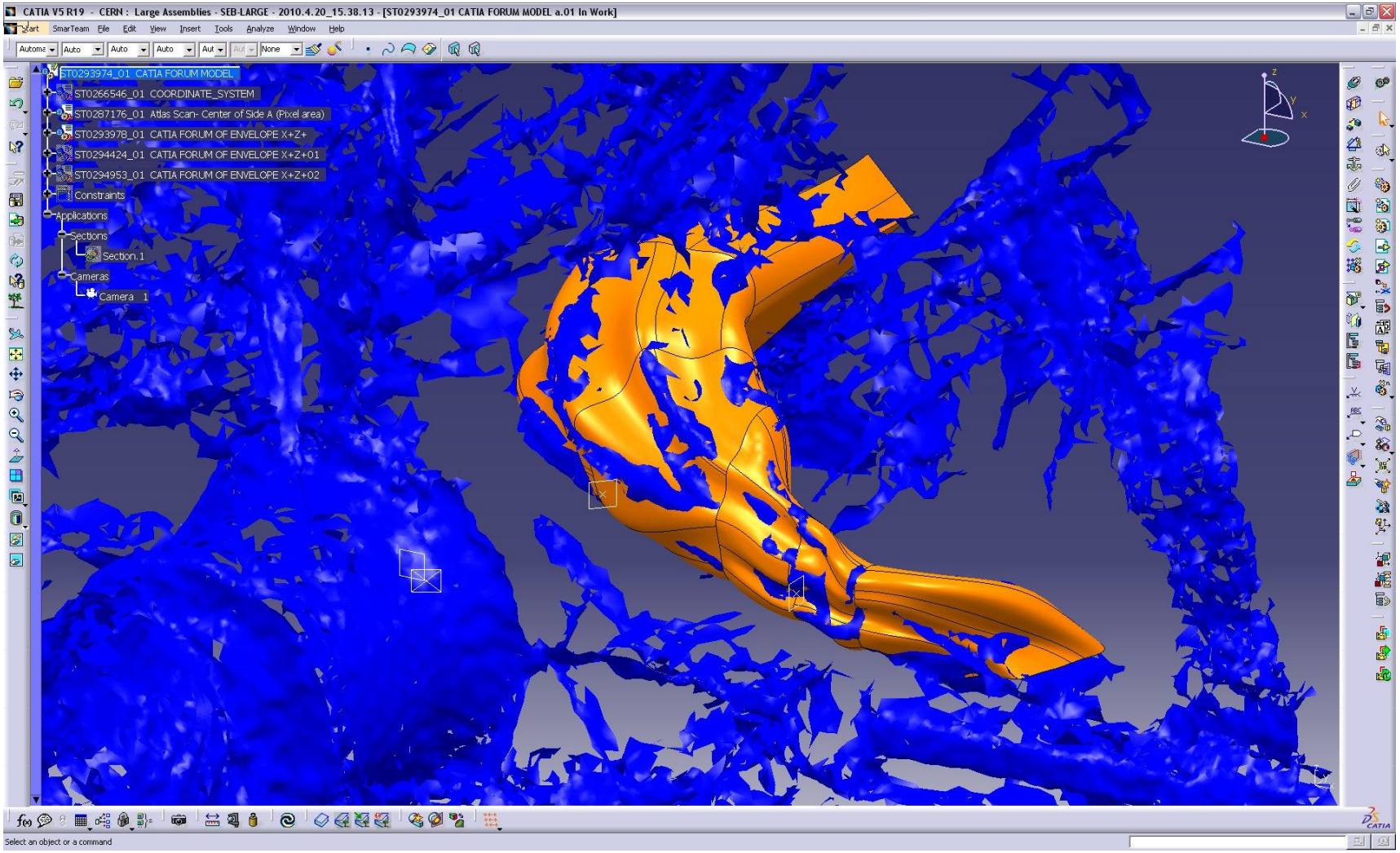
ST0293974_01 CATIA FORUM MODEL
ST0266546_01 COORDINATE_SYSTEM
ST0287176_01 Atlas Scan- Center of Side A (Pixel area)
ST0293978_01 CATIA FORUM OF ENVELOPE X+Z+
ST0294424_01 CATIA FORUM OF ENVELOPE X+Z+01
ST0294953_01 CATIA FORUM OF ENVELOPE X+Z+02
Constraints
Applications
Sections
Section.1
Cameras
Camera 1
Select an object or a command

# Result


CATIA V5 R19 - CERN : Large Assemblies - SEB-LARGE - 2010.4.20_15.38.13 - [ST0293974_01 CATIA FORUM MODEL a.01 In Work]
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