**Read more:**

**Background and creation:**

SpaceClaimSMOPlus is based on SpaceClaim Engineer (that is fully integrated) and integrates in addition the Sheet Metal catalCAD expertise gained over 30 years.

SpaceClaim, launched in 2006, is a new highly innovative 3D CAD offering a new CAD technology, named Direct Modeling.

SpaceClaim is the fruit of experts such as Michael Payne and Daniel Dean. These fathers of features based CAD technology have experienced huge global success when they launched Pro / Engineer and SolidWorks.

Now with SpaceClaim, they break the yoke of the historic (tree) of construction in offering a 3D CAD freely accessible by all.

With many advanced mechanical modeling features, they have associated also sheet metal functions of great reputation in order to also answer to the needs of sheet metal workers. To do this, they chose cataCAD, which, with its 30 years of experience in the field of sheet metal CAD and know - how, gave birth to the expert version of Sheet Metal without limit of SpaceClaim software.

**The revolution of 3D philosophy**

SpaceClaim, the software of the eponymous company founded in 2005 by the founders of PTC and SolidWorks provides 3D modeling accessible to all. Indeed, the benefits of 3D design were reserved only to operators trained in the use of CAD. These traditional CAD were often too complex to leave the design offices .... Therefore, the functionality of the software remain inaccessible to the majority of people who contribute directly to the development, industrialization and manufacturing of products designed with CAD. This is often the case for manufacturing methods and services not working on 3D CAD sources but on 2D files inaccessible 3D view (single viewer) 3D.

Therefore, in order that all persons working upstream or downstream of the Design Office to share their ideas on 3D models, SpaceClaim company has developed a new generation of CAD. They created a 3D modeler new technology called "Direct Modeling" that allows modification of a 3D model regardless of how the model was created. To understand what this means, it is necessary to remember that to design a part, traditional 3D modelers (Pro / Engineer, CATIA, SolidWorks, etc.) are based on a sequence of functions (features) that are stacked one another, often represented as a tree, and each successive functionality and form the history of the creation of a 3D model.

Also, to be able to make changes, you must first understand that it was the logic of the construction used in the stacking of these functions. In contrast, with SpaceClaim, no used operations history is preserved, neither the method nor the methodology of construction, having no effect. Only the result counts to obtain the desired geometry. In addition, it adds ease to become familiar with the software. The software uses the latest features of Windows. It takes the Windows graphical interface. More so, the user interface is very simple.

Indeed, with only two icons (pull and move) the whole modeling work, and this change is made and with the appearance of Microsoft Office which he uses the same keyboard shortcut commands. All these points contribute greatly that even a novice to be able to use it and after a few minutes of learning may already be performing the basic functions.

**CAO open and communicating:**

SpaceClaimSMOPlus is dedicated to changing the CAD files from other modelers. These modelers have many native formats (SolidWorks, Pro / Engineer, CATIA v4 and v5, Unigraphics, inventor, Solid Edge, ..). These formats, as well as neutral formats usable with most modelers on the market (STEP, IGES, SAT, XMT) are supported by the software. It is mainly in this sense that direct modeling technology offers the best of the best. The user is no longer constrained by conventional parametric design and can use simple functions presented by the two main modification tools: Pull and Move. The highly adaptive environment design allows you to take control of all aspects of the design and make changes that were not planned in advance. The system interprets in several ways for the user by recognizing what geometry is selected and in what context. Then simply pull the selected geometry to resize unmolested on other non-selected items will automatically follow suit.

By this means the operation to perform is determined without having to go through a multitude of drop-down menus, dialog boxes or clicks by the user. All types of changes, without exception, whether dimensional or structural become possible. Let us remember that this is not the case for other modelers based functions that can not divide for instance a solid in several number of elements.

**Down design:**

Down design, made possible by this new direct modeling technology, is another key point that distinguishes it again compared to other classical CAD software.

The integrated workspace for the components (parts), and sets the design allows several levels, which allows the user to split and merge the components and modify the assembly structure as needed. Thus, a solid model can be divided into as many elements that are necessary for the optimal manufacturing process, while keeping a perfect combination of each element. This is possible because the system is not "trapped" by a history tree construction. With this new generation modeler, user productivity has improved considerably, SpaceClaim enabling rapid design and unparalleled change.

**Unfolding:**

SpaceClaimSMOPlus is the most accurate and complete software of the market to unfold any shapes of sheet metal parts:

When clicking on the "unfold" button SpaceClaimSMOPlus automatically calculates the exact flattening taking into account the properties of the material to be used for the manufacture as well as its thickness but also the technological properties of folding. Obtaining the exact flattening is the result of the combination of an ultra sophisticated algorithm (result of 30 years of experience cataCAD) and the consideration of bending tools (punches and dies) that will be used to folding and enabling to take into account several customizable tables of folding in an Excel file (.csv files).

This customization ensures each user to obtain the accurate flat pattern according to his means of fabricating.

No specific file extension for the fashion plate:

It is also remarkable that SpaceClaimSMOPlus differs from other systems by the use of specific sheet metal design tools that do not generate a sheet metal model that would not be accessible by general mechanical modeling tools of SpaceClaim.

On the contrary, the general tools SpaceClaim become complementary and can be used in any way at any stage of project development.

**Real two-way associativity 2D / 3D:**

This point is particularly interesting because it can meet the non common needs between 3D conception and files documents methods treatments that are usually in 2D.

In other words, the modeling and modification tools remain accessible in 2D. Thus, from a 2D view or a view of the cross section, it is possible to work and directly modify the 3D model. Any change is instant recovery and the associated flattening is immediately available.

In addition, it is also possible to work and to modify directly on the unfolded itself.

**Why to choose SpaceClaimSMOPlus?**

SpaceClaimSMOPlus is the most complete, simple and intuitive sheet metal CAD of the market.

SpaceClaimSMOPlus is the sole limitless sheet metal CAD.

Whether for your design or for your works on imported models go ahead without fear.

Indeed, thanks to the new direct modeling technology, no need to initiate a preliminary study on how we will achieve conception or spend a long time to understand the design of another, trying somehow to decipher the construction tree imported models.

The construction tree is dead. Finished the pain now.

Finally a free design. Finally an open CAD allowing the direct and unlimited use without re-working on all imported models from any CAD.