FUJITSU

Overview of Service / Solution
FUJITSU Manufacturing Industry Solution FJVPS

Virtual Product Simulator
The global standards tool of production preparations

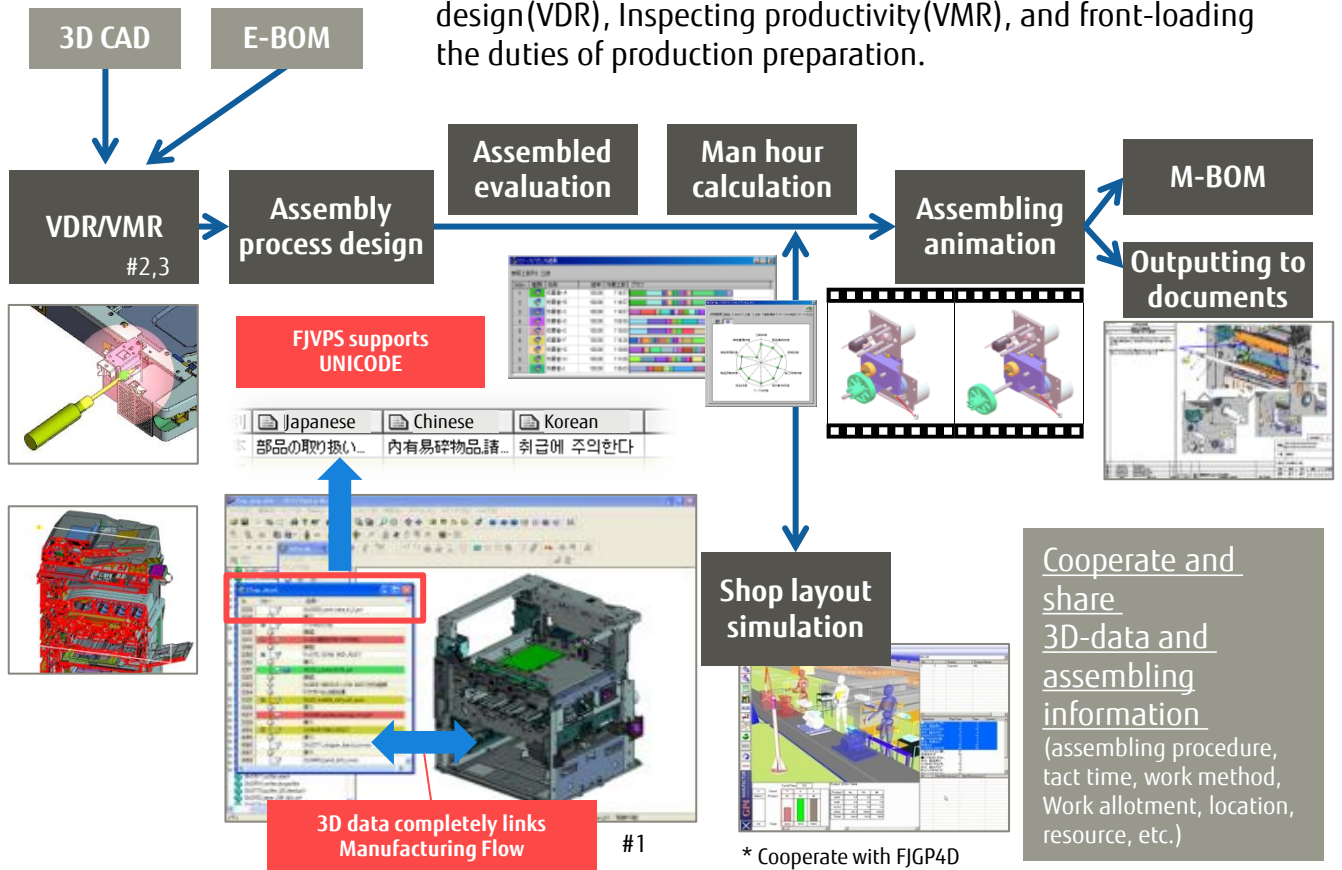
FJVPS

- What is FJVPS?
- Customers Benefits
- Why Fujitsu?
- Case Study
- Module functions

What is FJVPS?

Digital production preparation

Design process of assembling using 3D-CAD data, Inspecting design(VDR), Inspecting productivity(VMR), and front-loading the duties of production preparation.

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3D CAD    E-BOM
    ↓  ↙
VDR/VMR  →  Assembly    Assembled    Man hour              Assembling  →  M-BOM
  #2,3      process    evaluation   calculation            animation
            design                                                    →  Outputting to
                                                                         documents
```

FJVPS supports UNICODE

Japanese	Chinese	Korean
部品の取り扱い…	内有易碎物品諸…	취급에 주의한다

3D data completely links Manufacturing Flow #1

Shop layout simulation

* Cooperate with FJGP4D

Cooperate and share 3D-data and assembling information
(assembling procedure, tact time, work method, Work allotment, location, resource, etc.)

#1: Data courtesy of: KYOCERA Document Solutions Inc.
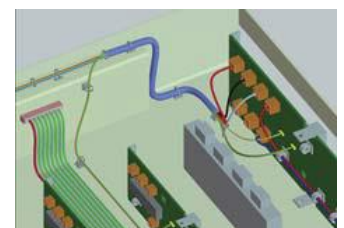#2 : Virtual Design Review #3 : Virtual Manufacturing review

Customer Benefits

FJVPS realizes, improvement of quality and production time of the early period of mass production as well as early improvement with design quality.
The simple operation that even a CAD inexperienced person is usable.

Effect case by FJVPS

Q: Quality improvement

- 50-80% of the design error was detected on a virtual prototype beforehand.
- The remaining defect item concerning assembly vanished before it approved.
- The drawing change rate after approval became 1/6.
- Defective assembly was able to be reduced to 1/5 in 1.5 years.
- The assembly trouble 80% reduction that was the initial goal was achieved in four years.

C: Productivity enhancement and cost reduction

- The start-up period of the prototype was able to be adjusted to 1/15.
- The development period was shortened to six months, and the development cost was reduced to 1/2.
- FJVPS harness option was used, and the design period was able to be moved up for one month.
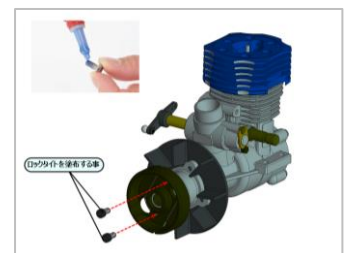
#### D: Shortening at lead time and period

- The man-hour of making the work procedure manual has been reduced by 30-40%.
- Communication between design and other business segment have been improved.
- Suggestions for improvement(ex. Mechanism operation, assembly, and check of serviceability) became possible without a real machine.
- The metal mold correction cost was reduced by half by the front-loading by FJVPS.

FJVPS/Harness

making the work procedure manual

Why Fujitsu?

- Fujitsu is a manufacturer that designs and manufactures products on its own, including supercomputers, servers, telecommunications equipment, and mobile devices. Based on its experience in manufacturing, Fujitsu provides PLM package software solutions.

  - · CAD: FJICAD/SX and FJICAD/MX
  - · Digital Production Preparation: FJVPS
  - · PDM: FJPLEMIA/Concurrent Design Manager
  - · Virtual Product Line Simulator: FJGP4D
  - · CAE / Simulator: FJKSWAD

- Based on 30 years of experience in the industry, Fujitsu provides package software that caters to customers' needs.
- By developing its own package software, Fujitsu maintains high product quality to meet customers' needs.
- Fujitsu is capable of providing customers with a full range of services, including hardware (e.g., PCs and servers) as well as networks, telecommunications equipment, and software.
- As an SI vendor, Fujitsu has helped many customers construct business operation systems for many years.
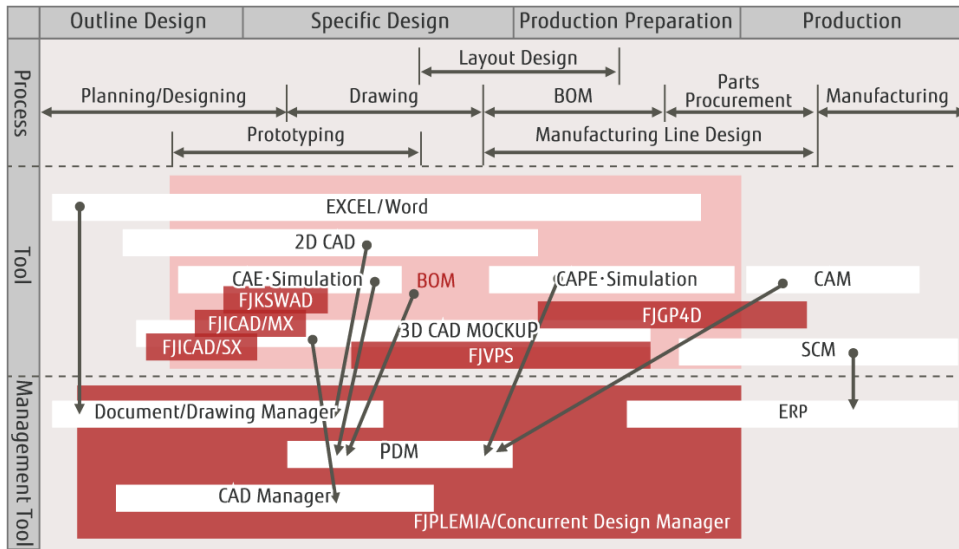
Case Study

### Shimadzu Corporation (analytical & measuring instruments)

Liquid chromatograph mass spectrometer "LCMS-IT-TOF"

(1) The start of production duties was hastened by a design revue using FJVPS.
  Rework and frequency of trial productions of actual equipment were decreased.
(2) Man-hours required for document preparation were cut in half.
   assembly procedure sheets, parts lists, service manuals, instruction manuals, etc.
  Man-hours required for the illustrations of harnesses and cables has been reduced by 10%.
(3) Product information data sharing with the FJVPS server.
  Work efficiency, consistency and maintainability are improved

### AMADA (Metalworking machinery and devices)
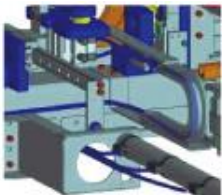
Prior study/review, decision of wiring and piping routes

Reduction of indirect operations, logistic cost, and improvement of maintenance serviceability have been achieved in addition to a 50% reduction of the product development period.
(1) Promoting front loading, and aiming at reduction of development period & cost reduction.
  It was possible to shorten the period from development to release on the market to 11 months, which had conventionally required about 2 years.
(2) A study/review for grouping and routing of wiring, hoses, etc. by utilizing FJVPS is executed from the planning stage.
  The development man-hour and time related to wiring and piping were reduced by 40%.
(3) FJVPS has also been utilized for the study/review on optimization of efficient loading methods on trucks as well as containers for overseas transportation. The success of such efforts has brought about a 19% reduction in logistic expense and a 30% reduction in the logistic delivery period.

Jatco (Automatic transmission for automobiles)
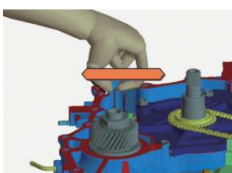
Animation for proficiency in work at vital points

(1) Challenges in reducing lead time before starting mass production.
  Jatco has undertaken formulation of the environment for utilizing 3D data where the functions of products, component characteristics and names, relationship with preceding & post processes about components to be assembled in charge, and precautions for safety can be learnt virtually
(2) Work proficiency before formulation of a mass-production line is realized using the animation function of FJVPS.
  • The staff in charge of the production site can routinely make full use of DMU, and feedback knowledge of the site into the animation for work proficiency by themselves.
  · The variability of the teacher side was also reduced on a global scale on certain projects, and as a result, the man-hours on the student side after proficiency was also reduced by nearly 40%.

FUJITSU Manufacturing Industry Solution FJVPS

Module functions

Module	Display 3D-model shape	Show MFG flow, MFG animation playback	Measurement, Cross section	Create / review harness	Add annotations	Edit assembling flow	Assembling/disassembling animation creation	Detecting collisions in animation	Output flow data, Output snap shots	Interference/clearance check	Mechanism setting	Human, Tools	Design review	Engineering change	Man-hour estimation	Assemblability evaluation	Process split, Resource assignment	Touch panel operations
FJVPS/Standard (DMU+MFG set)	◆	◆	◆		◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆
FJVPS/MFG (Assemblability verification)		◆			◆	◆	◆	◆	◆					◆	◆	◆	◆	
FJVPS/DMU (Digital Mockup)	◆		◆		◆					◆	◆	◆	◆	◆				◆
FJVPS/Harness				◆														
FJVPS/ Assembling Animation (Create Assembling Animation)	◆	◆	◆		◆	◆	◆	◆										◆
FJVPS/Document Interface									◆ (Outputting flow info and snapshots made by FJVPS/Assembling Animation for making various documents)									
FJVPS/Viewer	◆	◆	◆															◆

FJVPS/ Standard, MFG, DMU: Floating license
FJVPS/ Assembling Animation, Document Interface : Stand alone license
FJVPS/ Viewer: license free
FJVPS/ DMU is necessary to run FJVPS/ MFG and Harness.

Operation Environment, CAD Data Interface

	Recommended specifications
OS	Windows 8 Pro, Enterprise (Win32/x64)
	Windows 7 Professional, Enterprise, Ultimate(Win32/x64)
	Windows Vista Business, Enterprise(Win32/x64)(SP2 and above)
CPU	1GHz and above
Physical memory (RAM)	1GB and above
Hard disk capacity	1GB and above
Graphics card	memory 128MB and above
	supporting OpenGL accelerator
CAD Data Interface	FJICAD/SX, FJICAD/MX, NX, NX I-deas, PTC Creo Parametric (former Pro/E), PTC Creo Elements/Direct, SolidWorks, Solid Edge, CATIA V5*, Autodesk Inventor, Parasolid*, STL, VRML 2.0
* All Interfaces except Parasolid and CATIA V5 are offered free.

Information in this document is as of January, 2014 and is subject to change without notice.