White Paper

Mechanical Modeler

Color management in the 3D shape for Import

3DEXPERIENCE

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Written by: Florent COQUET
Validated by: NA
Edited by: Anne Marie Miller

V5-6R2015

Executive Summary

Designers working on 3D geometry often make use of graphic properties to color the parts or faces of the geometry. With the capability to copy the design with or without link, the behavior and management of the graphic properties becomes challenge.

This document will discuss about the management of graphic properties in Cut / Copy / Paste (CCP) context. Two modes of CCP are concerned here:

- ***CCP As Result (CCPAR)***
- ***CCP As Result With Link (CCPARWL)***

It will also discuss about the reset and synchronization (for CCPARWL) of graphic properties.

This White Paper will be useful for users of CATIA with the prior knowledge of graphic properties.

Contents

1. Before you start reading

In this document, you will see reference to the word “color” lots of time. In fact everything mentioned here for color can be applied to either Color/Opacity/*Effect (V6 only)*. Keep this in mind. Other Graphic Properties will be treated in another document.

This document will discuss about the management of color in Cut / Copy / Paste (CCP) context. Two modes of CCP are concerned here:

- CCP As Result (CCPAR)
- CCP As Result With Link (CCPARWL)

Screenshots in this document are taken from V5R25 version.

Existing documentation :

- http://dsdoc/doc211/English/PdgUserMap/pdg-c-3DShapeHandle-ColorsAssignedImportedGeometry.htm
- In the search field in DsDoc, please type: color management on import, and select Application Settings – Part Document in the results.

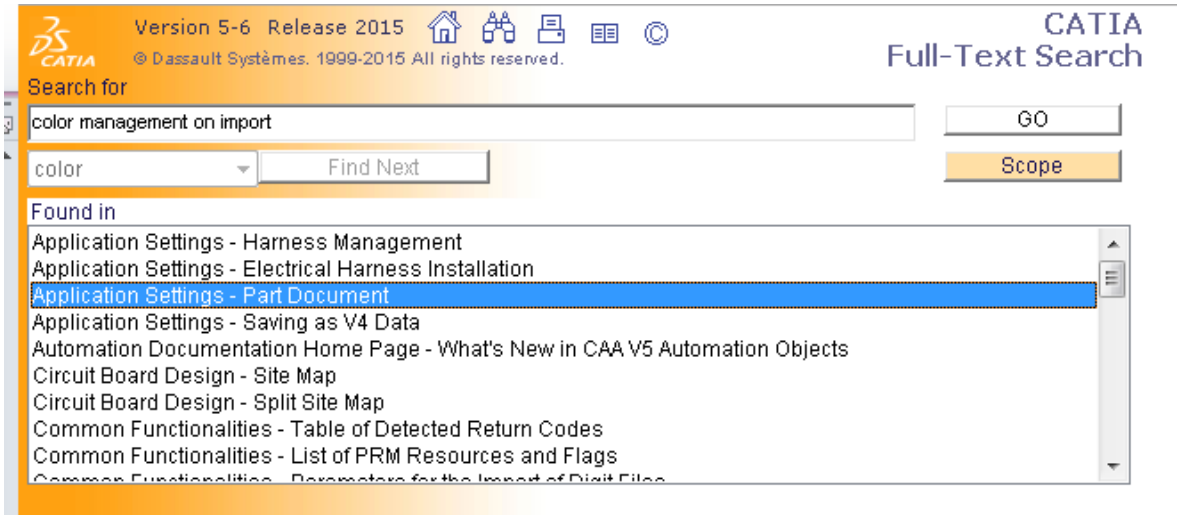


Figure 1 : Existing documentation can be found on DsDoc

2. What is the color management in CPP?

2.1. Role of this feature

The management of color for import started in V5R18 and has evolved with new versions of CATIA. The aim of this feature is to manage the color in case of creation or synchronization of import.

At the beginning, this feature only enables the transfer of color or not from the reference feature to the target. With the last versions, you can choose what color will be transferred according to its provenance.

This document will detail these options throughout their evolutions.

2.2. Specifications of color transferred

2.2.1. Priority

If you are not familiar with of color priorities, please refer to this documentation:http://www.3ds.com/support/news/single/mechanical-modeler-color-management-in-the-3d-shape/?xtmc=color_management&xtcr=2&forceAuth=1

Color issued of Color on Import also has a priority:

This priority stand between the Color on feature and Color on sub-element: Color issued of Color on Import has a lower priority than color on sub-element, but a higher priority than color on Feature.

Color on feature < Color on Import < Color on sub-element

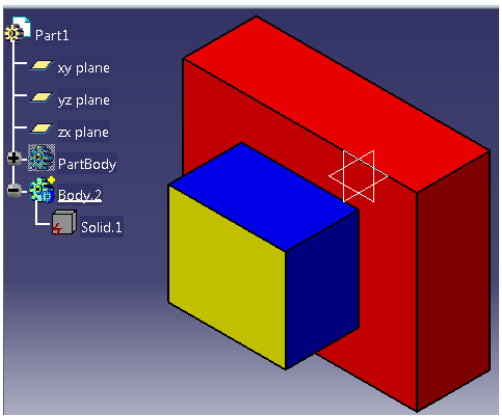


Figure 2 : In this picture, Solid.1's colors on faces are with priority "Color on import"

On Figure.2, putting a color on Body.2 or Solid.1 will have no effect. In order to overload a color on a face, the user has to select one face in the 3D and set a color. (via the graphic toolbar for example.)

2.2.2. Color inheritance

A color on an import **ARWL** cannot be removed. It can be overloaded by a color with a priority "Color on sub-element". If a reset is performed on this face, the remaining color will be the color of the reference feature.

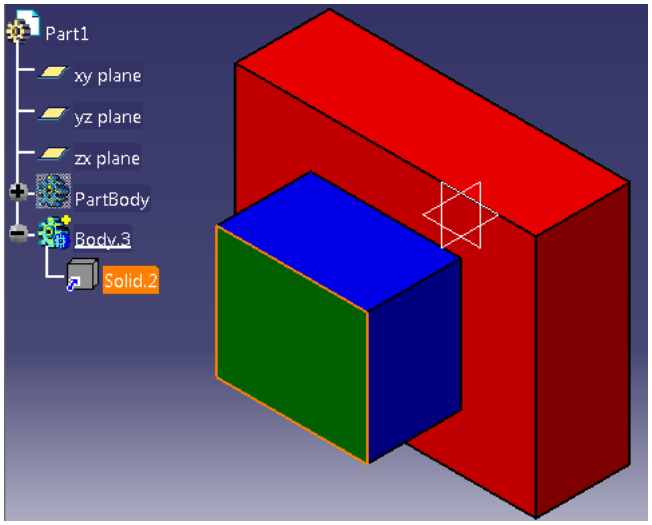


Figure 3 : In this picture, the yellow face is overloaded by a green one (set with the graphic toolbar)

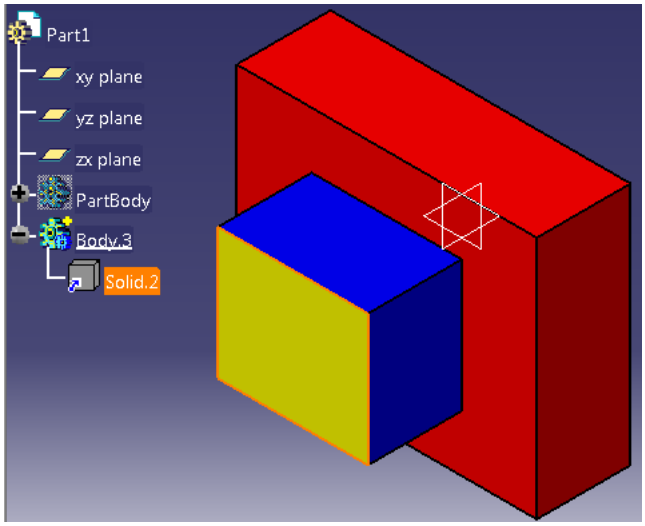


Figure 4 : After selecting Automatic in the graphic toolbar, the green face becomes yellow

3. Finding options of import color management

There are two ways to modify the behavior of color on import:

- The newly created documents use settings in Tool / Options / Infrastructure / Part Document Color on import management

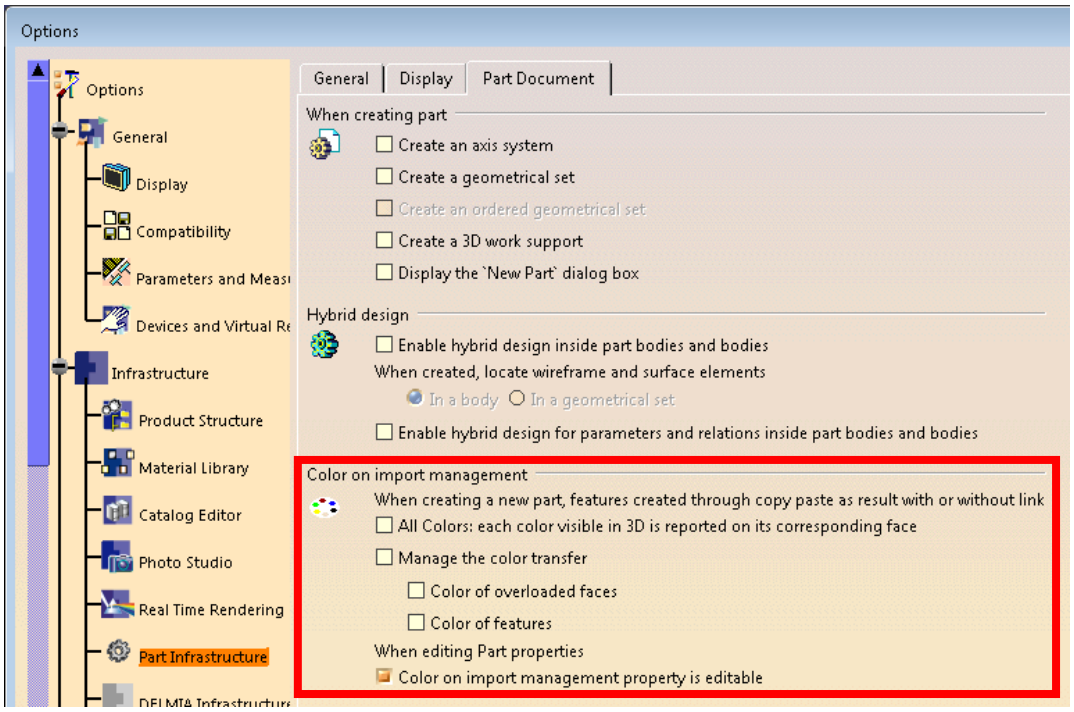


Figure 5: Color on import management in settings

- The behavior of existing documents can be modified in Part properties / Colors / Part Document Color on import management. Modifying these options is allowed if "*Color on import management property is editable*" is checked in the Part Document settings.

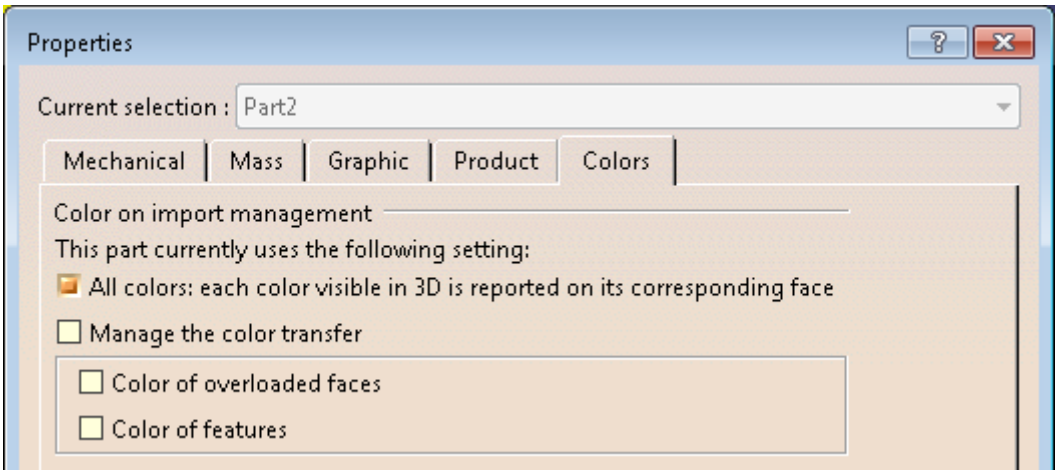


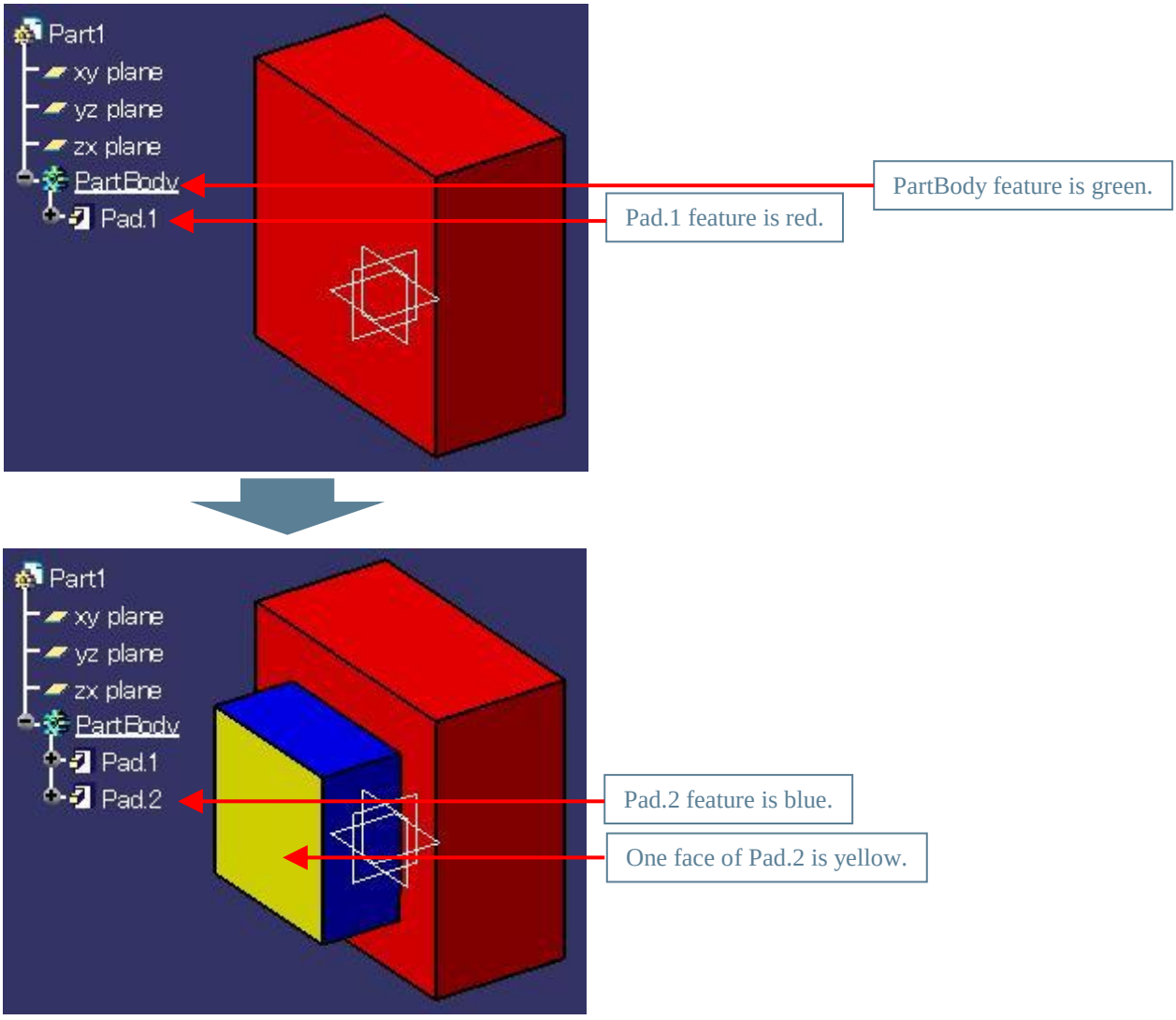
Figure 6: Color on import management in Part properties

Options in Settings and under Part properties are always identical. In the following document, only options in settings will be discussed. These options have the same behavior than Part properties ones.

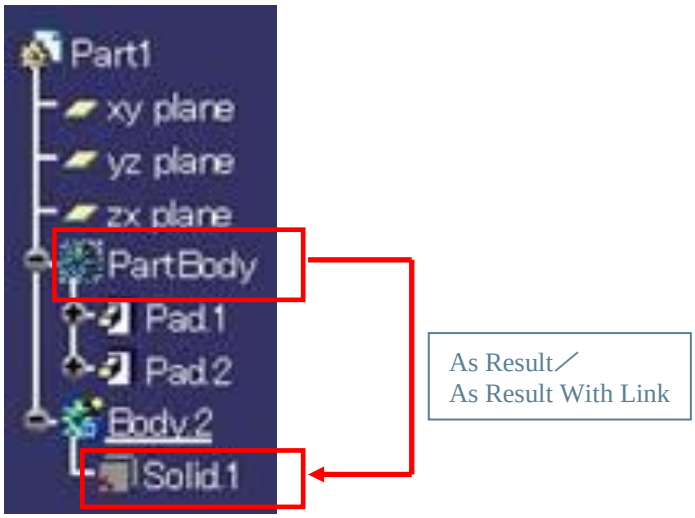
4. Data used to demonstrate behaviors

4.1. Solid

4.1.1. Data

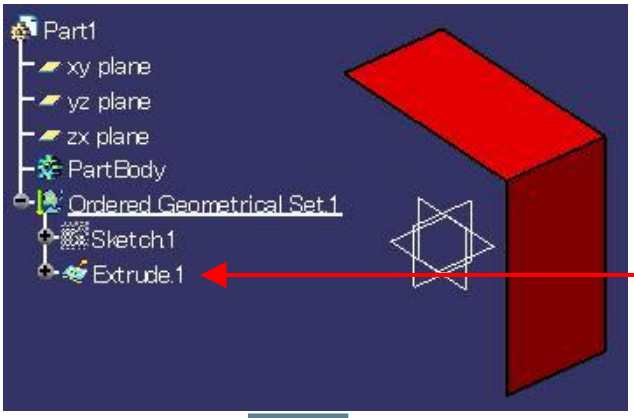


4.1.2. Operation CCP

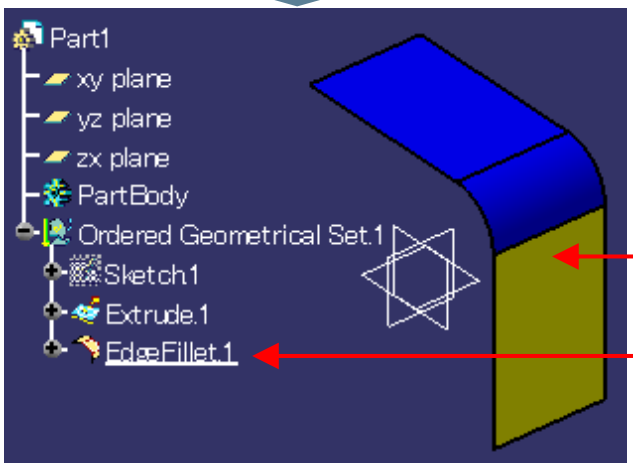


4.2. Surface

4.2.1. Data



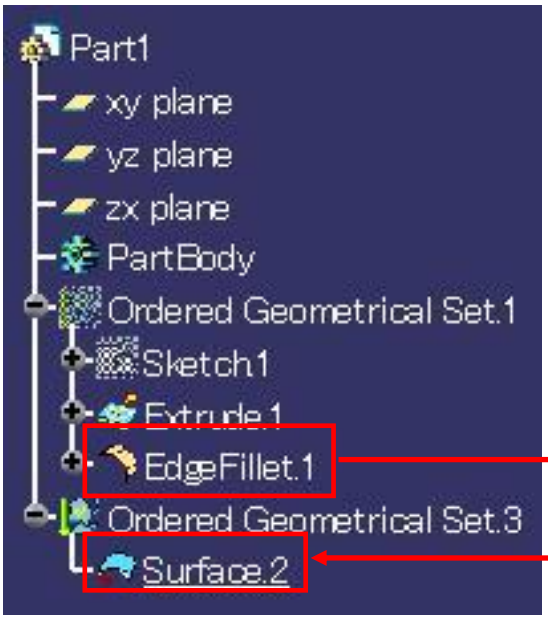
Extrude.1 Feature is red.



One face of EdgeFillet.1 is yellow.

EdgeFillet.1 feature is blue.

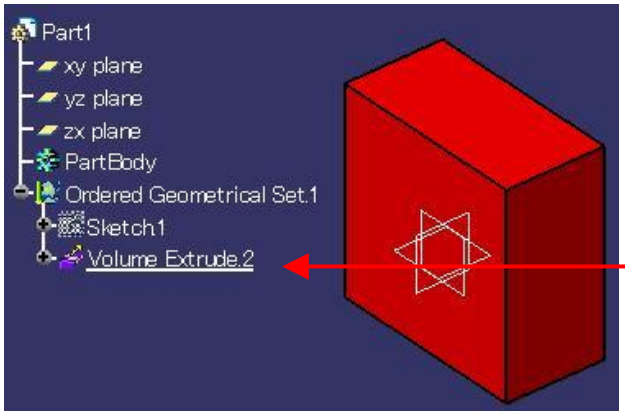
4.2.2. Operation CCP



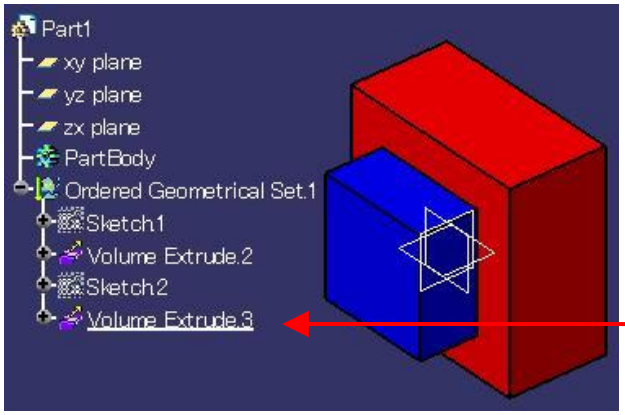
As Result／
As Result With Link

4.3. Volume

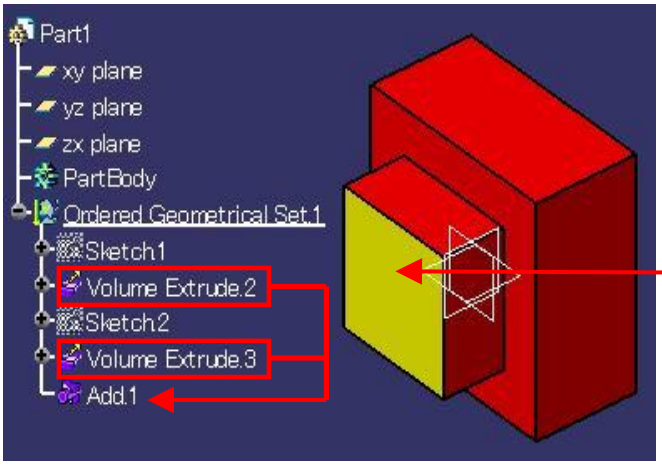
4.3.1. Data



Volume Extrude.2 feature is red.

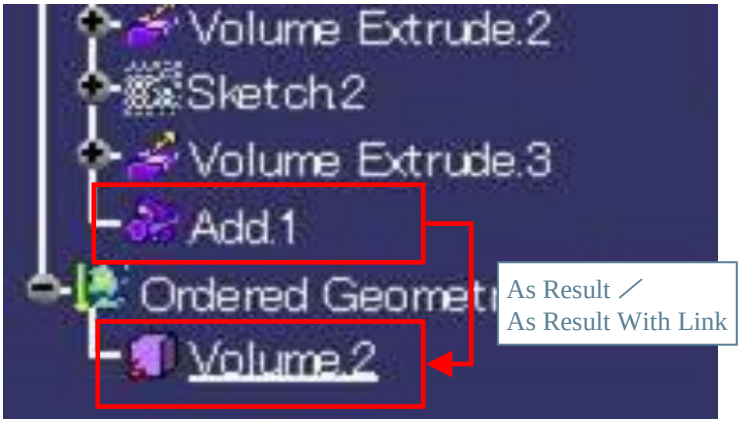


Volume Extrude.3 feature is blue.



One face of Add.1 is yellow.

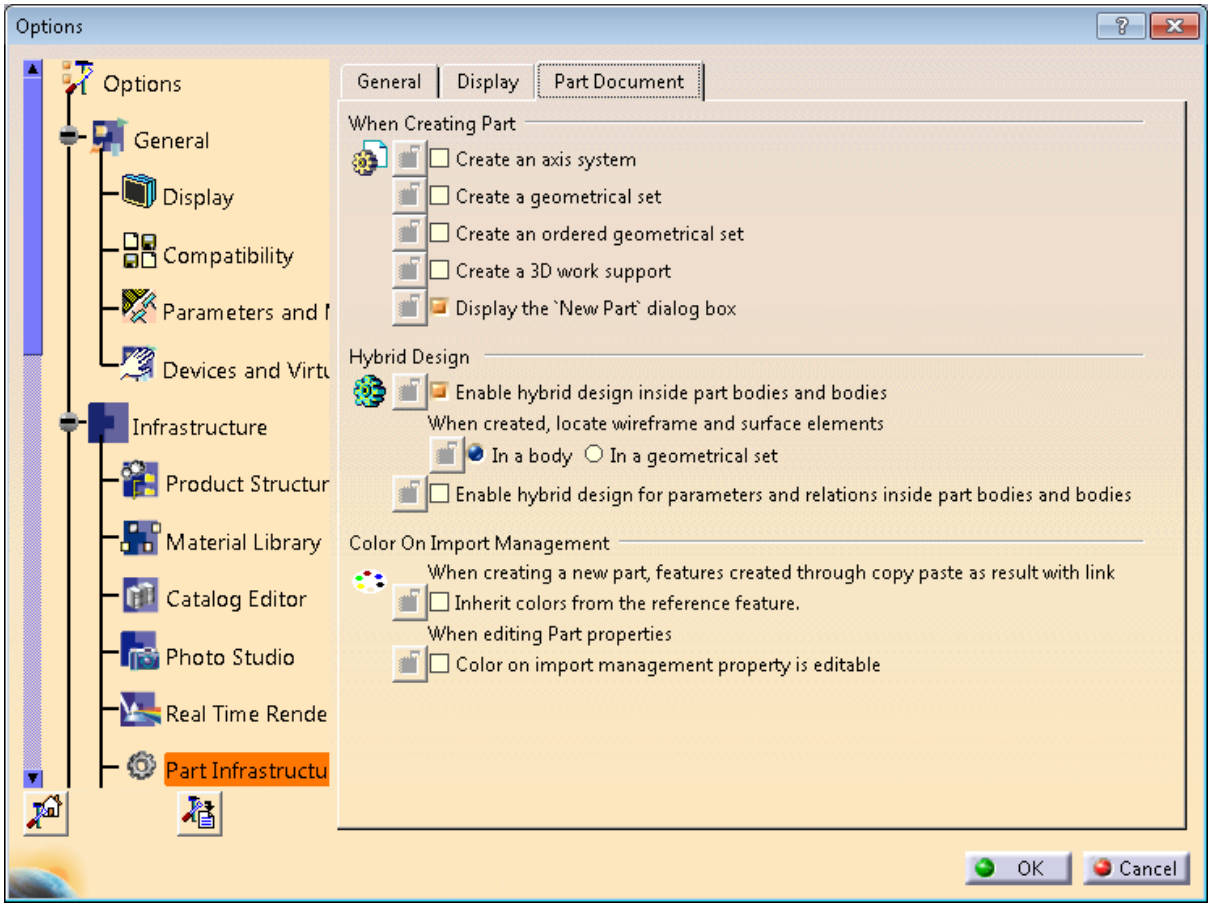
4.3.1. Operation CCP



5. Evolution of behavior

5.1. VR518 / V5R19

5.1.1. Panel



5.1.2. Results

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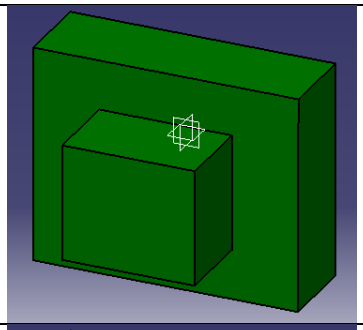
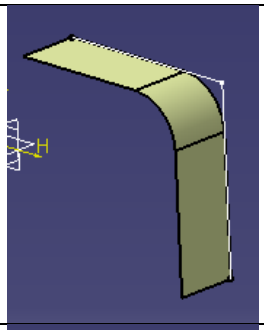
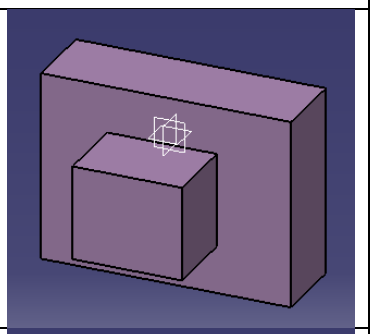
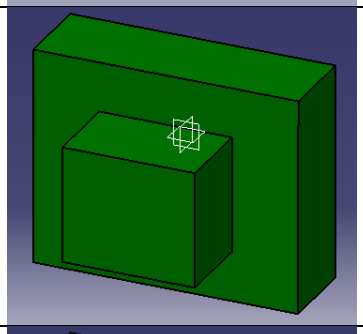
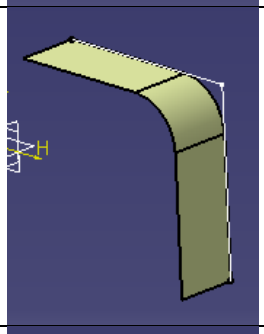
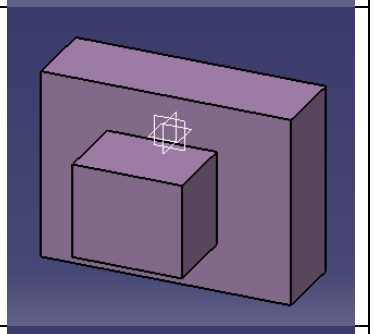
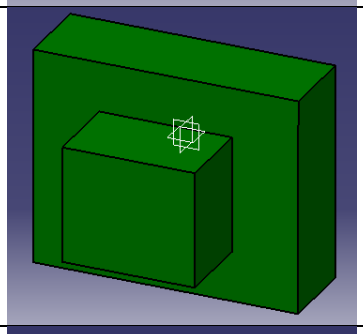
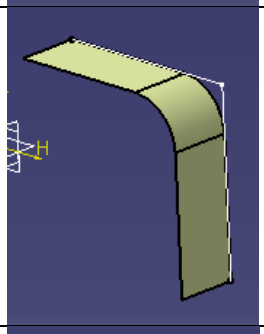
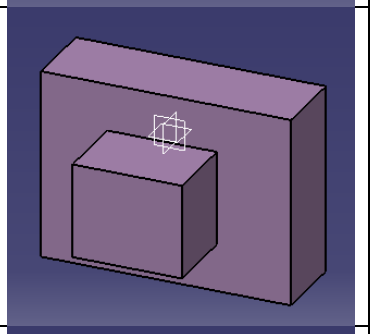
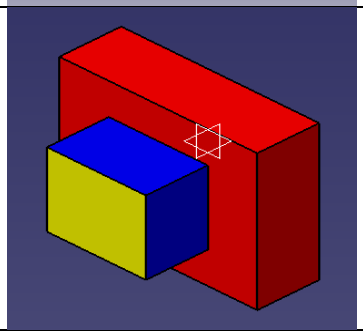
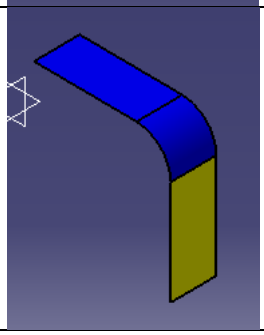
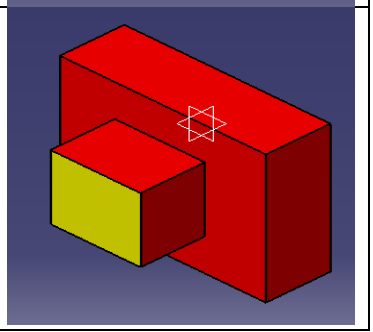
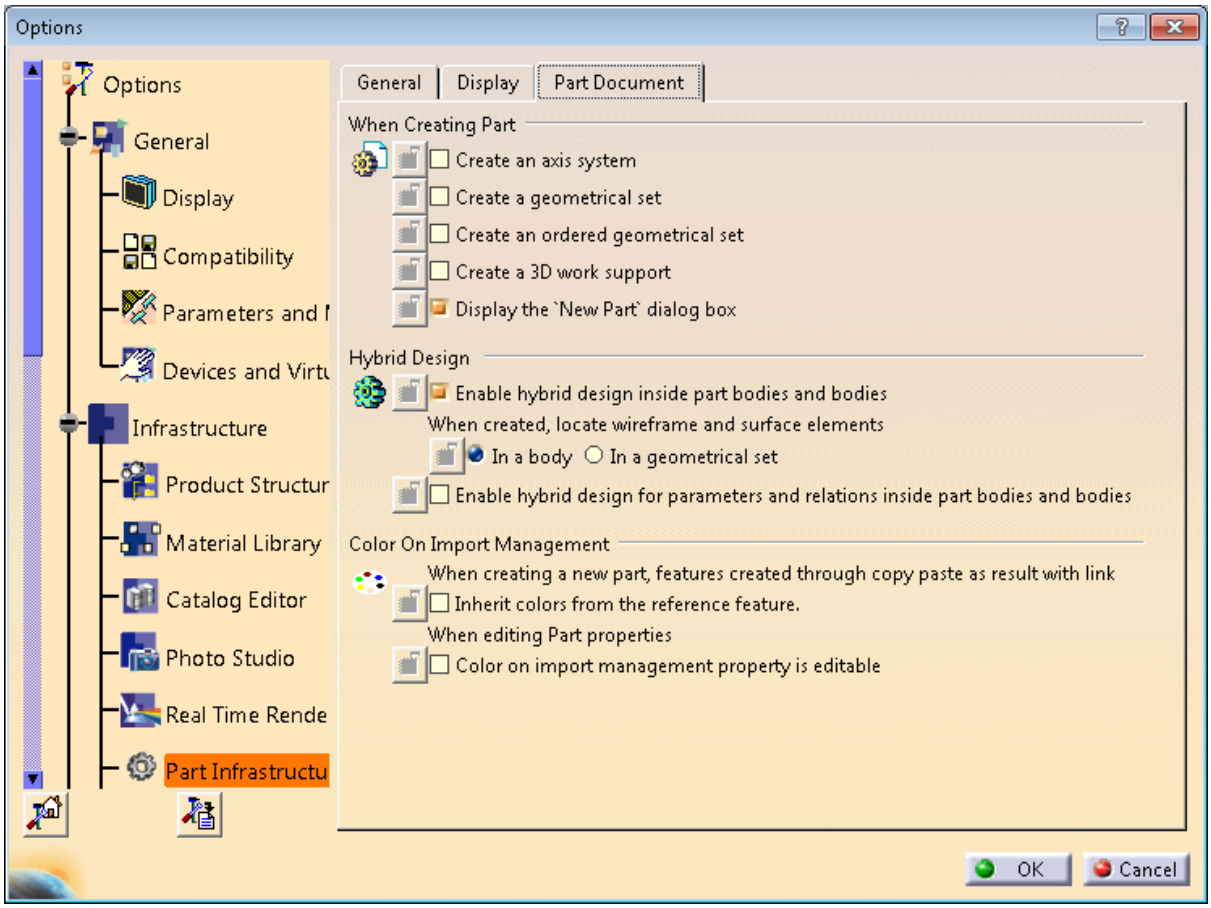
Unchecked	AR			
	ARWL			
Checked	AR			
	ARWL			

5.2. V5R20 / V5R21 / V5-6R2012

5.2.1. Panel



5.2.2. Results

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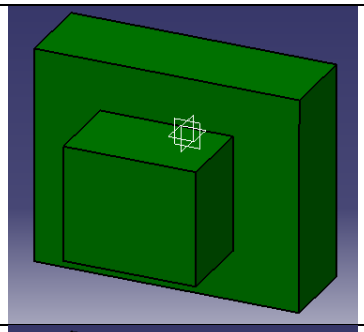
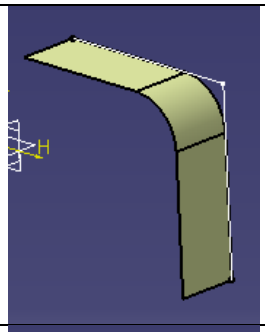
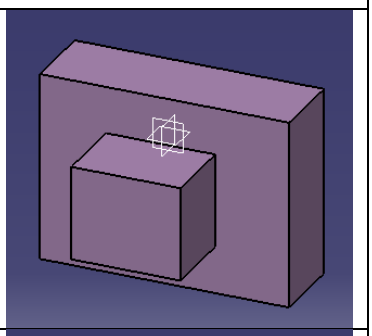
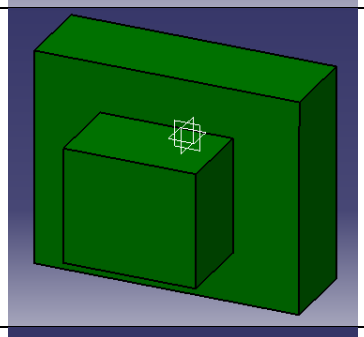
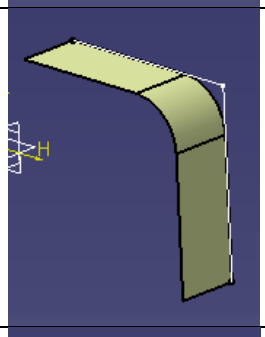
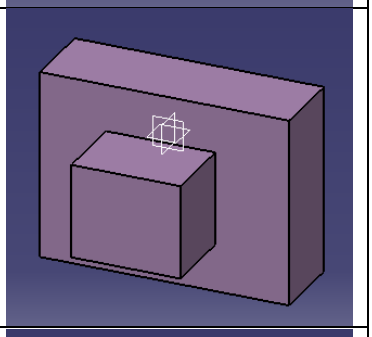
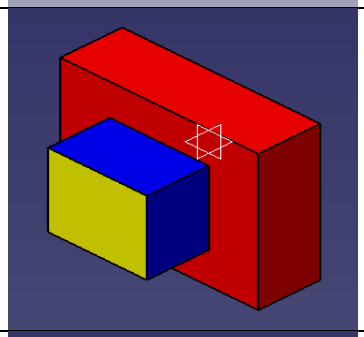
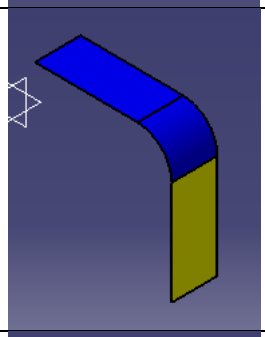
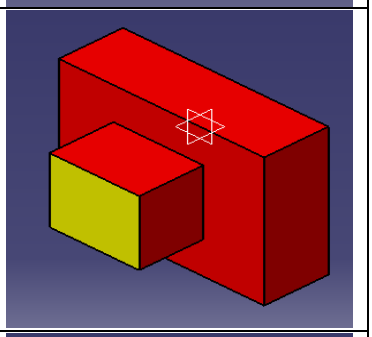
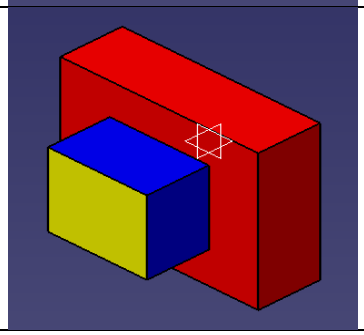
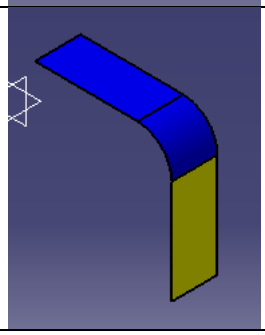
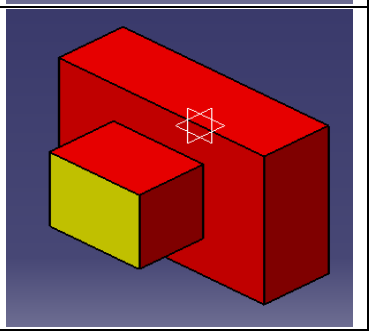
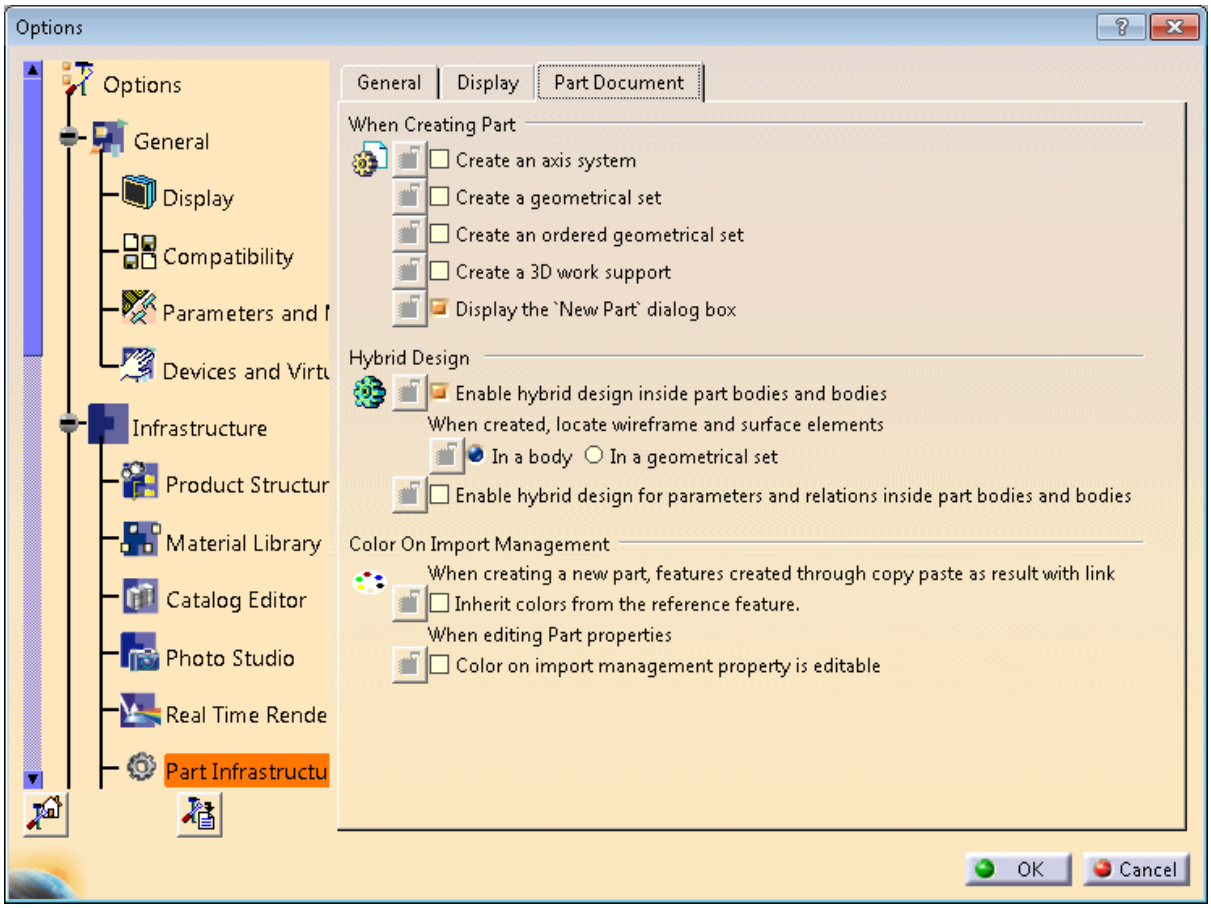
Unchecked	AR			
	ARWL			
Checked	AR			
	ARWL			

5.3. V5-6R2013

5.3.1. Panel available



5.3.2. Results

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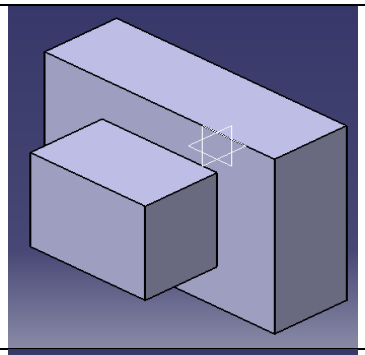
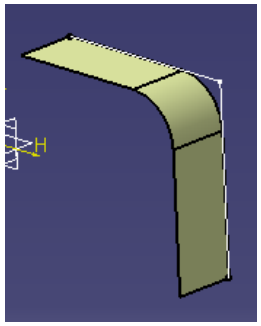
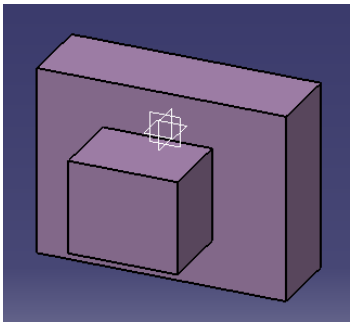
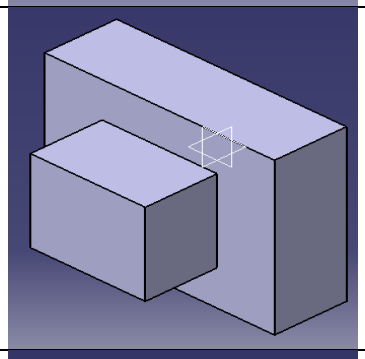
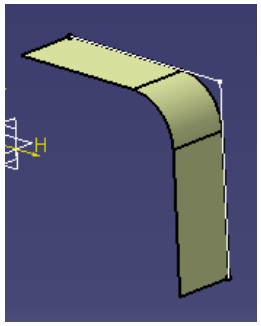
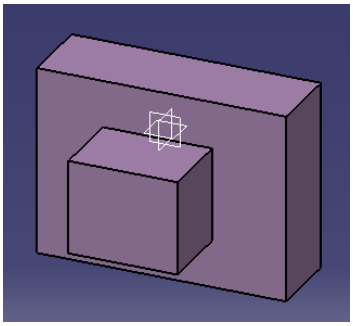
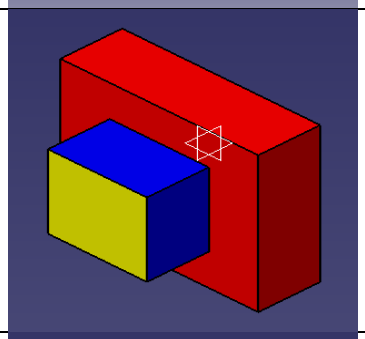
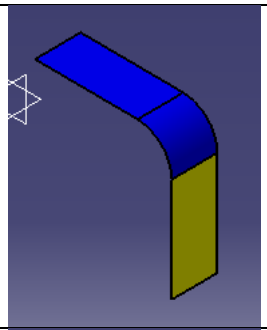
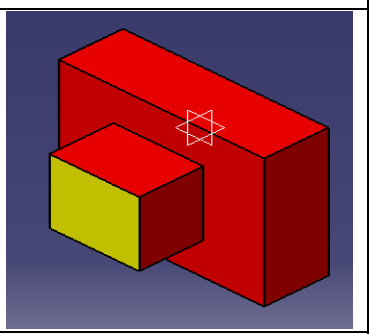
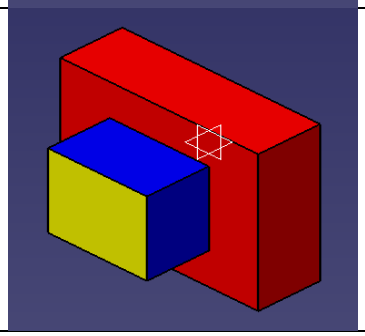
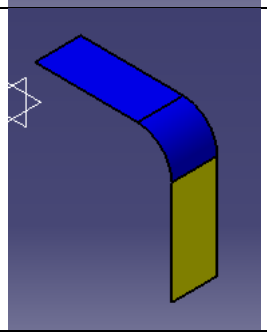
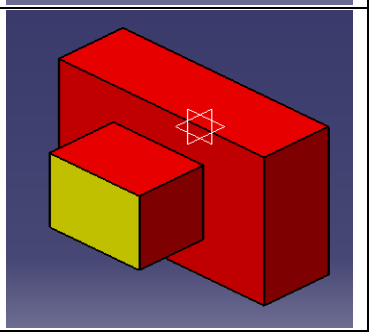
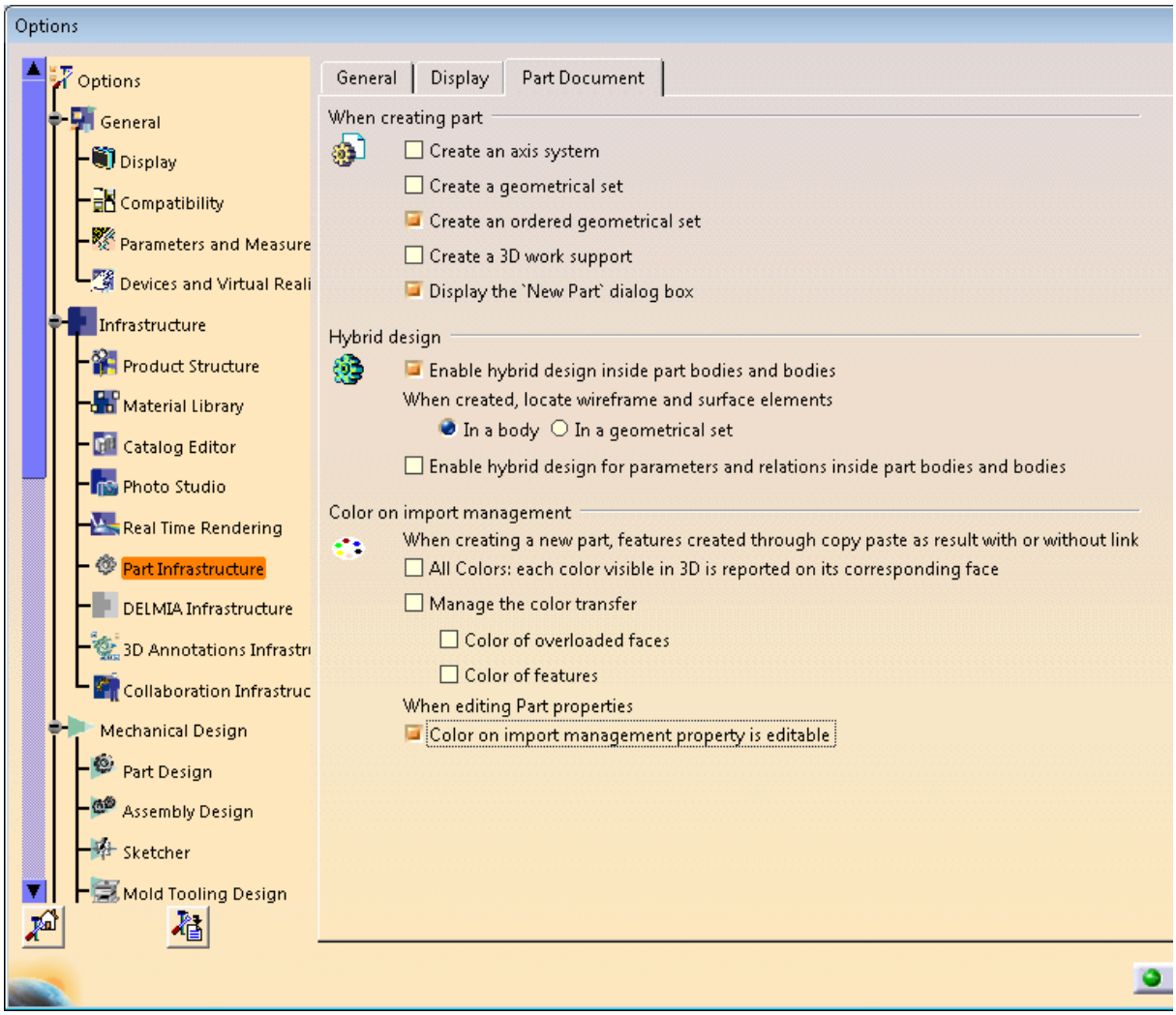
Unchecked	AR			
	ARWL			
Checked	AR			
	ARWL			

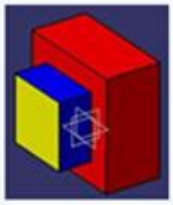
5.4. V5-6R2014 / V5-6R2015

5.4.1. Panel



5.4.2. Results

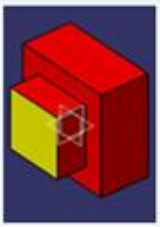
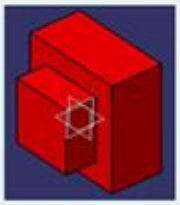
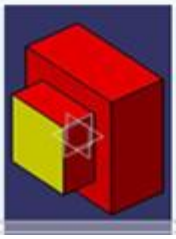
5.4.2.1. Solid

All colors	Feature	Overloaded faces	Result	
OFF	OFF	OFF		No color
ON	OFF	OFF		PartBody color is reported on Body containing import Colors stored on sub elements
OFF	ON	OFF		PartBody color is reported on Body containing import
OFF	OFF	ON		Yellow stored on sub elements
OFF	ON	ON		PartBody color is reported on Body containing import Yellow stored on sub elements

5.4.2.2. Surface

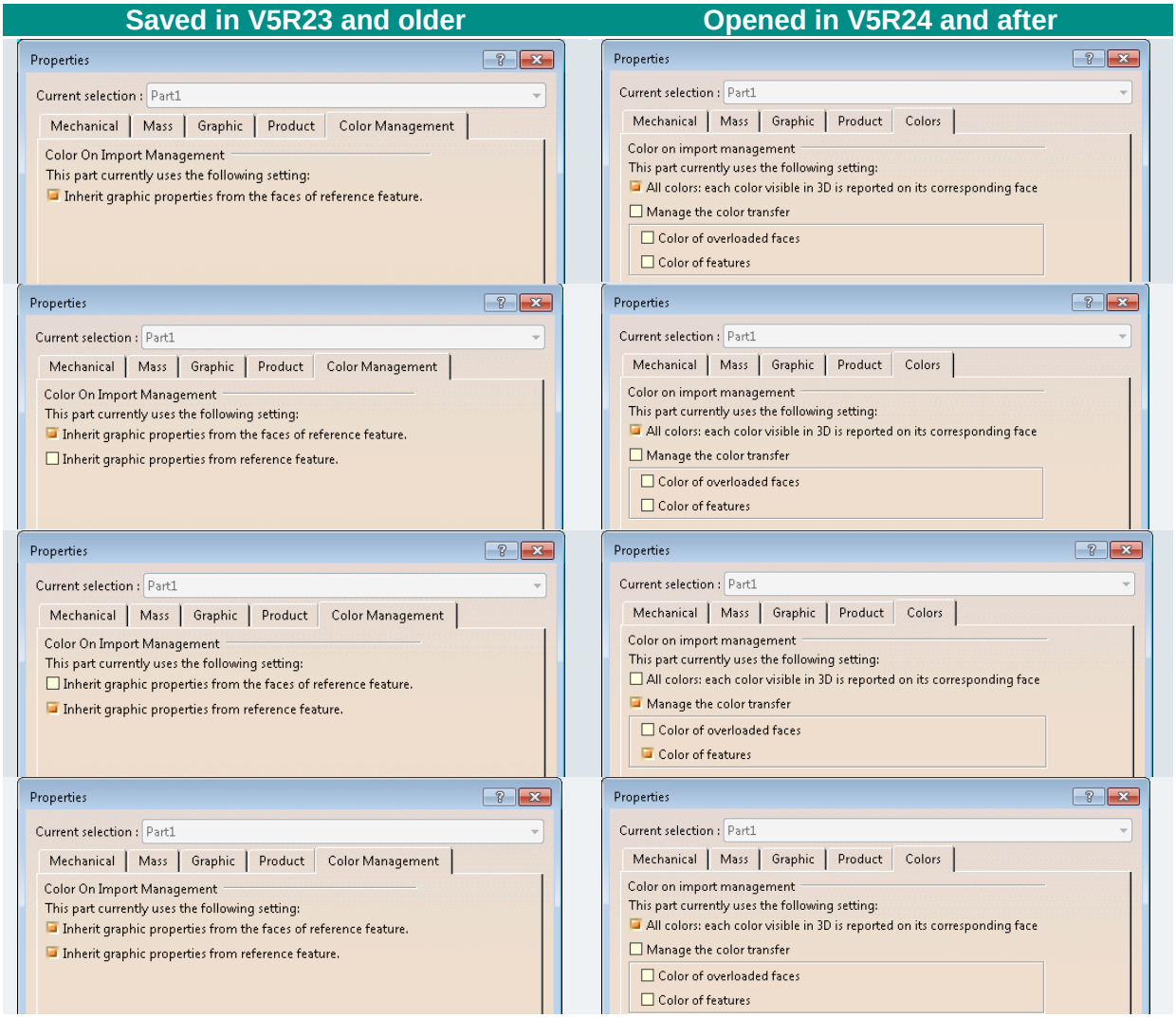
All colors	Feature	Overloaded faces	Result	
OFF	OFF	OFF		No color
ON	OFF	OFF		EdgeFillet.1 color is reported on Surface.2 import Colors stored on sub elements
OFF	ON	OFF		EdgeFillet.1 color is reported on Surface.2 import
OFF	OFF	ON		Yellow stored on sub elements
OFF	ON	ON		EdgeFillet.1 color is reported on Surface.2 import Yellow stored on sub elements

5.4.2.3. Volume

All colors	Feature	Overloaded faces	Result	
OFF	OFF	OFF		No color
ON	OFF	OFF		Add.1 color is reported on Volume.2 import Colors stored on sub elements
OFF	ON	OFF		Add.1 color is reported on Volume.2 import
OFF	OFF	ON		Yellow stored on sub elements
OFF	ON	ON		Add.1 color is reported on Volume.2 import Yellow stored on sub elements

6. Compatibility

Between V5-6R2013 and V5-6R2014, new options have been created. Here is the correspondence between old and new options:



7. Document History

Document Revision	Date	Revised By	Changes/Notes
1.0	1/23/2015	Anne Marie MILLER	Original
1.1	4/14/2015	Florent COQUET	6. Compatibility section added
1.2	21/18/2015	Anshuman WAKANKAR	Modification to the release names and summary section

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Dassault Systèmes
Pier City Shibaura Bldg 10F
3-18-1 Kaigan, Minato-Ku
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Dassault Systèmes
175 Wyman Street
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