

A 3D rendering of a car body, likely a sports car, shown in a blue and white color scheme. The car is positioned on the left side of the image, with its front end facing right. The background is a dark blue gradient with a faint wireframe pattern. The car's body is semi-transparent, revealing the internal structure and components. The overall aesthetic is technical and futuristic.

*hyper*CAD[®]_S

©The software was programmed and produced by DAISHIN

*hyper*CAD[®]-S 2022.2 SP4 Readme and update information

 **OPEN MIND**
THE CAM FORCE

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As we constantly develop our products, we reserve the right to make changes without notice.

This readme and update information apply to *hyperCAD*®-S, which is the CAD platform for *hyperMILL*®, *hyperMILL*® SHOP Viewer and *hyperCAD*®-S Viewer.

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With *hyperCAD*®-S, OPEN MIND has developed its own CAD system that is perfectly suited to *hyperMILL*® and is designed to fully meet the requirements of CAM users. Whether users are working with meshes, faces or solids to create precise components and tools – *hyperCAD*®-S always provides the right answer.

Version 2022.2 is marked by customer requests for better usability of the software. It includes many enhancements to make everyday work easier. The new option to select faces within a closed chain of curves and boundaries and the option to set a workplane based on a hole face are particularly worth mentioning.

hyperCAD®-S is CAD for CAM!



1. Release notes

The following information refers to the *hyperCAD®-S* software and further products based on *hyperCAD®-S* such as *hyperMILL®* SHOP Viewer and *hyperCAD®-S* Viewer.

This cumulative update contains all previous cumulative updates for the software plus the following enhancements and hotfixes:

Release 2022.2 SP4

The following issues have been resolved:

Updating recommended

- CAD interfaces
 - **JT-Open**: In the settings, e.g. in **File** → **Open**, the default setting for the option **Filter entities** → **Tessellations** has been changed (back). To load the tessellation additionally, switch on this option as of now.

Release 2022.2 SP3

The following issues have been resolved:

Updating recommended

- **Curves** → **Blending**: If the command is opened with a preselected element of type Rectangle, a crash occurs. That has been corrected.
- CAD interfaces
 - The versions of the CAD formats PTC Creo, Siemens NX, Autodesk® Inventor® and parasolid have been updated.
 - SOLIDWORKS: Certain files could not be imported. That has been corrected.
 - Autodesk® Inventor®: In a part, the wrong color were assigned to faces. That has been corrected.
 - Parasolid: An incorrect conversion result for a file has been corrected.
 - STEP: Wrong UV parameter curves on spherical faces have been corrected.

Release 2022.2 SP2

All CATIA V5 and CATIA V6-Import formats are available for V5-6 R2022.

The following issues have been resolved:

Updating is highly recommended

- CATIA V5 import: An issue fixed with the distribution of control points.
- **Features** → **Linear slot**: The software crashes by deactivation of the option **Multishell solid**. That has been corrected.

Updating recommended

- A licensing issue for third-party API applications within *hyperCAD®-S* has been solved.
- **File** → **Options** → **Electrode options**: In **Reference**, entering multiple characters in **Separator in names** caused the counter after the separator not to increment. This has now been improved. Now the separator can consist of more than one character. For example, not only a _ but also an abbreviation like eLec_ is now possible.
- **Edit** → **Rebuild parametric model**: The last feature of the model (fillet) fails when the model is rebuilt (and/or one of its dimensions is changed). That has been corrected.

Release 2022.2 SP1

The following issues have been resolved:

- **Tire → Set segment parameters:** After creating a curve with the command **Create or update a segment group** and then changing the value **Segment angle** with the command **Set segment parameters** this curve was deleted. That was incorrect and has been corrected.
- **Electrodes → Export reports:** During (AM) export, the MASTER electrode was undesirably output even if only multiple virtual electrodes were selected.
- In *hyperMILL*®-Jobs selected curves were lost after saving and opening a document in case the model consisted of imported STEP data. That was incorrect and has been corrected.

Release 2022.2

4K resolution for monitors is supported.

The *hyperMILL*® VIRTUAL Machining Center software has been expanded to include the commands under **File → Options → Layout manager**.

File

- **Print:** In **Single view** – in the section **Print area**, the section to be printed can also be selected with two dots in the graphics area. In the dialogue, X1, Y1 | X2, Y2 has been changed to **P1 | P2**, where P stands for point.
- **Save as → PDF file:** Workplanes can now also be output in 3D in a *.pdf file. Note that only workplanes with a name are output.

Edit

- **Break:** A progress bar has been added to avoid giving the impression that the software has crashed if the calculation takes longer.

Drafting

- **Points on curve:** In **Inflections**, the option to reverse the direction has been removed, as it is not necessary.

Curves

- **Offset:** The 'Copies' option has been renamed to **Multiple offset**.

Shapes

- **Linear sweep** and **Rotational:** An extrusion for several contours is possible at once. This is especially recommended for parametric modelling based on V-sketches.

Feature

- **Linear protrusion, Linear slot, Rotational protrusion** and **Rotational slot:** An extrusion for several contours is possible at once. This is especially recommended for parametric modelling based on V-sketches.

Workplane

- The 'On hole' command has been renamed to **On axial face / hole**.

hyperCAD-S Electrode

- Several icons and options have been optimised in the EDM converter software.
- ZK Alpha Moduli support: The output has been integrated into the EDM converter software. The menu items in the **Export reports** command have been removed. Certa output for Certa software as middleware is no longer necessary. Reports for the following eroding machine types can currently be converted in the EDM converter software.



Machine types from	Supported programming system	Version	Note
+GF+	AC FORM HMI	From 1.8.0 Build 1966	In development Older versions can also be supported on request.
Exeron	Exoprog	1.6.10	Without rotational electrodes
	Exolution		In development With rotational electrodes
Makino	EDCAM	2020	To use the EDCAM simulation, electrodes and model must be output individually as *.stp models in the EDCAM folder structure. The electrode metadata is output by the EDM converter. The output from the EDM converter can also be processed without the 3D models.
OPS Ingersoll	PowerSPARK Editor	From 1.6.4.0	
	Multiprog	All	
SODIK			On request
Zimmer & Kreim	Alpha Moduli		

hyperMILL

- Call the  VIRTUAL Tool Editor and the  OPEN MIND tool database in **hyperMILL** → **Run**.



2. CAD interfaces

The following CAD models can currently be imported and/or exported (depending on the licence purchased):

Product	File type	Up to version		Import	Export
		Technology up to 31 December 2019	Current technology		
CATIA V4	*.model	4.2.4	4.2.5	x	
	*.exp	4.2.4	4.2.5	x	
CATIA V5	*.CAT-part	6R2018 (R28)	V5-6 R2022	x	
	*.CAT-product	6R2018 (R28)	V5-6 R2022	x	
	*.CGR	Not supported	V5-6 R2022	x	
CATIA V6	*.3dxml	Not supported	V5-6 R2022	x	
PTC Creo Parametric	*.prt *.prt.*	6.0 F000	9	x	
	*.asm *.asm.*	6.0 F000	9	x	
	*.neu	Not supported	9	x	
PTC Creo	*.xpr	6.0	9	x	
	*.xas	6.0	9	x	
Siemens NX	*.prt	NXCR	Siemens NX 2206 (June 2022 major release)	x	
SOLIDWORKS	*.sldprt	2019	2022	x	
	*.sldasm	2019	2022	x	
Autodesk® Inventor®	*.ipt *.iam	2019	2023	x	
Rhinoceros®	*.3dm	Not supported	4, 5, 6, 7	x	



Product	File type	Up to version		Import	Export
		Technology up to 31 December 2019	Current technology		
Solid Edge	*.par	Not supported	V19 - 20, ST - ST10, 2022	x	
	*.asm				
	*.pwd				
	*.psm				
PRC (Product Representation Compact)	*.prc	Not supported	All versions	x	
Parasolid	*.x_t	31	34.1	x	
	*.x_b	31	34.1	x	
JT-Open	*.jt	10.2	10.6	x	
IGES	*.igs	5.2, 5.3	5.1, 5.2, 5.3	x	
	*.iges	5.3	5.3		x
STEP	*.stp, *.step	AP 203	AP 203 E1/E2 ^a	x	
		AP 214	AP 214 ^b		
		AP 242	AP 242 ^c		
		AP 214	AP 214		x
AutoCAD	*.dwg	2018 (AC1032)	2019	x	
	*.dxf	2013-2017 (AC1027)	2019		x
Point clouds	*.pt, *.asc *.xyz *.txt	No version	No version	x	
	*.pt				x
Polygon mesh	*.stl	No version	No version	x	x
	*.stla				
	*.stlb				
3MF Reader (3D Manufacturing Format)	*.3mf	Not supported	1.2.3	x	
ACIS	*.sat	Not supported	2021 1.0	x	
	*.sab				



Product	File type	Up to version		Import	Export
		Technology up to 31 December 2019	Current technology		
Wavefront OBJ	* .obj	Not supported	All versions	x	

^a(ISO 10303-203) "Configuration controlled 3D design of mechanical parts and assemblies"

^b(ISO 10303-214) "Core data for automotive mechanical design processes"

^c(ISO 10303-242) „Managed model-based 3D engineering“

New commands and troubleshooting

CATIA V5: Datum planes can be read in. To do this, switch on when opening in the **Settings** in **Filter entities**.

SOLIDWORKS: Adopt all coordinate systems as workplanes. To do this, enable the **Axis systems** property when opening in the **Settings** in **Filter entities**.



3. Extract from the documentation

Information on new commands and additions, as an extract from the software documentation:

User interface

Start screen

In the 'Homescreen' start screen, current information on *hyperMILL*® and *hyperCAD*®-S is offered in the news area. A document can be opened or a new document can be created – as with **Open** and **New**. The most recently used documents are displayed.

The font size of the news text can be changed using **CTRL** and the scroll wheel. The start screen can be switched on and off using the keyboard shortcut **ALT+h**. Use **+** or **x** to show or hide the news area. The news area is not displayed if there is no news in the selected language or no access to the Internet is available. Press **F5** to refresh the start screen.

Tabs

Info

In the case of warnings, the following commands can be called via the context menu – if justified in terms of content. To do this, right-click the warning.

Isolate entities in model structure for this warning: On the **Model** tab, the search is filled in so that only entities relating to this message are displayed.

Isolate entities in model structure for all warnings: On the **Model** tab, the search is filled in so that the relevant entities of all messages are displayed.

Data interfaces

Direct interfaces

Options

To display the PMI, the 'MyriadCAD' font is required as the standard font in Windows. Install the font as administrator for all users. The MyriadCAD.otf file is located in C:\Program Files\OPEN MIND\hyperCAD-S\[Version]\bin\converters\cad interfaces\[Version]\resource\Font.

This font can be changed in the [Options \[9\]](#) option of the settings when opening via a direct interface.

Table 1. Options for opening data via a direct interface

Property	Description
Assembly conversion mode	Select parts: In a dialogue [9] , select from a list which individual parts are to be imported and which are not to be imported. Mark the individual parts to be imported in the list.

Property	Description
PMI font	Replace font: Assign a different font for product and manufacturing information (PMI), for example, to fit text into its border if the standard 'Myriad-CAD' font proves to be too wide. Font: Select a font.

Select individual parts for assembly conversion method

Filter the complete list of all individual parts. To do this, enter the components of the names of the required individual parts as a character string.

Narrow down the result further using:

- **Case sensitive:** Take upper and lower case into account when filtering.
- **Starts with:** The character string should be at the beginning of the individual part name.

Limit the display using:

- **Select / deselect all listed parts:** Toggle the selection.
- **Show selected only:** Only lists the selected individual parts.

Select the filter result using:

- **Select all filtered:** All filtered individual parts are selected for import.
- **Deselect all filtered:** Removes all filtered, selected individual parts from the selection.

Close the dialogue using the X button in the dialogue title bar to accept the selected individual parts and continue the process of importing them.

Select and snap

Select entities

From curves loop



Select entities within a closed chain of curves.

Select → From curves loop

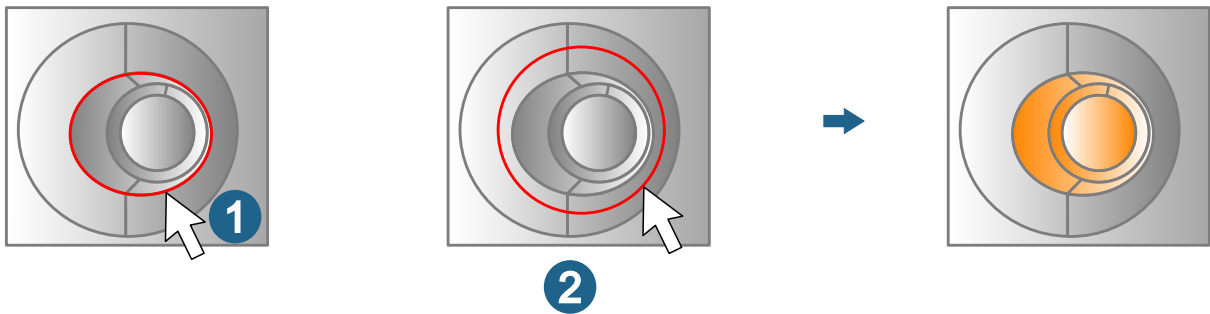
2022.2

Select entities within a closed chain of curves. All inner entities are marked. The chain can consist of 2D or 3D curves or boundaries. The viewing direction serves as a reference for projecting the chain onto the entities.

Curves: Select a chain of curves along a given shape or outside (for example, ellipse) ①.

Completely inside: The option allows you to decide whether the entities must lie completely within the chain or may also overlap the chain. If the option is selected, only entities that lie completely within are marked ②.

Populate: Refresh the preview of the selected entities.



Visible entities from curves loop



Select visible entities within a closed chain of curves.

Select → Visible entities from curves loop

2022.2

Select visible entities within a closed chain of curves. All visible inner entities are marked. The chain can consist of 2D or 3D curves or boundaries. The viewing direction serves as a reference for the visibility and projecting the chain onto the entities.

Curve: Select a chain of curves along a given shape or outside (for example, ellipse).

Completely inside: The option allows you to decide whether the entities must lie completely within the chain or may also overlap the chain. If the option is selected, only entities that lie completely within are marked.

Populate: Refresh the preview of the selected entities.

Workplane

Create workplane

On axial face / hole



Create a workplane on a hole.

2022.1

Workplane → On axial face / hole

Face

Face: Select a face of the hole.

Position: Select the position of the workplane at the upper (**Start parameter**) or lower edge (**End parameter**) of the selected face.

Edit and modify

Edit

Spreadsheet



Manage and calculate variables.

Edit → Spreadsheet

Import data

Update link

Update imported data of permanently linked Excel files.



A spreadsheet with an external link cannot be updated or changed if the Excel file is open. Close the Excel file or release the Excel workbook for collaboration. The Excel file must be opened via the share link. Only then can collaboration take place during processing.

Points, curves and faces

Drafting

Points on curve



Generate one or more points on a curve, boundary or edge.

Drafting → Points on curve

Generate one or more points on a curve, boundary or edge.

NURBS data

Insert points at characteristic positions of a NURBS curve.

Spans: Create points at arc transitions.

Control points: Create points at the control point positions of the NURBS curve.

Cusps: Insert points at G0 positions.

Curves

Project



Project curves onto shapes or onto a plane.

Curves → Project

More options

Keep original: The initial curves are not removed.

Shapes

Offset



Create faces with an offset from existing faces.

Shapes → Offset

Multiple offset

Enter the number of **Instances**.



Solids, features and meshes

Features

Pattern



Multiply existing CAD features or solids to form a determining pattern and modify the pattern.

Solids

Features → Pattern

Select

Fast mode: Choose between a quickly generated pattern feature and a subsequently changeable pattern feature:

- **Static modelling:** Do not use Fast mode if one of the copies or the base feature could be disconnected, moved or redefined. Even if copies or the base feature itself is removed from the pattern feature, the pattern feature can still be changed. Use Fast mode when many copies are created within the pattern feature or when no changes need to be made to the initially selected entity. The mode is faster, but a change would cause the pattern to break.
- **Parametric modelling:** A pattern feature is always calculated in Fast mode. The option is greyed out and inactive in the user interface.

NC programming

Print documentation

Output PDF

Table 2. Settings for saving a PDF document

Property	Explanation
View size	Create the output in the size of the current graphics area (Yes). Otherwise in width and height (No).
Width (pixel) and Height (pixel)	Create the output in width and height in the specified size.

Appendix

Information for administrators

GetHS.exe for start screen

The GetHS.exe software in C:\Program Files\OPEN MIND\hyperCAD-S\[version]\bin\... downloads the news from the OPEN MIND server to the local workstation to %PROGRAMDATA%\OPEN MIND\homescreeen. To ensure the security of the content, only pure HTML 2.0 code is loaded, without cascading style sheets or Javascript. The static HTML code contains hyperlinks only to the official OPEN MIND website.

During installation, a 'hyperCAD-S homescreeen' task is created in the Windows Task Scheduler, with the help of which the software starts automatically every day and updates the news area.



Press **F5** to refresh the start screen. The software can also be started manually for this purpose. The task can be changed in the Windows Task Scheduler, for example, the time of the update can be adjusted.

The checksum (SHA256) of the file GetHS.exe is as follows:

64B7F2225CBFC2AEB0CD386DA8FAADC5231AC442BEF68C851201399BFAA72C7A

Environment variables

HC_HOMESCREEN_NEWS

Use the HC_HOMESCREEN_NEWS environment variable to switch off the news area of the start screen by setting the value of the variable to 0.

HC_MAX_HOMESCREEN_ENTRIES

The maximum number of recently used documents is set to 20. This can be reduced using the HC_MAX_HOMESCREEN_ENTRIES environment variable. Already saved, longer file lists are shortened. The environment variable can be set to 0 to not display the most recently used documents at all. The names of the most recently used documents are saved in the registry.

HC_NEW_HOME_SCREEN

Switch the start screen on and off using the HC_NEW_HOME_SCREEN environment variable. Set the value of the environment variable to 0 for switching off and 1 for switching on.

HC_HOMESCREEN_LOCALE

Change the language of the start screen using the HC_HOMESCREEN_LOCALE environment variable.

