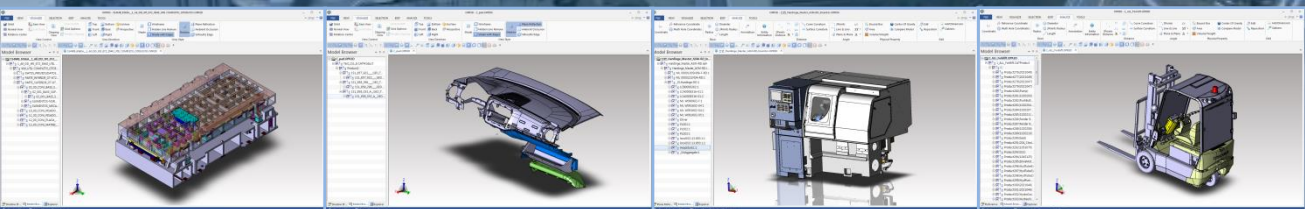


3D & 2D CAD Viewer Engineering Collaboration Solution



From People
By Technology Innovation
To Create New Value

OPR3D Proposal

- Introduction
- Benefits
- Features
- Details
- Comparison
- Costs

OPR3D INDEX

1. Introduction

2. Benefits customer

3. Features of OPR3D-STD

4. Detail features

5. Features of OPR3D-Pro

6. Case of utilization

7. Comparison of introduction

8. Product Type & Pricing

1. Introduction –Ditworks

ABOUT Ditworks

- Established : 9th ,October, 2000
- Address : A-1404, Kabul Great Valley, 60-5 Gasan-Dong, Geumcheon-Gu, Seoul, Korea (zip code:153-801)
- Business Area : OPR3D/ MODView/ Design Center / ECM
- Contact : 02-2106-8989 / sales@ditworks.com
- Homepage : www.opr3dview.com
- Customers : Hyundai Motors, Kia Motors, Sungwoo hitech, Hwashin, Topmetal, Silla Engineering, MATE(India)



HISTORY OF Ditworks

- 2013~Now → Launch brand new OPR3D, 3D/2D CAD viewer, Outstanding performance compared to the price
- 2012~Now → Launch MODView V2012 / V2013, Convenient use, Innovative features, Improve work ability
- 2009~2011 → Launch MODView V2011, Total engineering viewer, Supports all of CAD type
- 2006~2009 → Launch MODView V2008, PDM Solution –Deign Center and iPLM
- 2003~2006 → Launch MODView V4.0, Global License contact with Hyundai / Kia Motors (Domestic / Overseas)
- 2002~2003 → Launch MODView V3.5, Supply contract with Reuault Samsung, MOBIS, Samlip and Mitsubishi
- 2000~2001 → Incorporate DIT, MODView V2.5, Cooperation begins with Hyundai and KIA motors

2. Benefits Customer

Benefits

- Direct read 3D/2D drawings
- Read massive size of files
- Compress massive size of files
- Project and support 2D
- Intuitive and various features
- 3D/2D file conversion
- Fast feedback

Effects

- 3D/2D data share, improve business efficiency and reduced problem ----- 87%
- Work overload and delay elements resolved --- 80%
- Drawing output and reduce delivery /deployment time ----- 83%
- Saving cost of introduction 3D/2D CAD S/W -- 90%
- Technical arrangements with customer / supplier and time reduction ----- 80%
- Decrease Paper drawings ----- 100%

3-1. Features – Read The latest version of 3D/2D

Support various readable file

- OPR3D can read and analyze a variety of 3D/2D CAD Data
- Can be applied in a flexible policy to set the permissions by function



V6 2013 , V5 R23,
V4 4.2.5



2014

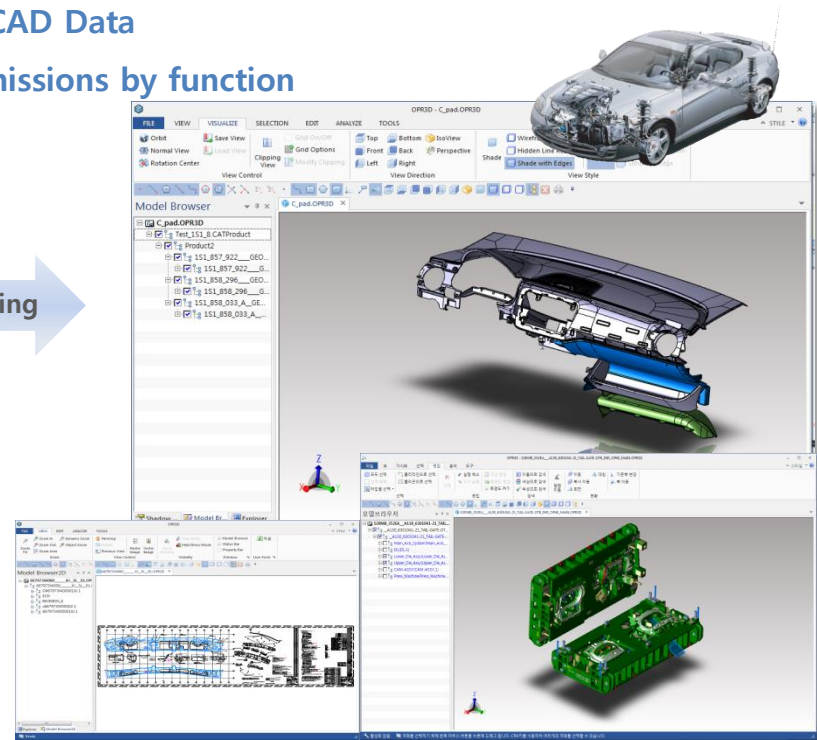
Direct Viewing

SIEMENS NX 9
SOLID EDGE ST6

PTC Creo® 5.0



2014
AUTOCAD



3D/2D Supportable file formats

3D Data: STEP(*.stp), IGES(*.igs), CGR, JT, Parasolid(*.x_t), *.stl, ACIS(*.sat), *.hsf, Rhino, 3DXML, IDES(*.arc,*.pkg), *.prc, *.pdf(3D)

2D Data: CATIA V5/V4, UG NX 2d, cgm, Autocad(*.dwg/*.dxf), HPGL, GL2, Image Files

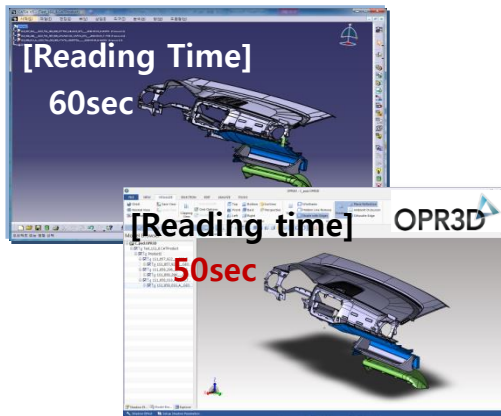
3-2. Features – Fast reading speed of large files

Support fast reading of large files

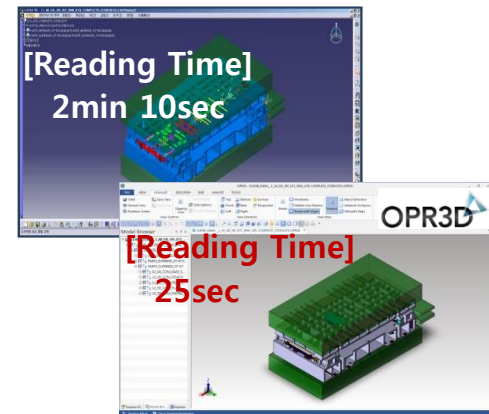
- OPR3D can read and work high-capacity data faster than 3D CAD S/W



[1] file size
: 376MB



[2] file size
: 513MB



UG NX

[3] file size
: 380MB



[4] file size
: 240MB



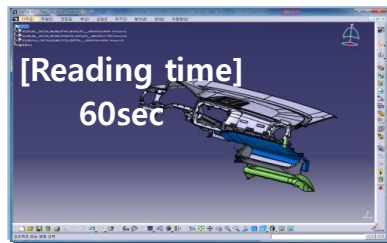
3-3. Features – Support 95% or more file compression

Compression save of large files

- OPR3In the file format of its own large amounts of data, OPR3D a compression save 95% or more

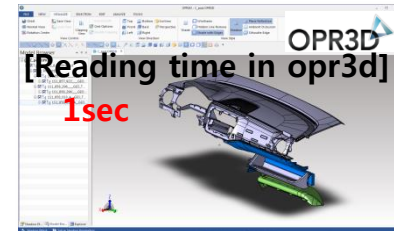


[1] file size
: 376MB

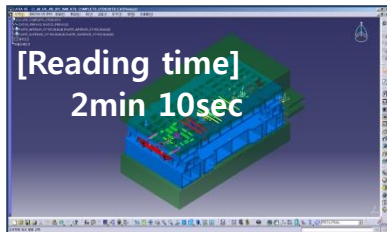


[1] Save as .opr3d

Size: 4.1MB
Time spent: 3sec
Compressibility: 99%



[2] file size
: 513MB

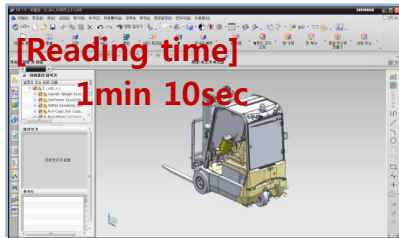


[2] Save as .opr3d

Size: 10MB
Time spent: 8sec
Compressibility: 98%

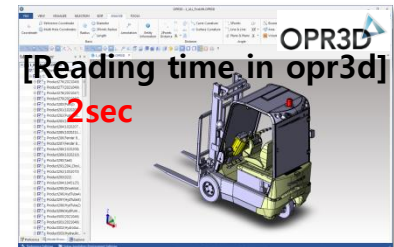


UG NX
[3] file size
: 380MB



[3] Save as .opr3d

Size: 11.8MB
Time spent: 5sec
Compressibility: 97%



3-4. Features – Outstanding compression save feature of .OPR3D

Benefits of saving .opr3d

- .opr3d file can compressed more than 95%, faster read / distribution / sharing security management

Maximum 95% compression

- Read compressed file / ease of sharing

Enhanced Security

- Save as .opr3d and deployment

Easy managing and sharing files

- Stored multiple files in a single file

Operated the same as the original

- Save as original 3D CAD with attributes

Saving your work

- Provide continuity of work and job reusable

[Example:] Original file --> .opr3d file(Compressibility)

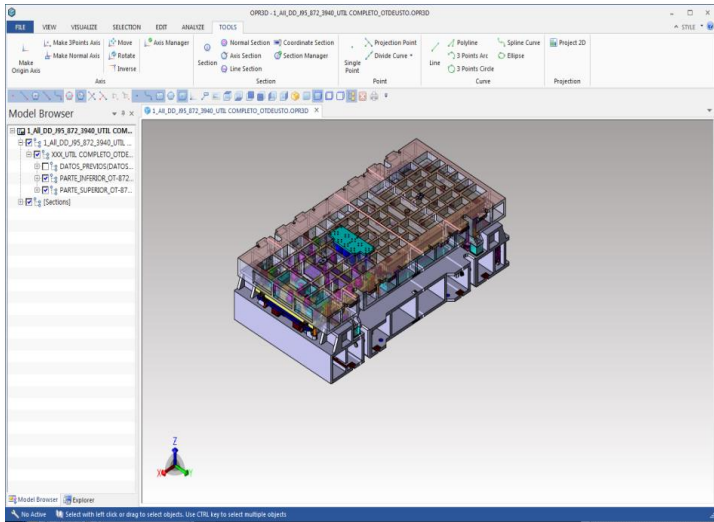


CATIA V5	376MB	-->	4.1MB (99%)
CATIA V5	510MB	-->	10MB (98%)
UG NX 7	380MB	-->	11.8MB (97%)

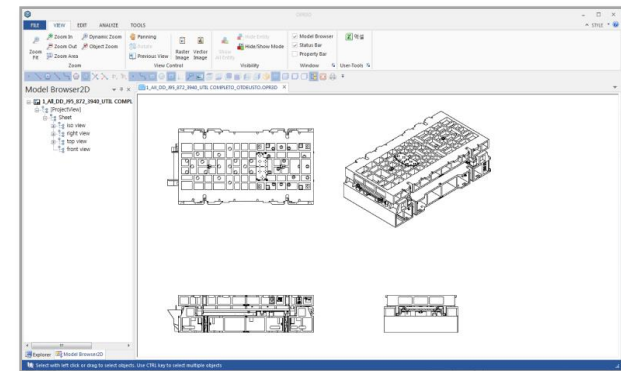
3-5. Features – Completely support 2D Viewer #1

Create drawings with 2D projection and convert to DWG/DXF/PDF

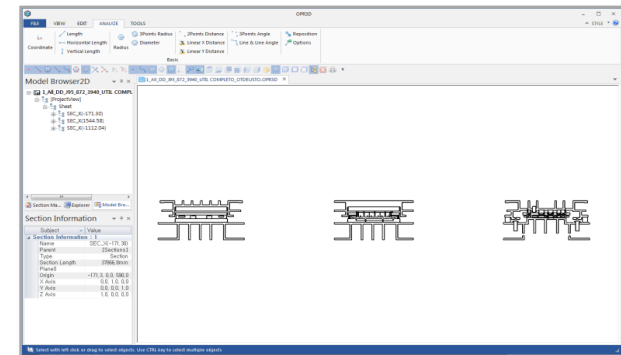
- 2D projection to 3D shape or read CATIA / UG NX 2D data to save as DWG/PDF



2D projection to 3D shape



2D projection of sections

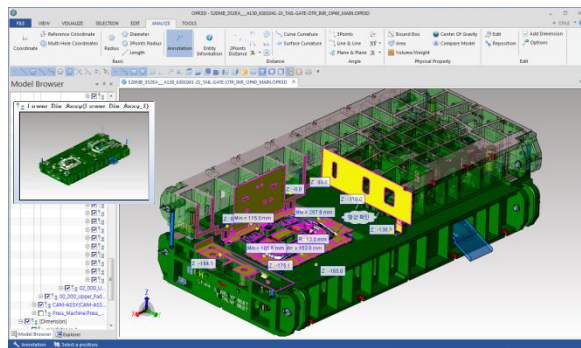


- 3D shape -> 2D projection to generated 3D section
- projected 2D and read CATIA/ UG NX 2D and convert DWG/DXF/PDF
- 2D measuring and mark-up

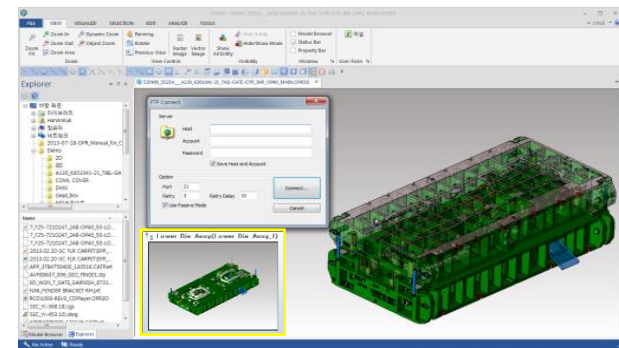
3-6. Features – Convenient analyze features of large files

Quick analyze with various clipping and preview features

- Built-in file explorer : Built-in FTP of window file explorer
- Support preview in file explorer
- Analysis provides convenience of complex assembly with various clipping

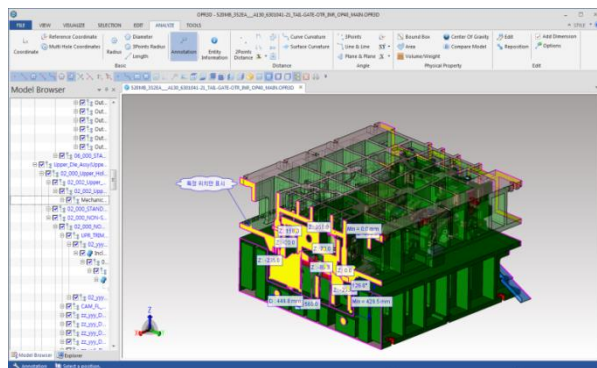


3Plane clipping view

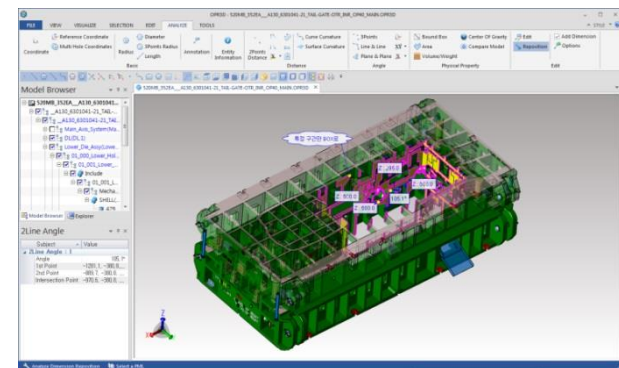


Built-in file explorer and FTP, preview

Dimensions
can be
measured
in the
clipping view
status



Slice clipping view

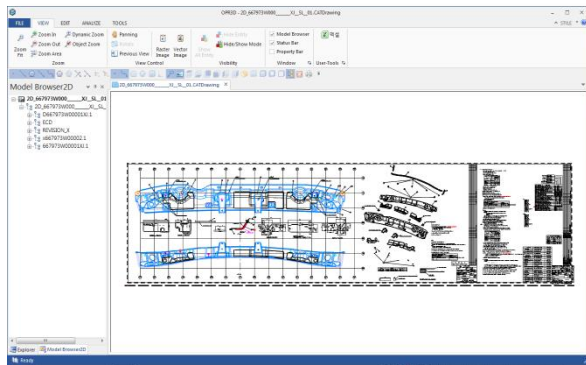


Box clipping view

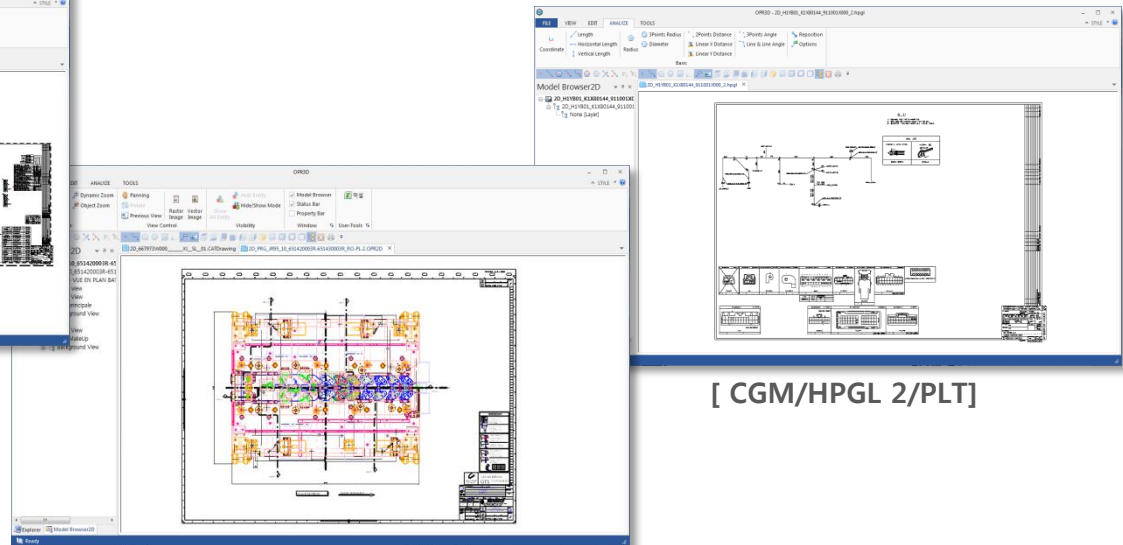
3-7. Features – Completely support 2D Viewer #2

Support CATIA V5/V4, UG NX 2D reading and convert dwg/dxf/pdf

- Direct read CATIA / UG NX 2D without conversion and save as DWG/DXF/PDF
- Direct read CATIA V5/V4, UG NX 2D PRT without conversion and save as DWG/DXF/PDF
- Support multi sheet like UG NX
- Support CGM, HPGL, HPGL/2, PLT reading
- Support 2D work such as Measuring/ Markup/ Image, vector copy/ print



[CATIA V5 CATDrawing]



[UG NX multi sheet PRT]

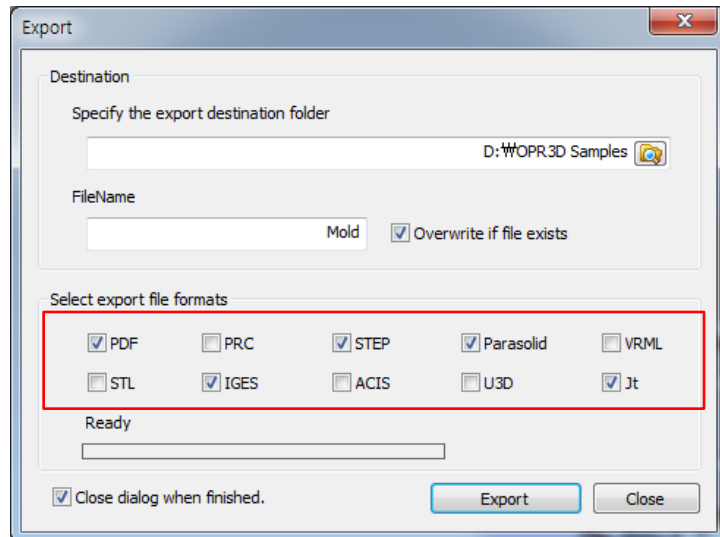
3-8. Features – Provide embedded 3D/2D file conversion feature

Provide embedded 3D/2D file conversion feature

- Multi conversion 3D/2D CAD data to STEP/ IGES/ Parasolid/ JT/ 3D PDF/ STL/ U3D/ DWG/DXF

- Support conversion file formats:
 - 3D conversion : STEP, IGES, Parasolid, JT, 3D PDF, STL, ACIS, U3D, VRML
 - 2D conversion : DWG, DXF, PDF
- Select multiple file format and convert at once
- Provides fast conversion speed and compatibility

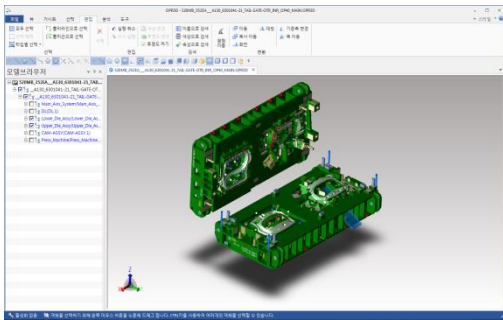
Multiple-choice
and convert
simultaneously



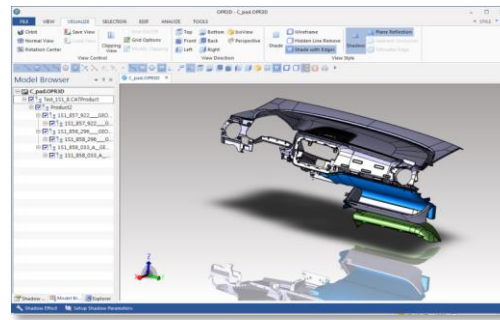
3-9. Features – Various features for 3D/2D data usage

3D/2D Viewer software in the performance of the excellent cost performance

- 3D/2D integration Viewer an excellent solution that has been developed in Korea

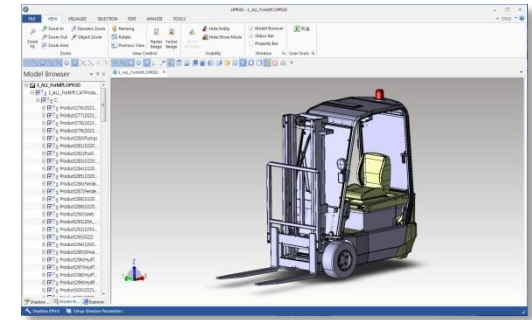


[3D/2D Viewer software in the performance of the excellent cost performance]



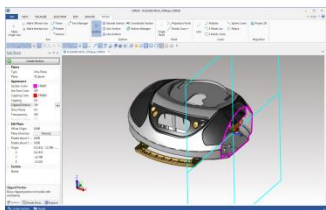
[Powerful file compression function of 95% or more]

(510MB -> 10MB 98% compression)

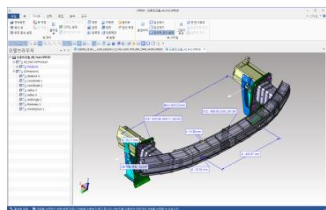


[quickly read large files]

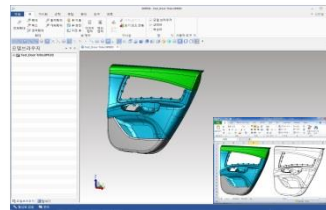
Section



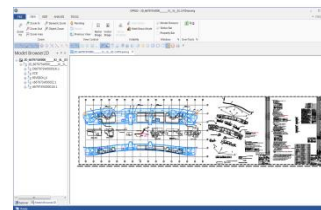
Dimensions



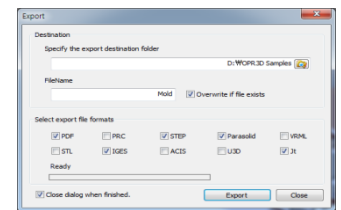
Document



2D Mode

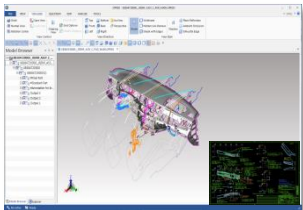


Conversion



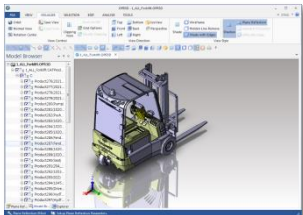
4-1. Detail Features – Read/Assembly/Image

Practice integrated, distributed engineering collaboration tool



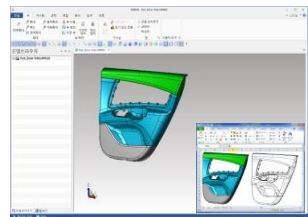
Direct read all type of 3D / 2D CAD native format file

- 3D : CATIA V5/V4, UG NX, Pro-E, SolidWorks, SolidEdge, Inventor, STEP, IGES, Parasolid, CGR, JT, Rhino, 3D PDF, OPR3D, U3D, HSF, 3DXML, ACIS, Google SketchUp(skip), OBJ, WRL...
- 2D : CATIA 2D (CATDrawing, model), UG NX 2D (prt), AutoCAD(DWG / DXF), CGM, HPGL, PLT



Large size file read and compress rate more than 95%

- Faster read large size files than 3D CAD (1min10sec -> 30sec)
- Save files with ".OPR3D", compressing and reading speed will improve more than 95%



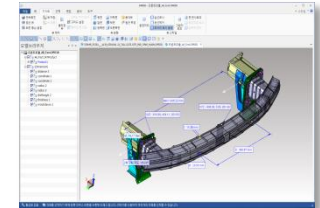
Create image (copy & paste)

- Create image Rapidly by using image copy function
- Support Shading, Vector image, Illustrated image, Hidden line image

4-2. Detail Features – /Dimensions/Analyzing/Hole depth

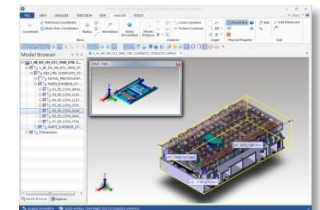
Powerful 3D measurement & dimension

- Accurate 3D measurement & dimension with auto object snaps
- Measure 3D and coordinate, center coordinate, axis reference coordinate, angle, radius, 3-point radius, length, distance of among axis(X/Y/Z)



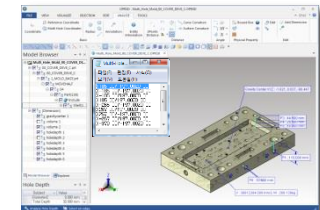
Bounding Box Size & Detail View

- Easy check Bounding box size (width x length x height)
- Simply check Each parts by using "Detail View"



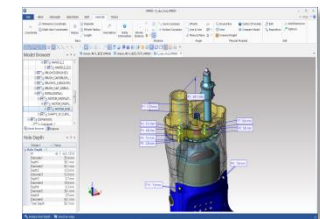
Entity Information

- Measure area, volume and center of gravity of Solid and Surface
- Measure centered coordinate of multiple holes and save it .txt with NC format

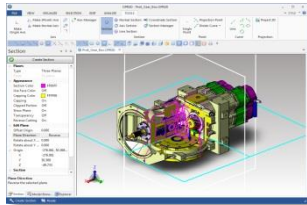


Hole Depth

- One click Measure Hole depth
- Can measure holes in the hole depth

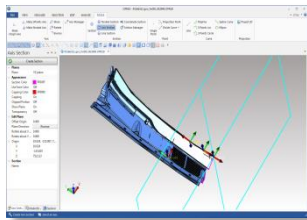


4-3. Detail Features – Section/ Clipping view/ Section projection



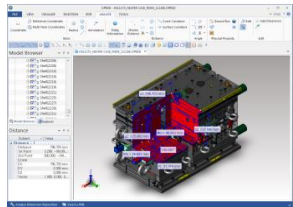
Dynamic Section

- Plane move, Rotate, Reverse, Rotate about axis by using 3 planes sections
- Create Move/Rotate/Reverse axis, section by angle and 2-3 axis section



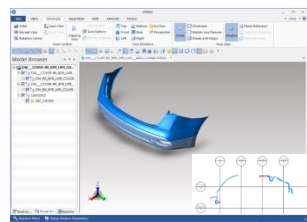
Create Axis and Axis Section

- Create Hole center, Edge-line, Perpendicular and Normal axis, using section work and change origin axis.
- Create axis (Origin axis/ 3point axis/ Normal axis), Modify axis(move/ rotate/ reverse/ axis manager)



Clipping View and Measuring

- Detailed observation and measurement by using clipping view
- Image copy and paste in MS- Office document



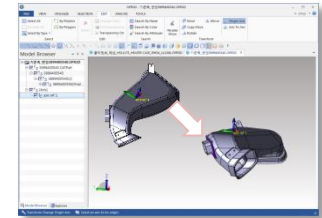
Section 2D Projection

- Project simultaneously all worked cross section
- Select Scale, Rotate, L/R Mirror, Auto creation CAR-Line

4-4. Detail Features – Origin setup/3DExport/Compare Model

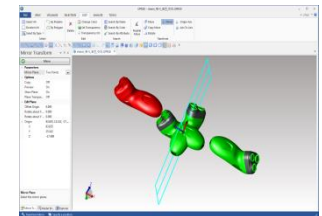
Origin Setup

- Create new axis and set as origin axis (move starting point, rotate)
- Quick reset starting point and direction by selected axis. Setup function as mold



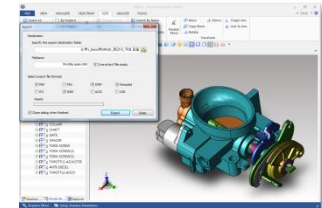
Transform

- 3D transform with Move/Copy/Rotate/Mirror
- Support variety and convenient use 3D shape



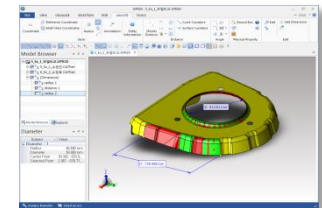
3D Export

- 3D export function is provided (3D Export file type: STEP, Parasolid, IGES, JT, 3D PDF, STL)
- Select multiple file type and convert rapidly in one time

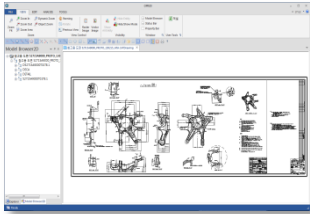


Compare Model (Auto analyze a change of design)

- Auto analyze a change of design and distinguish by color
- Set accuracy, compare outcomes by color

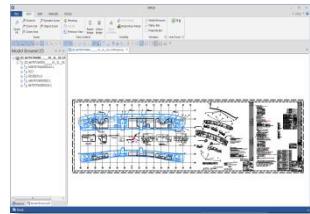


4-5. Detail Features – 3D->2DProjection/Save DWG



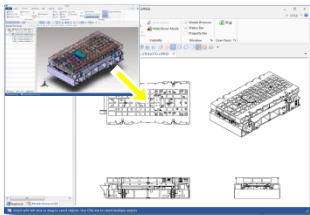
Support variety of 2D data read

- 2D data of 3D CAD : CATIA V5/V4(CATDrawing, model), UG NX 2D (prt)
- 2D data: DWG/DXF, CGM, HPGL, HPGL/2, PLT



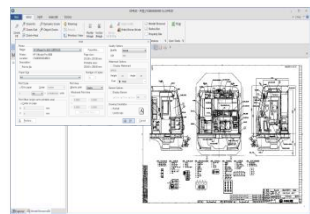
•Support 2D file of CATIA , UG NX and Convert DWG Format

- Direct read CATIA V5/V4 and 2D data of UG NX without conversion
- Convert 2D data to DWG/ DXF/ PDF and can use 2D CAD



3D -> 2D Projection

- Convert 3D to 2D projected view Top/Front/Side/ISO form at one go (create auto car line)
- Hidden line remove, Create auto car-line(Coordinates), scale and rotation value



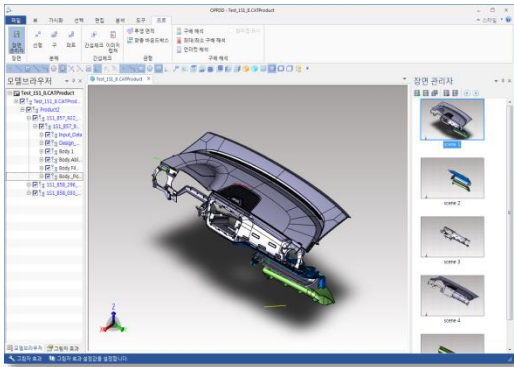
Measurement, Markup, Print by Printer/Plotter scale

- Accurate 2D measuring and support variety of markup feature
- Support various printers/plotter features with scale/1:1 scale

5-1. Features - OPR3D-Pro #1

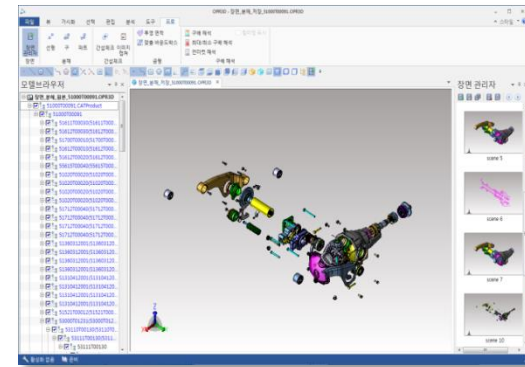
More powerful features, OPR3D-Pro release!

- Provide more powerful features and utilized for large size assembly



Scene Save/Move/Create Video

- Save working status
- Move scene that you want
- Create video file by using saved scenes



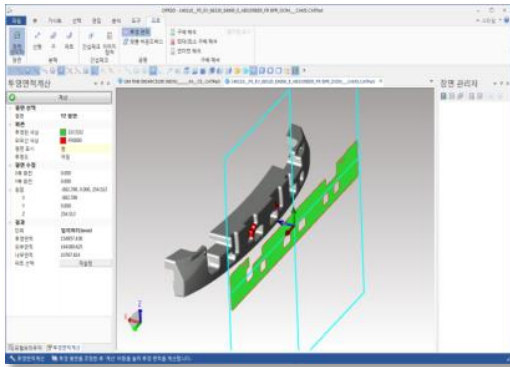
Explode Product

- Explode assembled data at once
- Linear/Sphere/Part type explode
- Explode by the linear/sphere/part and its scenes

5-2. Features - OPR3D-Pro #2

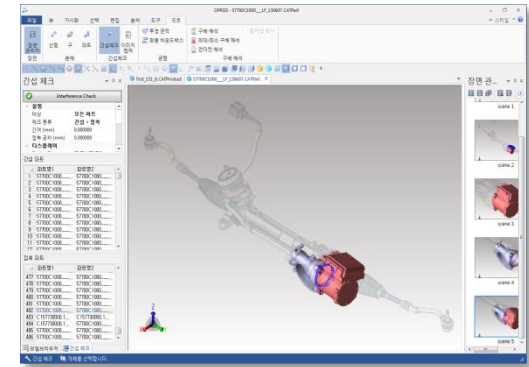
More powerful features, OPR3D-Pro release!

- Provide more powerful features and utilized for large size assembly



Calculate Projection Area

- Calculate projection area with each part
- Save projected shape to 3D file format
- Calculate Projection/Outer/Inner area



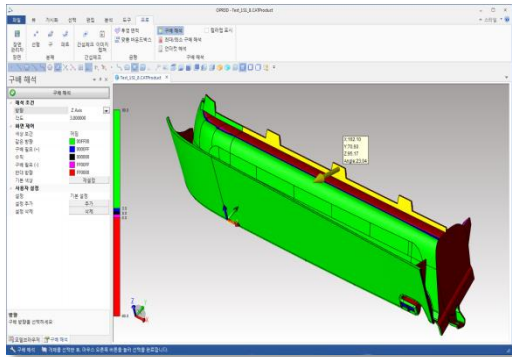
Interference Check

- Automatically check by entering a value in the range between two parts
- Automatic detection contact portion with the interference

5-3. Features - OPR3D-Pro #3

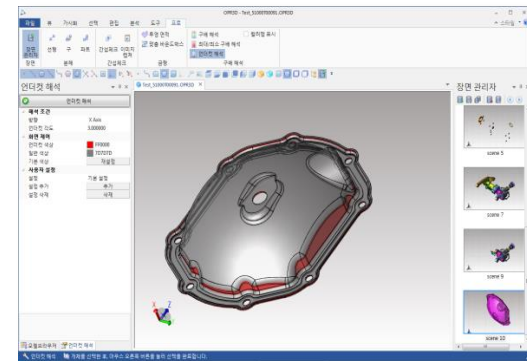
More powerful features, OPR3D-Pro release!

- Provide more powerful features and utilized for large size assembly



Draft Angle Analyze

- Measure draft angle conveniently and it can be display angle by color
- Determine the angle and coordinate immediately by using mouse



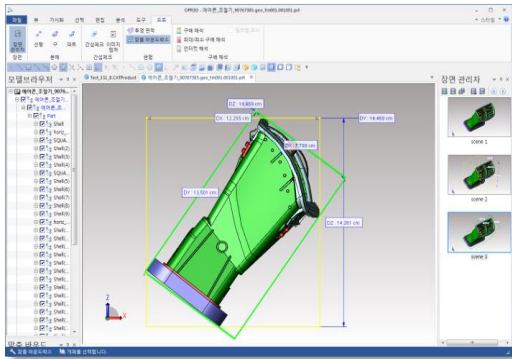
Under Cut

- Under cut is displayed by color
- Determine the angle and coordinate immediately by using mouse

5-4. Features - OPR3D-Pro #4

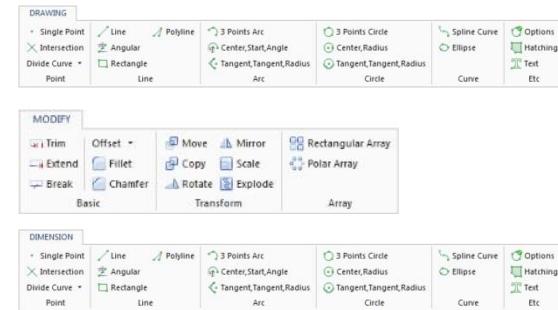
More powerful features, OPR3D-Pro release!

- Provide more powerful features and utilized for large size assembly



Fitting BoundBox

- Simply measure the outer size of the product that is inclined
- Products assembled complex, check outline size of each component

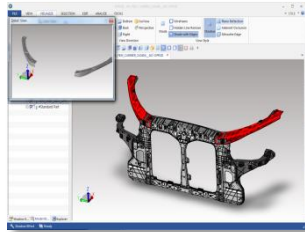


Drawing / Modify in 2D Mode

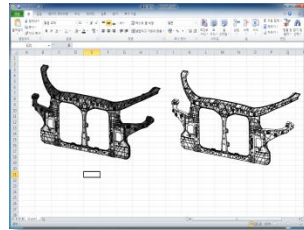
- Support a variety of functions such as 2D drawing / modify and save it as "dwg"
- Can be simple addition and modification work of 2D drawing

6. OPR3D Case of utilization

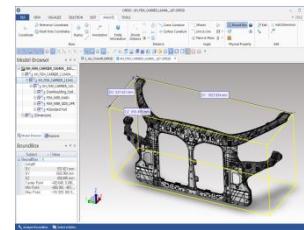
Create Estimate Sheet



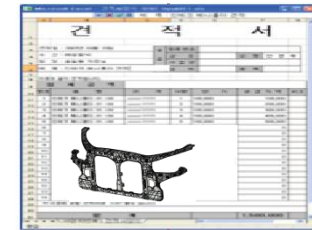
Review 3D form



Copy image

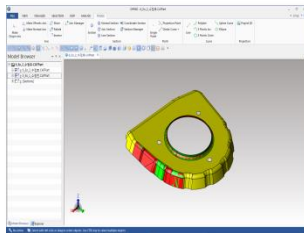


Analyze form,
calculate weight

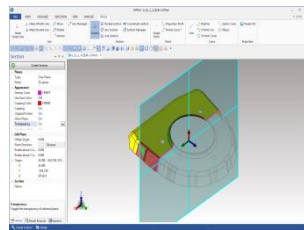


Create estimate sheet

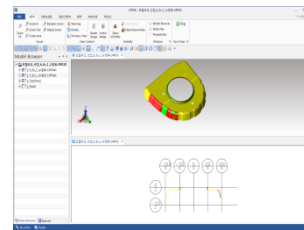
Create ECO Report



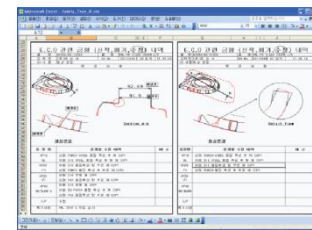
Check modify data



Create section

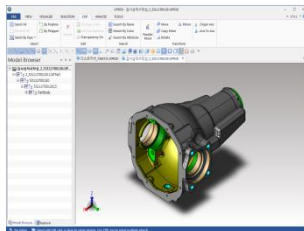


project 2D section

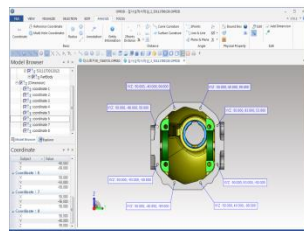


Create ECO report

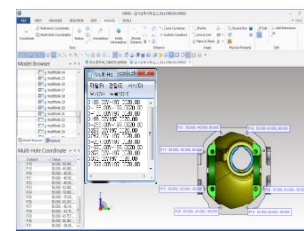
Create Inspection Sheet



Review Data



Measure hole
coordination



save hole
coordination



Create Inspection sheet

7. OPR3D Comparison of introduction

If you use CATIA...

- Used follow-up design process
- Same expense : Can purchase CATIA 1 Copy
- Decline efficiency (limit access)

R&D Center

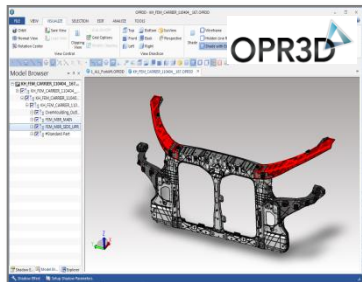
Business outside the design process

CATIA, UG NX, PRO-E
Distribute native 3D/2D data

If you use OPR3D...

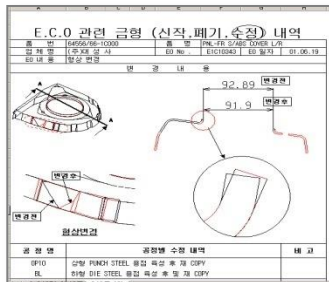
- Used follow-up design process
- Same Expense : Can purchase OPR3D 15 users and concurrent access
- Improve efficiency, easy to use

Cost price/Sales Dept.



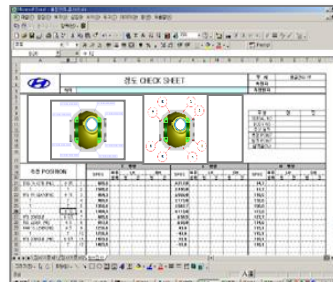
[Measure weight, size]

Development Dept.



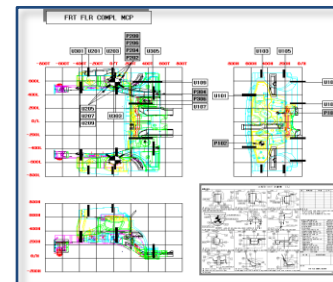
[Create Engineering change order]

Quality control Dept.



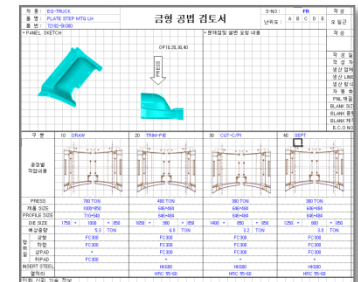
[Create Inspection sheet]

Manufacturing Technology Dept.



[review Line Layout document]

Mold Dept.



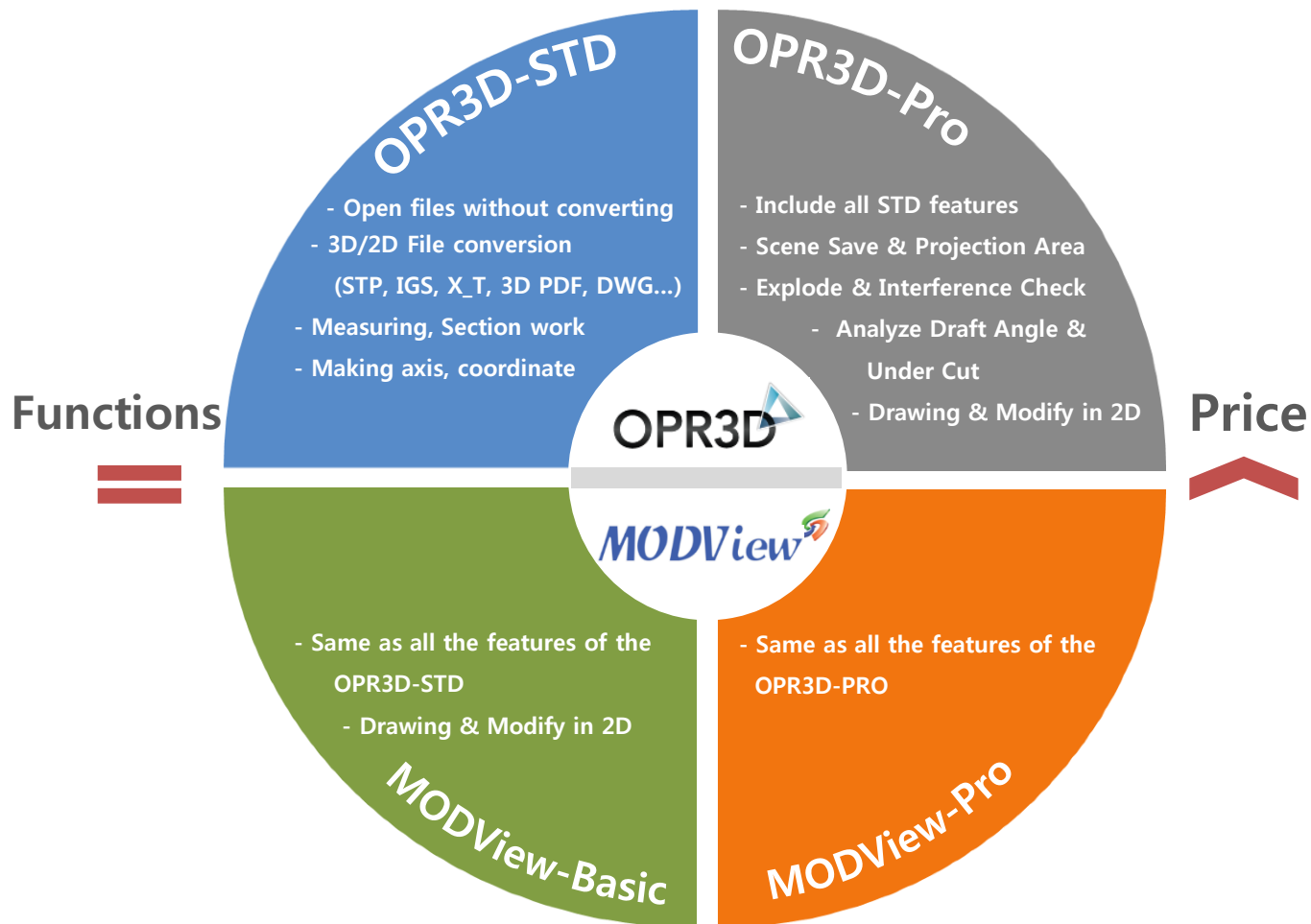
[Create mold method review]

Synergy Effects

	CATIA	OPR3D	Effects
Investment expense(CATIA 1User)	1 User => Access 1 user	15 User => 15 users access at once	10 times ↑
Period of adaptation	30 days	3 days	10 times ↑
Introduction effects	Expensive, difficult to use	Save time and cost, easy to learn	10 times ↑

8. Product Type & Pricing

- Product Type: - USB Lock : for 1 PC
 - Network : Number of concurrent users



Thank You!



Head
Office

D.I.T & EPM Solutions Korea Co.ltd

Contact

82-2-2106-8989

email

sales@ditworks.com

Web

www.opr3dview.com