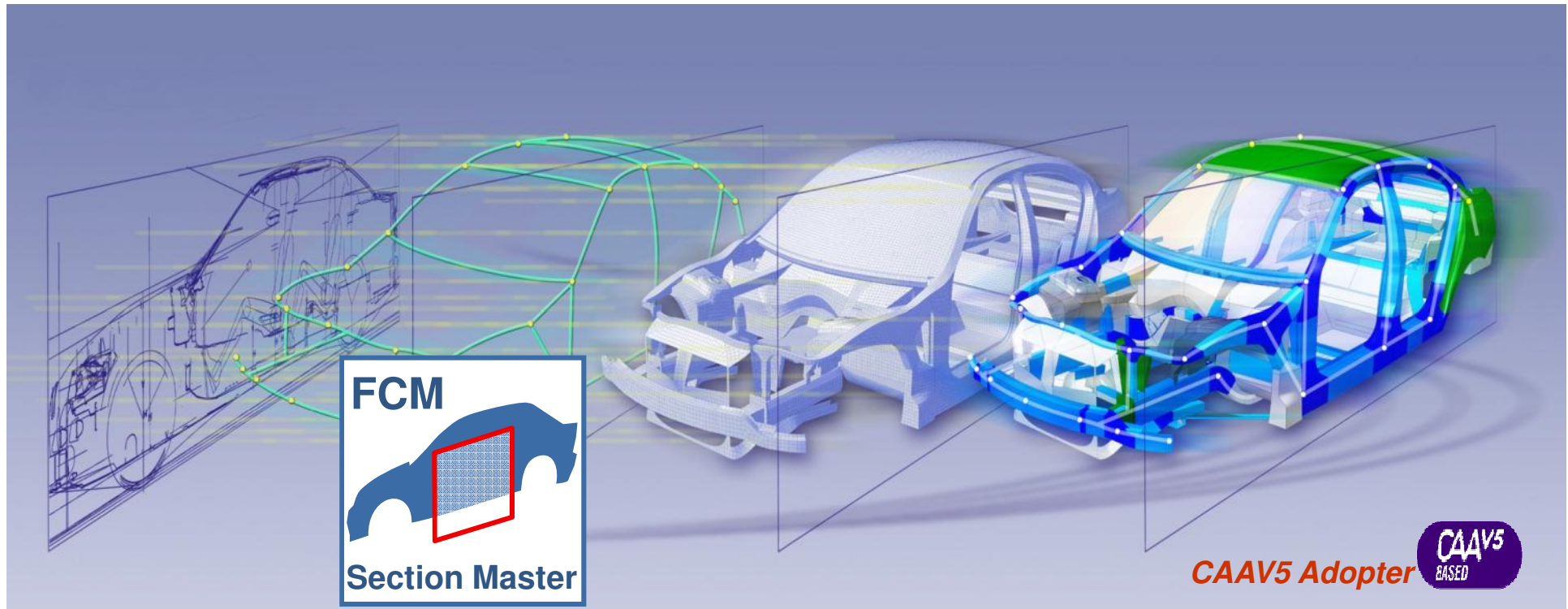


Fast Concept Modeller[®]

High Speed for multi-disciplinary concept development



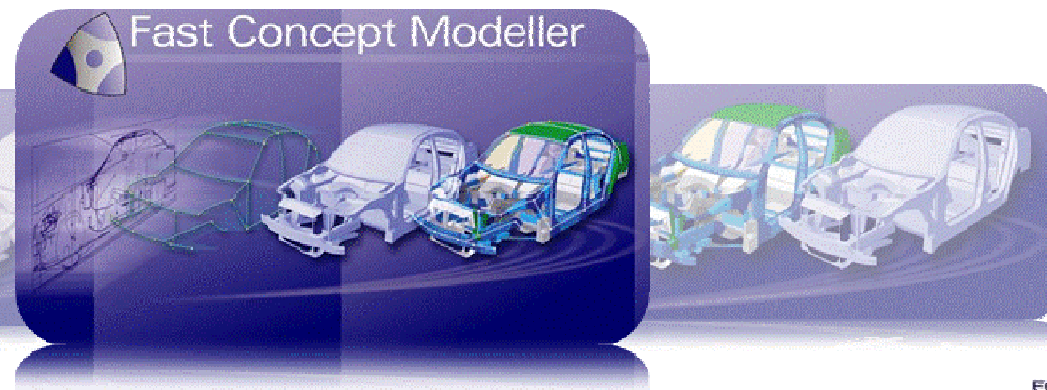
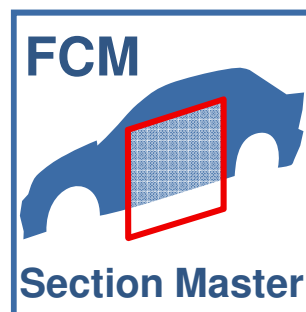
FCM Section Master for Catia V 5

enhancing sections in the CV5 environment

Introduction

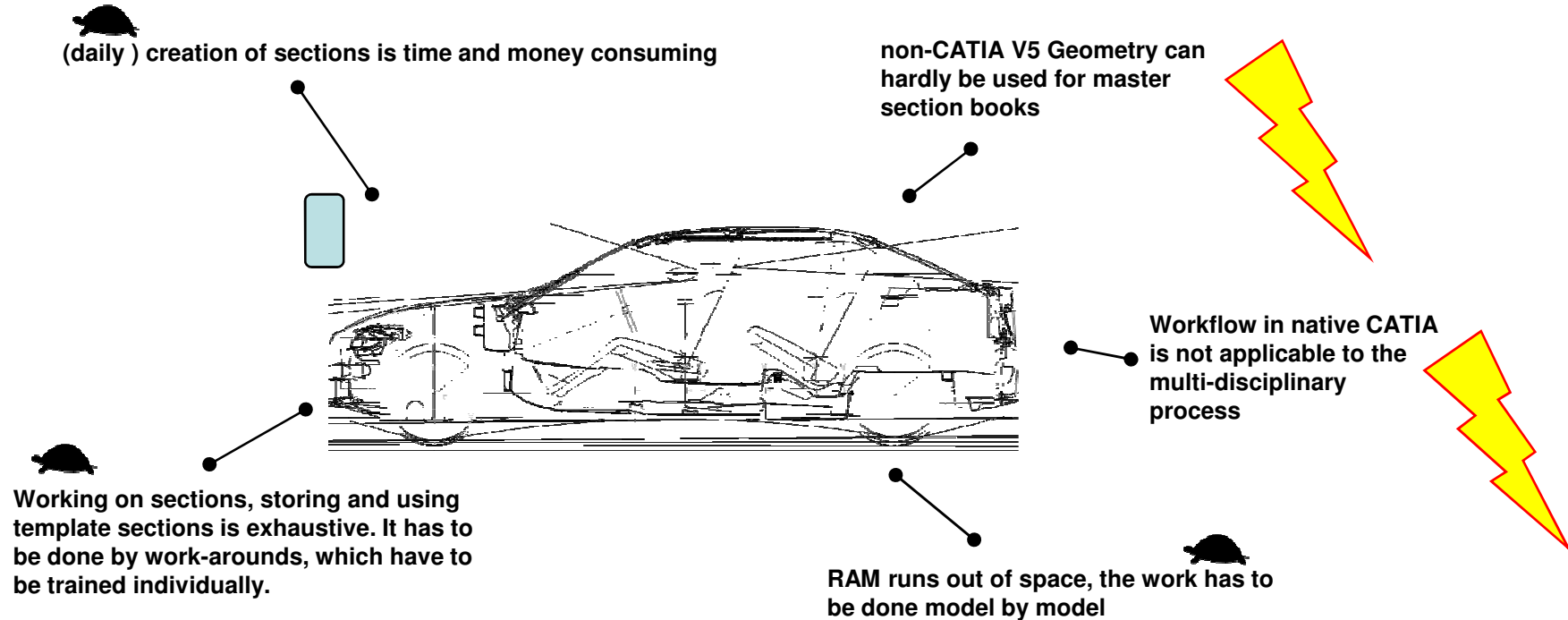
FCM – Section Master for Catia V5

- **Fast Section Master** is a common initiative of BMW and Force Five AG and was developed as a part of **Fast Concept Modeller**. **Fast Concept Modeller** is a workbench within **CATIA V5** that enables the creation of concept product design geometry.
- **Fast Section Master** is a **CATIA V5** Add on and available as a single module of **Fast Concept Modeller**.
- **Fast Section Master** can be used in *any CATIA workbench*, such as GSD, providing benefits for the rest of the design process and production design.
- **Fast Section Master** offers all the tools required to enhance working with package, concept and experimental sections used for design decisions, variant comparison and package planning.
- **Fast Section Master** offers unique entire vehicle intersection for smooth usable results.
- **Fast Section Master** offers fast manipulation and management tools that are not available in normal CATIA.

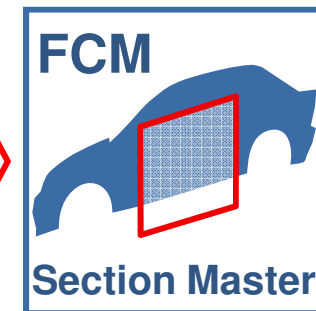


Current Situation: constraints in native CATIA V 5

The process of creating, modifying and managing sections in native CATIA is limited. Effort is enormous and capacities are wasted.

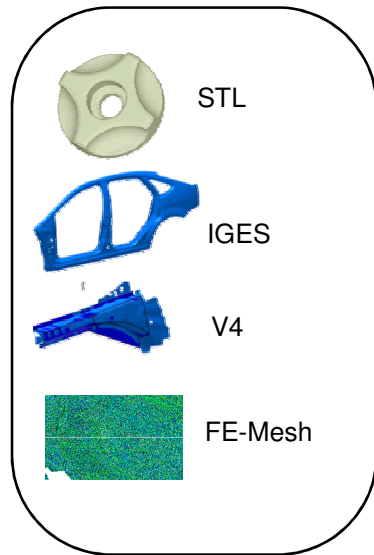


Today, most of the creating, modifying and managing activities on sections is **non value-adding**, which hinder the creative, multidisciplinary process of communication and tie up capacities and resources.
The distinct potential can be lifted by FCM-SectionMaster™.

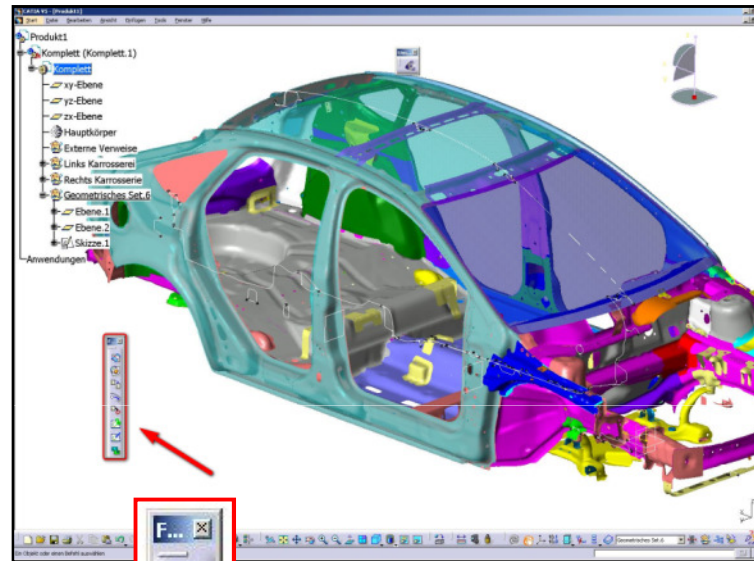










Product overview FCM-SectionMaster

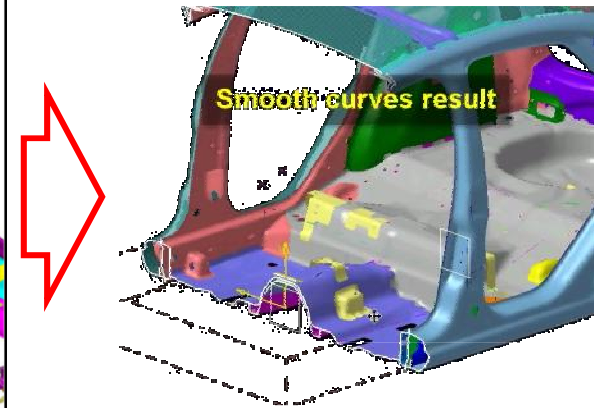
Intelligent solution provides an ideal workflow and allows to work with geometries of all kind. Irrespective of the large number of models, extremely fast (one-click) generation of smooth sketch curves is possible.



Design Mode

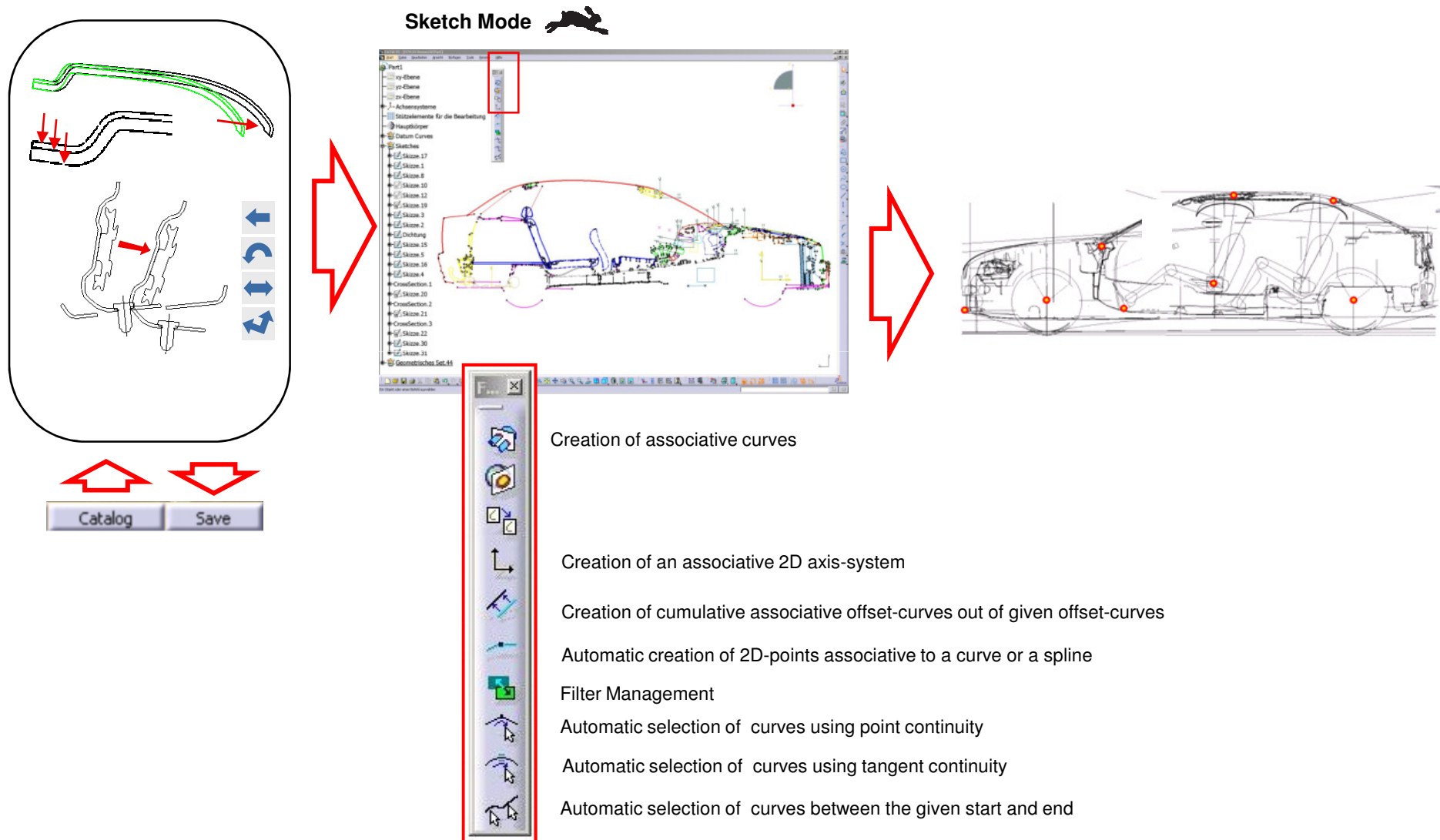


-  Creation of associative curves
-  Creation of smooth curves, irrespective of input geometry type / format
-  moving, bending and copying of sketches
-  Intersection of (virtually) swept surfaces
-  New positioning of sketches
-  De-linking the linked sketches
-  Refreshing linked sketches to the parent sketch properties
-  Filter Management



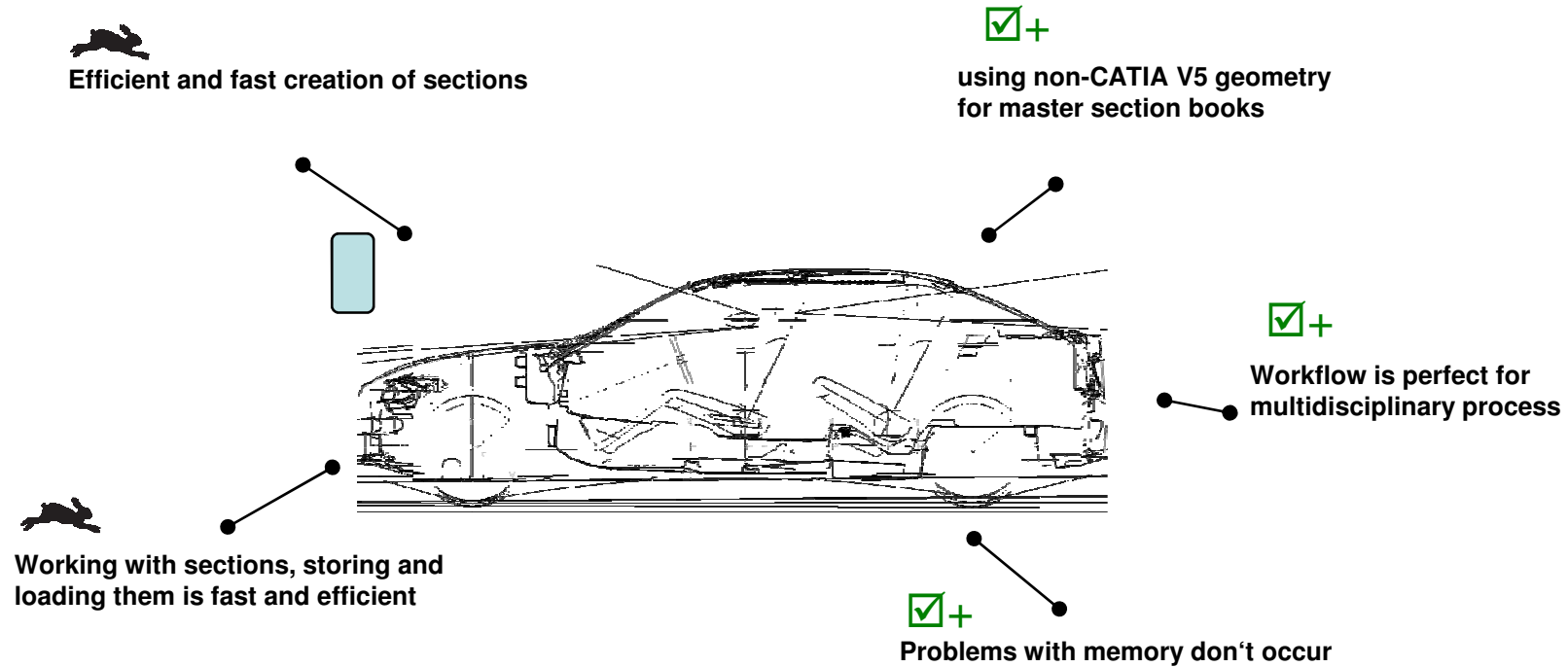
Product overview FCM-SectionMaster

Intelligent solution provides an ideal workflow and allows to work with geometries of all kind. Irrespective of the large number of models, extremely fast (one-click) generation of smooth sketch curves is possible.



Customer benefit

Usually, the result of creating, modifying and managing sections in native CATIA is unsatisfactory. Effort is enormous and capacities are often wasted.



FCM integrates the ease of sketching in 2D mode with the dynamic positioning of DMU sections in a unique and seamless tool .

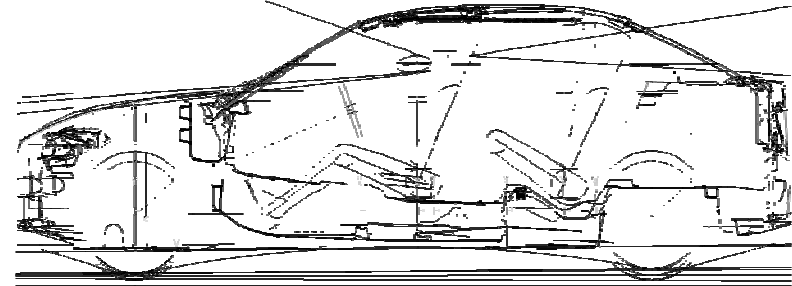
Additionally a high number of functions offer the unique capability to intersect an entire vehicle in one step and still gaining a useable result. On the other hand, section master provides an ideal, time-saving and efficient workflow in the development and decision-making phases.



Section Master

Case Study* Model Intersection / Complete Vehicle Sections

In CATIA V5 without Fast Section Master it is necessary to either load all of the parts in Design Mode and cut them with GSD or Sketcher. Loading the parts can be a problem. Another way is to use DMU and import the results back into CATIA and smooth them for use. The resulting quality is not good despite the extra efforts needed.



Fast Section Master		CATIA	
Step	Minutes	Minutes	
Load all parts as CGR	5	250	Sequential loading of parts in Design mode ~1000x15sec
Create Section Geometry through all parts	5	62.5	Creation of Sections through 250 parts (~15 sec per part)
E.G. Time for 5 Sections per Vehicle	30	562.5	E.G. Time for 5 Sections per Vehicle
E.G. 5 Times per Month	150	2812.5	E.G. 5 Times per Month
Hours required per month	2.5 hours	46.8 hours	Hours required per month

Time saved using FCM Fast Section Master: **95%**



Section Master reduces non value adding activities!
 New capabilities to also intersect through *.stl data, FE-meshes or IGES and other CATIA readable formats without any problems and to further use them within a PLM system are constitutional for working multi- or interdisciplinary.

*Effort Comparison and not a process study

Section Master vs. native CATIA

Comparison of single functions

Section Master

In 3D

- **Intersection** Through Vehicle: usable permanent result
- Sketch **Intersection** associative though multiple body
- Move sketches with **Transform**
- Copy sketches with **Transform**
- **Sweep Sketch**
- **Change support** of any type of sketch
- **Explode** Linked sketch
- Copy and move **Filters**

In 2D

- Create multiple associative offset curves
- Select chains of segments that have **branches**
- Select chains of segments up to **sharp corner**
- Select a specified **part of a chain**

Transform Geometry in the sketcher:

- Select explicit reference data
- Save Transformations for re-use
- Reverse a transformation
- Combine Transformations
- Stretch Geometry
- Fit geometry. (Translate, Scale, Rotate in one)
- Align Geometry

Native CATIA

- **Not Possible** for the same usable quality
 - **Not Possible**. Result not associative. Datum type curve.
 - Editable result not possible Datum type curve.
 - **Not Possible**
 - Only possible in multiple steps with multiple objects
 - Only possible in multiple steps with multiple objects
 - All constraint and property data is lost.
 - Not Possible. Filters created in on Catpart must be created from scratch if they are needed in another.
-
- **Not Possible**
 - **Not Possible**
 - **Not Possible**
 - **Not Possible**
-
- Possible only through a tricky alternative.
 - **Not possible**
 - **Not possible**
 - **Not Possible**
 - **Not possible**
 - Only possible in multiple complex steps
 - Only possible in multiple complex steps