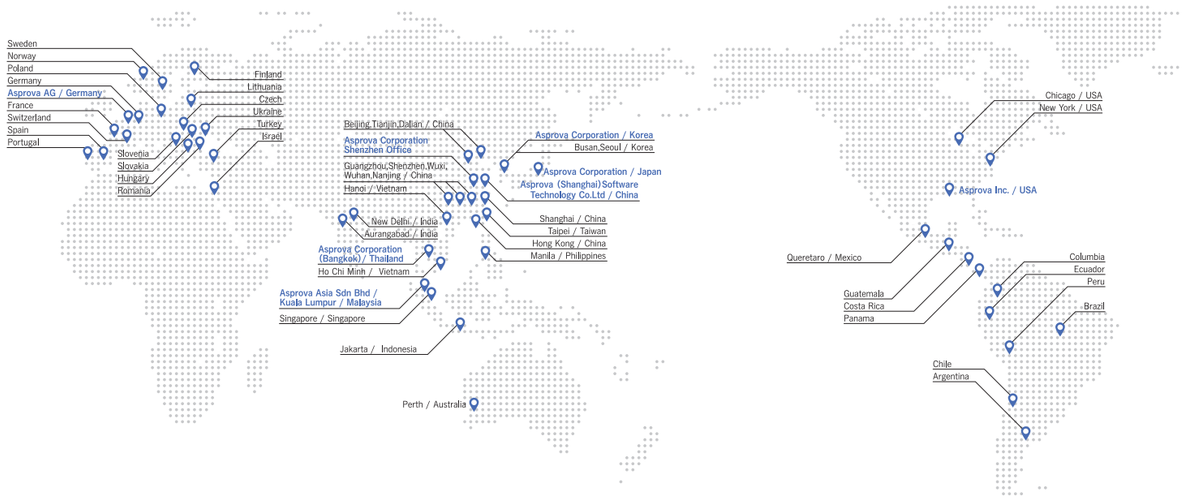
# Message from the President

Asprova Corporation was founded in 1994 as the first company in Japan to specialize in production scheduling software. Since then, we have continued to focus solely on the development and sales of the Production Scheduler Asrpova. Over these 25 years we have continued to upgrade the software, taking the feedback from our manufacturing customers in Japan into account. Not only is our local market share in japan now as high as 58.4 percent*1, but our international and multilingual support system spanning 10 countries has allowed us to implement Asprova in over 2800 sites across more than 30 countries. If Asprova APS helps your factory to become more transparent, improves on-time running, dramatically shortens lead times, reduces inventory and ultimately increase profits, then our work will have been for something. These are the feelings we hope will be apparent when you use Asprova APS.

*1 As per Scheduler Market Share, Comprehensive List of Software Marketing 2013 by Techno Systems Research Co., Ltd.

Kuniyoshi Takahashi
President and CEO
Asprova Corporation

# Global Support Network




| | | | |
|---|---|---|---|
| Multiple Languages | Japanese | English | Korean |
| Chinese (simplified) | Chinese (traditional) | Thailand | Indonesian |
| Vietnamese | German | Polish | Hungarian |
| French | Spanish | Turkish | Portuguese |

Asprova is supported by local subsidiaries in China, Korea, Germany, America, Malaysia, Thailand and more than 30 national distributors overseas

**Implementation Result**

Japanese domestic **2063sites** Overseas **762sites**

※As of June 30th, 2019


## Asprova Corporation

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■ Germany/Asprova AG / https://www.asprova.eu E-mail：info@asprova.co.eu
■ USA/Asprova USA / https://www.asprova.us/us/
■ Malaysia/Asprova Asia Sdn Bhd / https://www.asprova.com/en/
■ Thailand/Asprova Asia Sdn Bhd / https://www.asprova.com/en/ E-mail：thailand@asprova.com


www.asprova.jp Asprova

Inquiries

2019.07

ASPROVA
High Speed Scheduling

Smart Factory

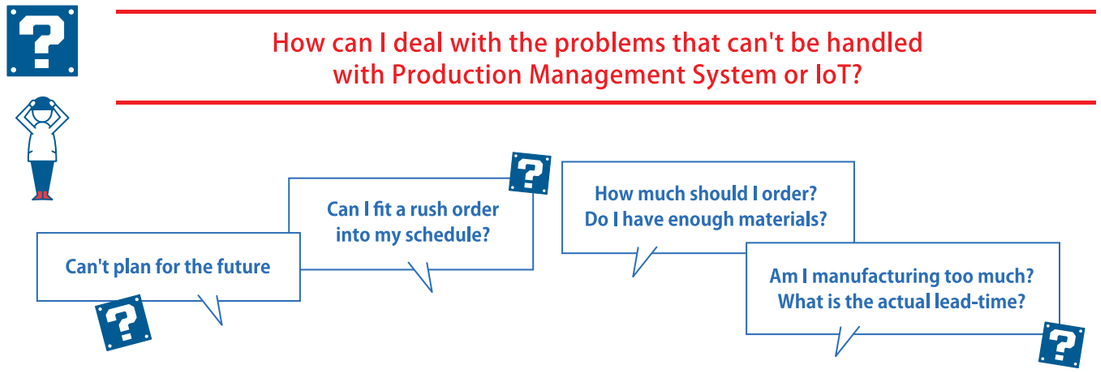
# Asprova APS

**No.1, best seller over 25 years in Japan**
**Used in 38% of major companies and deployed over 30 countries at over 2800 sites**
**Market Share 50% in Japan**

〈 According to the survey results from Fuji Chimera Research Institute, Inc, 2017 〉

*Advanced Planning & Scheduling system*

## How can I deal with the problems that can't be handled with Production Management System or IoT?

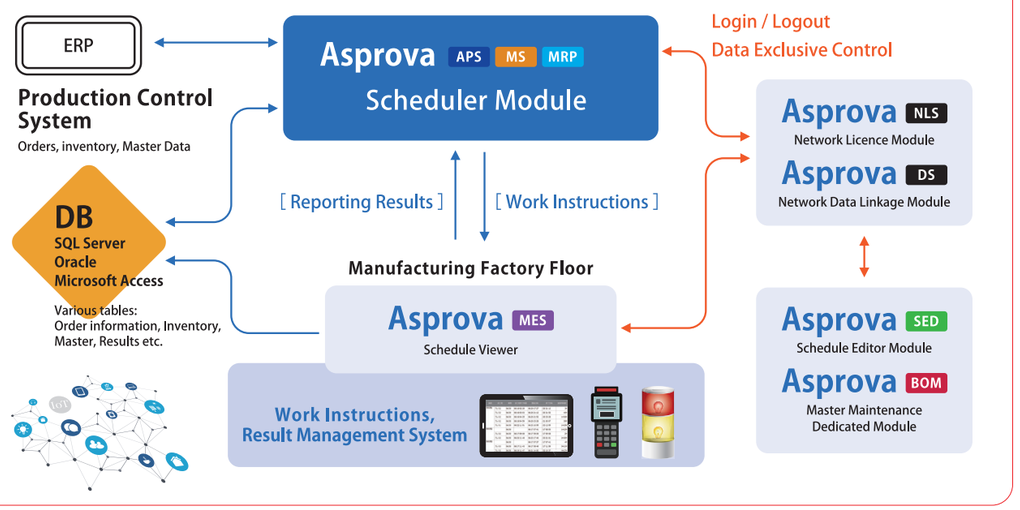



# Asprova can solve them all!

No.1 market share in Japan. Equipped with a multitude of standard features and highly-flexible scheduling logic "Visualize" the manufacturing factory floor, and solve your "Product control" problems.

Solving all the problems with Ultra High-Speed Scheduling Logic

■Planning efficiency improvements ■Visualization ■Inventory Reduction ■Sharing of process information




## Production Management System packages

SAP Certified Integration with SAP Applications — SAP AG

Microsoft Dynamics AX — Microsoft Corporation

EXPLANNER/Ja — NEC Corporation, NEC Nexsolutions, Ltd.

TPiCS-X — TPiCS Laboratory, Inc.

R-PiCS V4 — JB Advanced Technology Corporation

SPEOM — EXA CORPORATION

PI-navi — TOTEC AMENITY LIMITED

Ready for IBM WebSphere. software — IBM Corporation

AMMIC Corporation — AMMIC Corporation

EXEX — SystemEXE,Inc.

mcframe — Toyo Business Engineering Corporation

JIPROS 中堅製造業向けERP — Japan Information Processing Service Co., Ltd.

TECHS — Technoa Inc.

Factory-ONE 電脳工場MF — EXcorporation

GRANDIT グランディット — GRANDIT CORPORATION

ATOMS QUBE — QUALICA Inc.

JWALD ジェイワルド — Synapse Innovation Inc.

MMsmartFactory — MMsmrtFactory

Production Management System packages or the existing Production Management System.



# With success stories like these, it's no wonder Asprova is confidently solving everybody's problems.

Asprova has been brought into various factories around the world to solve a variety of problems faced in production planning. While many of them experienced the Planning Efficiency Improvements, Transparency, Inventory Reduction and Sharing of Process Information Asprova enables, these six examples are the most significant.

On-Time Delivery **Case 1**

Pentel Co., Ltd.

**Coordination with ERP achieved significant improvements in on-time delivery and reducing stocks of unshipped inventory.**

Pentel Co., Ltd. is known for its school stationery consumer products, while recently the company has expanded into the manufacture and sale of electronic devices and industrial robots. Pentel implemented Asprova APS to assist with production proposals related to sales planning. Pentel linked Asprova APS with other newly-introduced ERP solutions, resulting in a drastic reduction in unshipped inventory by 50 to 75 percent. The on-time delivery rate was also significantly improved.

Quicker Planning **Case 2**

Nishikawa Rubber Co., Ltd.

**Production plan steps reduced by two thirds, while a better grasp of production capacity facilitated more flexible yield adjustments.**

Nishikawa Rubber Co., Ltd. is a specialist manufacturer of automotive, residential, civil-engineering and medical/cosmetic products, while also producing various sealing materials. Asprova allowed it to reduce the number of steps required for production plans by two thirds, while also making it easier to adjust yield. Setting minimum inventory also allowed Nishikawa Rubber to achieve a 40 percent reduction in product inventory.

Transparency **Case 3**

Panasonic Appliances Air-Conditioning Malaysia Sdn. Bhd.

**Made the global standard for its production planning system, improving efficiencies in product planning and reducing inventory across subsidiaries in several countries.**

Panasonic Appliance Air-Conditioning Malaysia Sdn. Bhd. Was founded in 1972, today making and exporting air conditioner packages and parts to more than 120 countries. Asprova assists with production planning. At the same time, other units within the Panasonic group of companies experienced similar problems. Impressed by Asprova's local support network, Panasonic chose to make Asprova its global standard, working to expand implementations into the rest of its network.

Increased Production **Case 4**

Kobayashi Create Co., Ltd.

**Factory transparency increased, with yield per planning time increased by 30 percent.**

Kobayashi Create Co., Ltd., Which provides products and services centered on the printing of recording paper and business forms, The company's printing business operates entirely on a build-to-order basis, with each customer order unique to another, originally making short delivery times difficult. With optimized production proposals now possible however, Kobayashi Create was able to increase yield per planning time by 30 percent. Promised same-day delivery improved from 20 to 80 percent as well, reducing lost opportunities.

Reduced Inventory **Case 5**

Webasto Japan Co., Ltd.

**Planning moved from a daily to hourly bases, drastically reducing warehouse inventory.**

Webasto Japan Co., Ltd. Makes products such as car sunroofs, it's headquaters are located overseas. The company implemented Asprova as part of the boader group's drive to globalize, demanding manufacturing efficiency improvements and the ability to manage all processes, All assembly line production is now planned on an hourly basis, while related parts ordering and product shipping is now automated, delivering a dramatic reduction in inventory and necessary warehouse space. Personalization of production planning was also removed, eliminating experience and intuition from the process.

Information Sharing **Case 6**

Yamaha Corporation

**Information sharing between production floor and management reduced proposal creation and manufacturing lead time by two thirds.**

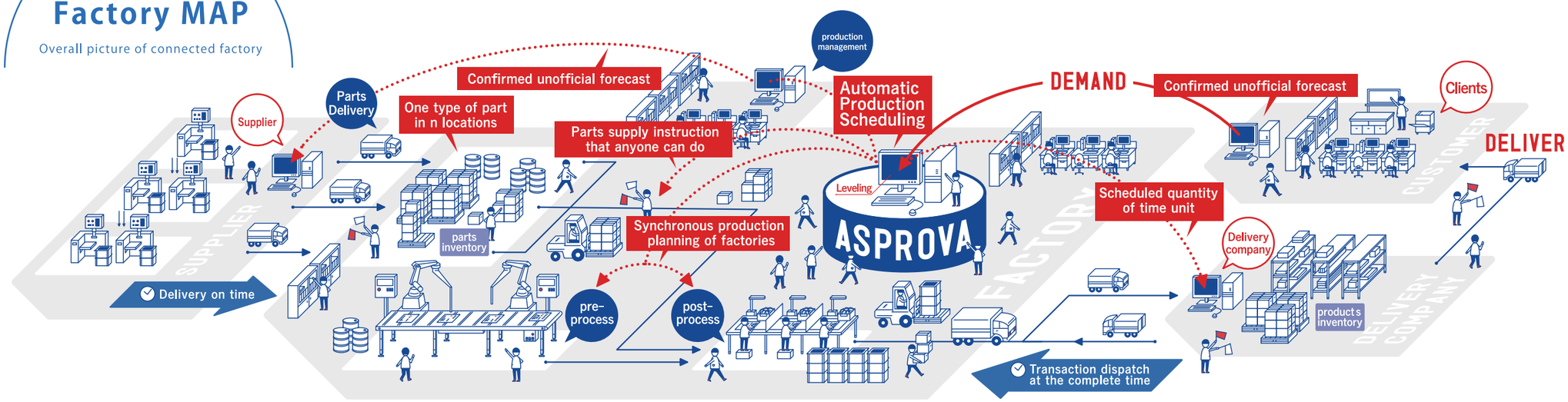
Yamaha Corp. has considerable global operations in the music and sound industries, producing musical instruments, A/V equipment and music classes. Asprova was brought in, introducing information sharing between production floor and management. Planning could now be updated with performance information in real-time, reducing time needed for proposals from 60 to 20 hours/month, as well as manufacturing lead time and WIP inventory by two thirds.

# Connecting Peoples, Things, Resources With Production Scheduler

The environment surrounding the manufacturing industry is rapidly changing. It is required to improve the whole production process and production efficiency in the factory.
Asprova provides work leveling (dispatching, resource load leveling), and time-based MRP and pegging logic that connects from where to where in additional.
Improves the flow of connecting all peoples , things, resources in the whole processes from procurement , production to delivery, realizing inventory reduction and maximum resource utilization.

## Factory MAP

Overall picture of connected factory




## EFFICIENT

Planning Efficiency Improvements

Problem··· **We couldn't immediately give a delivery date, so we lost the contract···**

Solution! **Asprova APS's Planning Efficiency Improvements.**
Speeding up the planning, with rapid and accurate delivery estimates reducing lost opportunities.

## VISUALIZE

Visualization

Problem··· **It looks like demand will increase in the future, but I'm not sure we have the capacity we need···**

Solution! **Asprova APS's Transparency.**
Asprova APS's solid understanding of future equipment load enables you to make the changes you need, such as shift adjustments and outsourcing.

## LEAN

Inventory Reduction

Problem··· **We've got excess capacity but the warehouse is full, so we can't increase production···**

Solution! **Asprova's APS's inventory Reduction.**
Make maximum use of resources thanks to higher production planning accuracy.

## SHARE

Sharing of Process Information

Problem··· **We gave our customers process timeframes based on experience and intuition··· we messed up big time···**

Solution! **Asprova APS's Sharing of Process Information.**
All process information is shared throughout the company, making customer support far easier.

*High Speed Scheduling for Smart Factory*

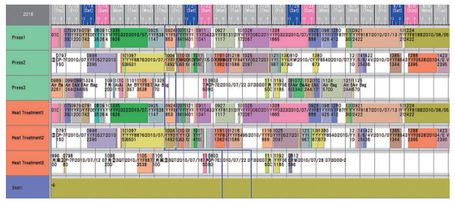
*Asprova Graph/Sheet/Pivot*

# All the features you need for production scheduling are in one package. Meets the client's needs without Customization.

Asprova is equipped with a multitude of standard features covering everything you need on the production floor. Over the years we've listened to user's feedback and release updates on a regular bases, adding the features requested by factory operators. Most companies using Asprova have been able to take advantage of the rich, practical feature set, operating in a non-customized manner.

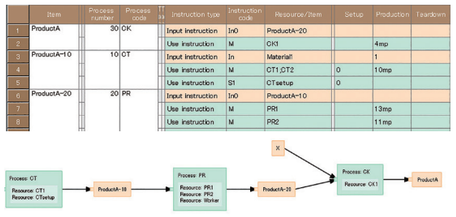
## Resource Gantt Chart

Orders, production, purchasing and inventory can be displayed in threaded format.



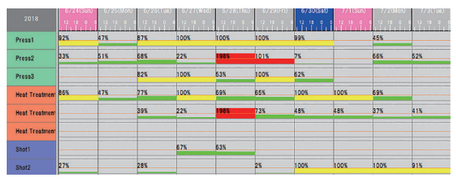
## Integrated Master Editor table

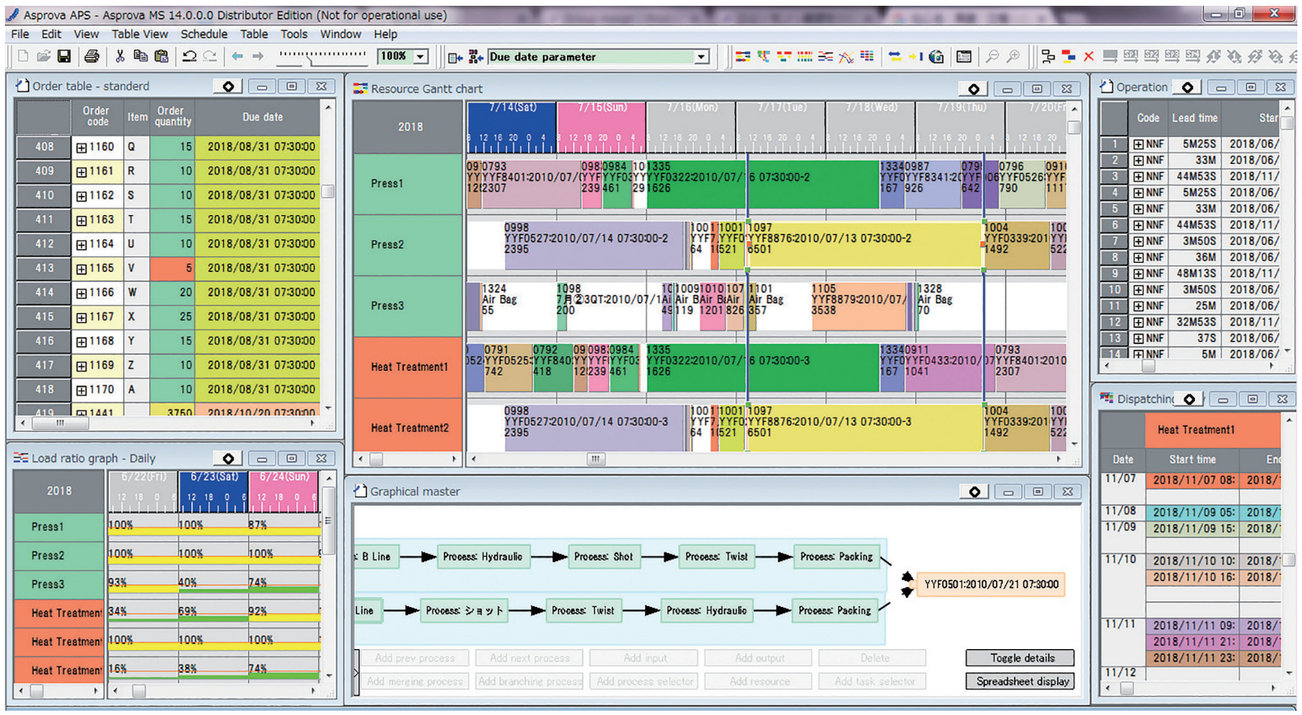
Two different windows are available to display master data: a spreadsheet view for easy editing and graphical version for quick reviewing.



## Load Graph

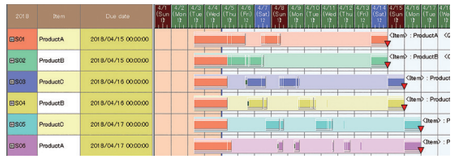
Load discrepancies can be viewed by day, week or month for each resource.

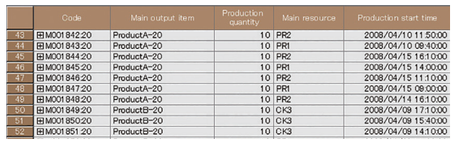





## Order Gantt Chart/Operation Table

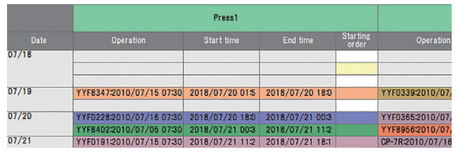
Useful for working out tasks instructions, delays in delivery or replying to delivery time requests.





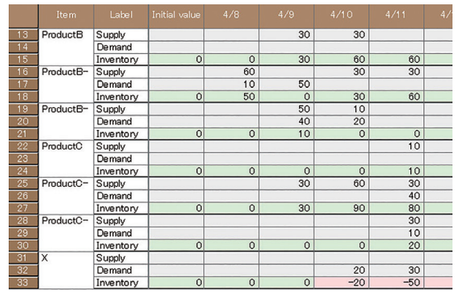
## Dispatching View

Allows you to confirm required tasks for the day by facility and operator. Use the mouse to quickly make changes to the order, facility or worker involved.



## PSI

Calculates movements in demand, supply and inventory in day, week or month or adds your own calculation fields as necessary.



POINT

### An extensive set of essential features

**Support for plans synchronizing multiple processes**
Save several steps when building master data, creating proposals synchronizing each step of the plan.

**Support for plans by the second, based on standard time**
Capacity can be noted per item, process or machine, enabling highly-accurate proposals.

**Support for individual machines, molds and personnel**
Production plans can take machine, mold and personnel restraints into account.

### Backing efficient proposals

**Develop plans that take note of your progress**
When you run ahead of schedule or encounter delays, your entire plan can be rescheduled as necessary.

**Support for multiple planning scenarios**
This functionality, included as standard, allows for scenarios based on delivery time, product and other sequences.

**Modifiable planning results (manual adjustment)**
Previously created plans can be partially adjusted manually before being rescheduled.

### Improving usability

**GUI makes overloaded lines and delivery delays visible**
Pick line overloads and delayed deliveries instantly using charts and graphs.

**Flexible support for complex configurations**
A variety of constraints can be shown using formulas, such as for using alternate facilities when deliveries might be delayed.

**Data I/O capable of linking data using mapping only**
Data can be input or output specifying any field from external databases, including production management systems.

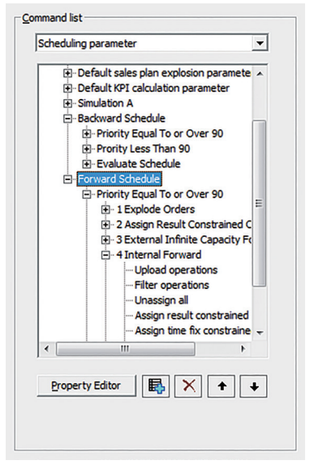
*Asprova FCS Turbo Engine*

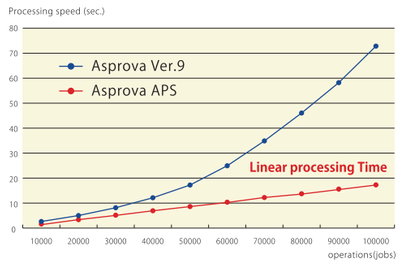
## Advanced Scheduling Engine
## Multi-function, High-performance Scheduling engine reflecting a multitude of unique customer requirements

**[ Main Specification and Functionality ]**

①Automatic operation split / ②Load leveling assignment / ③Setting up of resource priorities / ④Calculation of the necessary number of workers required / ⑤Setting of sub-resources such as molds, employees, tools etc / ⑥Assignment of merging and branching processes / ⑦Validity period of resources can be set in the master data / ⑧Restrict what resources can do the next process with the Next Resource Constraint / ⑨Function to customize the evaluation selection of candidate resources / ⑩Set upper limit to suspension time for setup and production time / ⑪Dispatching Rule can be set to assign in the order of highest priority / ⑫Able to prepare numerous parameters to execute various simulations / ⑬Item grouping to reduce the amount of setup time for each process / ⑭Filter the assignment of one part of the orders, processes, resources and items / ⑮Forward/ Backward scheduling takes buffer time into consideration / ⑯Resource constraints take into account period specific safety stock and inventory pegging / ⑰Furnace setting allows various specifications of conditions for simultaneous processing / ⑱Skill Map allows specification of which workers can use which resources and their skill at using those resources / ⑲Automatic pegging functionality allows consideration of complex assignment conditions between orders / ⑳Numerous setup time settings including external setup, teardown and setup change time / ㉑Rough scheduling that allows you to balance the workload without fixing the order of the orders / ㉒Automatic replenishment of orders that flexibly adjusts the volume by taking into account current inventory levels / ㉓During rescheduling possible to remember the assignment position and do various processing such as modification of master and data input/ output / ㉔Generate production orders from customer forecasts and, taking into account the safety stock, group lots of intermediate products for each unit period of time

◎Command Editor




※Ver.10 (64bit) can schedule 4 million jobs in 17 minutes

Continuous Execution / Single Execution

**Leveling scheduling (up to X weeks ahead)**

Filter：Orders that due date before X weeks ahead
Assignment type：Finite capacity
Assignment direction：forward

- Upload operations
- Filter operations
- Assign/Peg orders

**Piling scheduling (up to y months ahead)**

Filter: Orders that due date before Y months ahead
Assignment type：Infinite capacity
Assignment direction：backward

- Upload operations
- Filter operations
- Assign/Peg orders

add to

**Command**

- Prepare for assignment
- Upload selected orders
- Upload operations
- Upload selected operations
- Assign/Peg orders
- Evaluate schedule
- Modify properties
- Save
- Import
- Export
- Execute shell
- ⋮

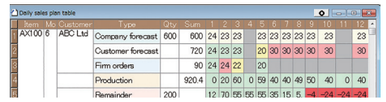
## Optional features for even more advanced scheduling

### Sales
MS MRP
included by default in Asprova APS

**Linking sales information and production planning**

Application: Automatic compilation of production orders from sales information, backward planning and assignment for required date.
- The production plan and sales orders can be linked in order to predict delivery time.
- Compilation of a sales plan from yearly or monthly production plans.
- Links directly with raw material and purchase orders.

[Daily Sales Plan Table]

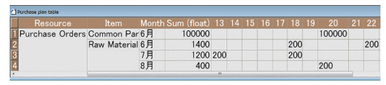


### Purchase
MS MRP
included by default in Asprova APS

**Linking and synchronization of the production plan and purchase information**

Application: Automatic compilation of purchase plan from the production plan. Creation of middle or long term purchase plans. Use already existing materials purchase plan as constraint when making the production plan.
- Compile a purchase plan
- Specify purchase lot-sizes
- Link between the current stock levels and sales orders

[Purchase Plan Table]

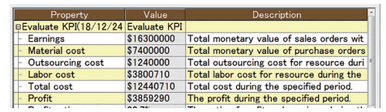


### KPI
APS MS MRP

**KPI（Key Performance Indicators）evaluated for a whole project or specific orders, resources or products, and then saved in history.**

Main KPI (from a total of 51 kinds):
- Turnover
- Material costs
- External labour costs
- Personnel costs
- Total costs
- Profit
- Rate of profit
- ROI Return on investment
- Degree of delivery reliability
- Delivery reliability of suppliers
- Total/finished and intermediate goods in piece numbers
- Total/WIP and finished goods in cash value
- Purchased item inventory

[KPI for Entire Project]

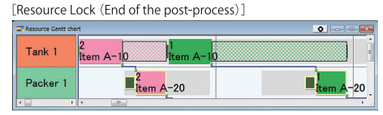


### Resource Lock
APS MS

**After completing the production a resource can be locked for a certain amount of time**

Example: Tank facilities etc.
- Locking the resource until the succeeding process begins.
- Locking the resource until the succeeding process ends
- Locking the resource for a certain time period after the start of the succeeding process

[Resource Lock（End of the post-process）]

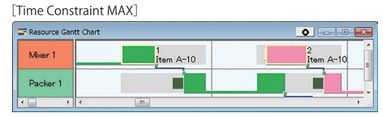


### Time Constraint MAX
APS MS

**Maximum time between processes can be preset**

Example: Perishable WIP such as food and beverages, chemicals and medicines etc.
- The time between the end of the previous process and the start of the next process can be restricted.
- Time between the start of the previous process and the start of the next process can be restricted.

[Time Constraint MAX]



### Group Assign
APS MS

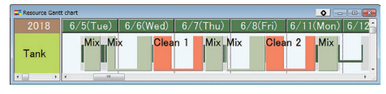
**Grouping operations, assigning them either simultaneously or consecutively**
- The production start time is the same for the same resource.
- The production start time is the same for different resources.
- Operations are linked consecutively according to the specified order.
- Simultaneous start and consecutive start can also be combined. (Requires plug-in)

[Group Assign（Same Time）]

### Event
APS MS

**Set event conditions for each resource and generate event**
- Automatic planning of one-day maintenance after a specified amount of use.
- Automatic planning of half-hour equipment cleaning after a specific length of time in use.
- Automatic insertion of set-up times before/after/during specific orders.

[Generated Event]

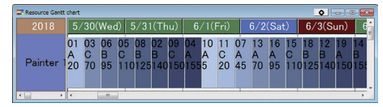


### Optimization
APS MS

**Work sequences can be optimized for all resources**

As long as orders are not delayed can perform the following:
- Grouping of lots of same products within a certain period.
- Order the work sequence to minimize the set-up time.
- Sorting from light to dark colors or from thick to thin metal sheets
- Takes into account multiple properties.

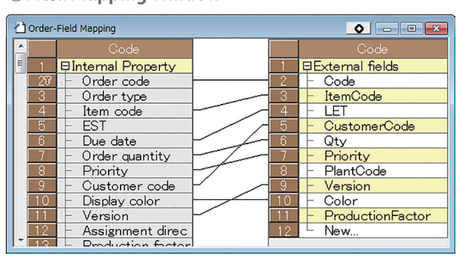
[Work Sequence sorted from light to dark colors]



## Asprova Database Fieldmapping

### Linking with OLE DBs like SQL Server and Oracle or text files without programming!

◎Field Mapping Window




[ Main Specification and Functionality ]

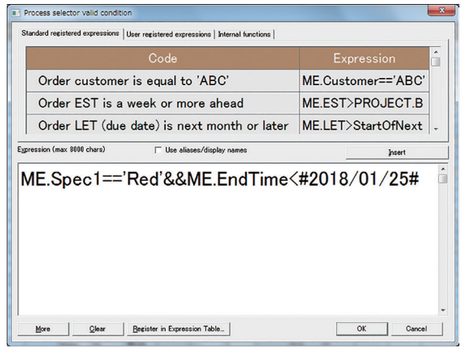
- Master data/Planning results can be imported/exported
- Table elements for export/import can be selected
- Field name and sequence can be defined at will
- Differential import and export functionality
- Individual adjustment for each table
- Data change function when importing/exporting
- Primary keys can be adjusted
- The sequence of data in the data base is irrelevant
- Record filtering
- Text files supported are CSV, Tab-separated or unicode

DB
SQL Server
Oracle
Microsoft Access

## Asprova Expression

### High degree of flexibility makes most additional programming unnecessary

◎Expression Editor Dialog




Expressions can affect the operational settings, time calculation, graphical user interface, DB-connection etc. in many ways. The settings are similar to macros that under normal circumstances would otherwise require external programming to handle complex settings. In addition, the amount of master data that needs to be set can be greatly reduced by efficiently setting the master data.

[ Asprova Paramatic BOM ]

Expressions can be used for some part of the Integrated Master Editor settings. Depending on the properties of the order, you can also change the number of the processes. Furthermore, gathering the similar Integrated Masters and absorb the others with Expressions, you can greatly reduce registration data.

[ Main Specification and Functionality ]

- Master data validity settings/calculation of the necessary amount/capability formula
- Order the sequence of orders for certain resources
- String manipulation when connected with a database
- Data filtering in table windows
- Customization of strings displayed in the GUI
- Extension of tables by adding virtual properties
- Logical operators (AND, OR, XOR) that can be used with IF conditions
- Many sets of registered expressions such as "Left" "Format"




## Free Trial & Lesson

### Pre-verification

Asprova trial

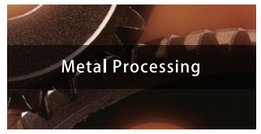
By using the free trial version which can be downloaded from the homepage, you can confirm the function on the sample data and verify the planning requirement of the target process by the prototype. Also you can practice the operation and setting method with e-leaning and training seminar. Please utilize the pre-verification menus and experience the specific merit of using Asprova.

- Sample data of function
- E-Learning
- Training seminar
- Online help
- Prototype development support

### Industrial sample

lib.asprova

You can confirm the different expected effects and special planning requirements of different industry types and processes with the industrial sample
We release the e-learning and sample data.











### Operating Environment

[ Operating Environment for Asprova APS ]

OS：Microsoft Windows Server 2016 / 2012 R2 / 2012 / 2008 R2 / 2008 / 10 / 8.1 / 8 / 7
CPU：CPU Above Pentium4 is required.
Memory：Above 1GB. (depends on the quantity of data)
Hard disk：Above 300MB
※SED/BOM/MES module don't execute the schedule, so the performance of the CPU is not required as much as the scheduler module

■ Please access our homepage for the further information
https://www.asprova.com/en/asprova/modules/environment.html

[ Operating Environment for Asprova NLS・DS ]

OS：Same as Asprova APS
CPU：CPU Above Pentium4 is required.
Memory：Above 512MB. (depends on the quantity of data)
Hard disk：Above 30MB is required if using NLS only.
When accompanied with DS, 300MB is needed for each project.

*Asprova Module Information*

## Choose the scheduler and supplementary modules that matches your needs

**APS**
Advanced Planning & Scheduling

**An APS scheduler based on MS with the Sales option and Purchase option provided as standard.**

Performs scheduling right the way through from sales to purchase.
MRP functionality is built in as standard. So it can do the material requirements planning as well

**MS**
Manufacturing Scheduler

**Production scheduler for factory which produces production plan of multi-products, multi-processes at high speed**

Performs finite-capacity assignment of manufacturing orders for a factory
Can make both short term plans for actual work instructions, and long term plans to simulate resource load.
Contains MRP functionality

**MRP**
Material Requirements Planning

**A scheduler that executes MRP (Material requirements planning)**

Scheduling capable with fixed lead-time set for item table and parts list.
Master data can be shared with other modules, so upgrading to APS or MS is easy.

**SED**
Schedule Editor

**A editor module for modifying the scheduling result**

Sequencing functionality that modifies the scheduling result
or arranges operations manually is provided as standard.

**BOM**
Bill Of Material

**Specialized module for the creation and maintenance of the master data (Integrated Master Editor)**

By combining with DS it is possible to update the master whilst in the middle of scheduling.
Also can be used to input results since the functionality of MES module is built in it.

**MES**
Manufacturing Execution System

**A scheduler viewer suited for the manufacturing shop floor**

Display all the various charts, graphs and table windows as well as input results.

**NLS**
Network License Server

**A module to handle the administration of all the Asprova licenses together on one PC. Licenses can be recognized across the network.**

At least one scheduler module (APS/ MS/ MRP) is required for each project.

**DS**
Data Server

**A module to integrate scheduler data amongst all modules on the network**

By using a check-in/check-out system exclusive control will be applied when a user checks out the project file
Results, orders, masters etc, will have their different data integrated into DS by transaction.
When the data is updated in DS it notifies all the other modules
and their respective users are aware of the data update in real-time and can download the newest data.

## Module Option Structure

| ● Standard Functionality<br>● Functionality that can be added | GUI/ Result Input | BOM Input | Schedule Edit | Infinite Schedule | Finite Capacity Schedule | Sales | Purchase | KPI | Resource Lock | Time Constraint Max | Group Assign | Event | Optimization |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| APS Sales/Purchase Scheduler | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● |
| MS Standard Scheduler | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● |
| MRP Fixed lead-time infinite piling of assignment | ● | ● | ● | ● | | ● | ● | ● | | | | | |
| SED Schedule Modifier for Production Planner | ● | ● | ● | | | | | | ※ | ※ | ※ | | |
| BOM Maintenance functionality | ● | ● | | | | | | | | | | | |
| MES Viewer + Result input | ● | | | | | | | | | | | | |
| NLS Network License server | Licenses are managed centrally on a single PC. Client PCs connected via NLS undergo license authentication. | | | | | | | | | | | | |
| DS Data Server | Schedule data is managed to allow sharing among multiple users. | | | | | | | | | | | | |

※the option functionality can be used in SED if the data was saved by the scheduler module with the option

## Configuration Example

**Scheduler + Shop Floor Terminal**

Asprova APS
Sale/Manufacturing planning/ Material purchase planning

\+

Asprova MES
Work instructions/Results input

**MRP + ERP**

Asprova MRP
Material requirements planning

\+ ERP

**In the case where exclusive control and real-time data connectivity occurs**

Asprova MS
Short-term scheduling

\+ Asprova SED
Manual modify (the line in charge)

\+ Asprova MES
Work instructions/ Results input

\+ Asprova BOM
Integrated master editor maintenance

Asprova DS Data server
Asprova NLS Network license server

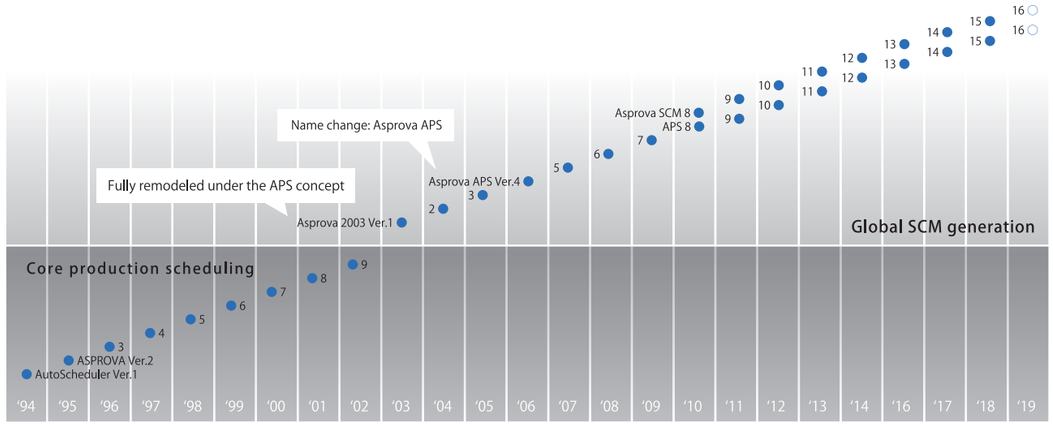
\+ ERP

# Installation Record

| Industry | Details |
|---|---|
| Electric / Electronic | LEDs, connectors, solderless terminals, microprocessors, printed circuit boards, silicon wafers, air conditioner cases (plastic molding), speakers, ceramics, watches, semiconductors, lead frames, CD-ROMs, CD-R / DVD / CD-ROM drivers, electric wires, LCDs, stereos, photo masks, WF cables, sockets, mobile phones, connectors for mobile-phones, IC packages, aluminum electrolytic capacitors, photoresists, TFT modules, piston rings, needles, piano wires, printer pins, automotive meters, photoelectric boards, digital cameras, car navigation systems, refrigerators, light fixtures, sensors, signal controllers, solar-powered battery modules, vacuum fluorescent displays, batteries, multipolar connectors, power cables, mainframe computers, projection equipments, quartz transmission equipments, desktop PCs, carbon electrodes, projectors, printers, power boards, heating equipment controllers, solar cell wafers, medical electrical equipments, SD cards, portal media players, connectors, bar code readers, electronic instruments, pro audio products, optical dirves, automotive electronics, polymer parts, resistor transformers, OA machines, AV machines, communication equipments, communication waves... |
| Automotive | Engine parts, doors, chassis, interiors (plastic molding), metal molds, shock absorbers, vehicle inspections, pipes, tubes, engines, cranes, rubber, aircraft parts, test bodies, brake parts, high-pressure hoses, seat fabrics, wire ropes, transmissions, camshafts, crankshafts, cases, wire harnesses, motorcycles, bicycles, railway carriages, external parts for ships, anti-vibration equipments for vehicles, tires, movable cranes, ceramic plugs, automotive sunroofs, marine diesels... |
| Machinery | Looms, kitchen appliances, machine tools, agricultural machinery, industrial machinery, optical instruments, light fixtures, air conditioners, heating appliances, plastic parts for office equipments, control computers, material handling equipments, power transmission equipments, power-driven hand tools, internal combustion engines, in-line instrumentation systems, wafer visual inspection equipments, centrifuges, sewing machines, heat treatment equipments, tanks, water tanks, turbines, condensers, model engines, vacuum pumps, wafer precision equipments, food products machineries, electric facilities, gas and water-related tools, water supply-related instruments, electric welders, stage lighting fixtures, sewing machine parts, pumps, ultrasonic diagnosis equipments, CNCs, robot transfer machines, nuclear equipments, crystal units, rubber hoses, fire alarm equipments, industrial motors, engine bearings, precision jigs, automatic marking machines, seawater desalination plants... |
| Metal | Drills, screws, cannons, wires, plumbing fixtures, guard rails, pipes, magnet wires, steels, sheet metal parts, fences, metal bridge parts, blades, connecting rods, nuts, industrial precious metal products, drawing alloys, aluminum for beverage cans, blades for cutting machines, gears, metal springs, timer parts, precision gears, aluminum foils, sheet coppers, ship plates, drawn copper products, specialty steel products, cutting tool tips, lubricating oil packagings, beverage cans, magnets, seamless pipes, large scale pumps, process pumps, couplings, clad steel sheets, transmission gears, straight lines, steel parts for power plants... |
| Non-metal | Corks, packagings, textiles, papers, shipping blocks, camera films, rubber products, ABS resins, synthetic resins, UV inks, gravure inks, printing of packing materials, coated abrasives, resin hoses, coating materials, film sheets, ceramic bases for electronic parts, tiles, firebricks, new ceramics, catalysts, paper clays, fasteners, glasses for LCD displays, packing tapes, stencil papers for wigs, sensitized resins, natural resins, cosmetics materials, inorganic pigments, nonwoven fabrics, aluminum foils, man-made leather, aluminum cans, resin molds, automotive sealings, watch bands, product elastomers (synthetic rubber), viscous adhesive products, rubber rings, fabrics, shrink labels, tuck seals, styrene resins... |
| Consumer goods | Detergents, plastic bags, plastic food containers, plastic models, office goods, fishing reels, microwave dinners, wood processing, socks, cans, cosmetics, rubber stamps, ballpoint pens, shampoos, shopping bags, cardboards, home exterior products, entranceways, underfloor storage units, fixture components, shoes, toy parts, necklaces, stockings, office furniture & fixtures, labels, envelopes, stationeries, steel furnitures, toner cartridges, curtains, food trays, lens, recording papers, industrial and institutional cleaners, tapes, masks, casts... |
| Food | Fermented soybeans, Coffee beans, black teas, drinking waters, whiskies, coffees, candies, gummies, fruit jellies, seasonings, hams, casings, juices, jams, flours, plant oils, health foods, canned foods, bottled foods, snack foods··· |
| Medical | Medical products, test drugs, medical equipments, laboratory testing reagents, granulated powders, tablets, endoscopes, dental materials, clinical test medicines, chemicals, generics, powdered medicines, surfactants, endoscopes, microscopes, stoma care goods··· |
| Chemical | Adhesives, plastic materials, asphalts, silicons, motor oils, polyethylenes, polypropylenes, rubbers, fluorine chemical products, polyvinyl chlorides, polyvinyl chloride pastes, plastic paint products, make up products, chemical substances, nuclear fuel rod (fuel), fine chemical products... |



# Development History




Since got the 4th annual small and medium enterprise new frontier prize from Japan industrial newspaper in 1996, totally got 13 awards worldwide.

# Let's Try — Steps for implementing an Asprova project


| Step | Description and Points | Support System |
|---|---|---|
| 01 | **Understanding The Current Situation And Setting Goals**<br>complete the profit increase diagnosis sheet with the results of your investigation of the current situation and the target values you aim to achieve. Set goals halfway between the ideal situation and reality. Since adding to or changing goals in the middle of a project can become a source of confusion, be sure to set clear goals from the outset and leave them unchanged until the projects is done. | Introduction Seminar [Free]<br>Profit Increase Diagnosis Sheet [Free] |
| 02 | **Creating a Prototype And Investigating Systematization**<br>Install the free trial version of Asprova on your PC. Follow the instruction in the introductory manual while practicing using Asprova on sample data. Create a prototype by inputting your own factory's data. Evaluate the prototype, investigate the extent of the new system and the need for development of peripheral functionality or interfaces with existing systems, and break up problem areas into the follow categories:<br>**A:Problems to be solved with Asprova's standard features B:Problems to be solved by adjusting your operating procedures**<br>**C:Problems to be solved by developing peripheral programs or plug-ins**<br>before officially deciding to deploy Asprova, be sure to create a prototype and test it thoroughly, so as to be as sure as possible that your Asprova project will be success. | Trial Version of Asprova [Free]<br>Introductory Manual [Free]<br>WEB Seminar [Free]<br>Introductory Seminar [Free]<br>Hands-on Training Seminar [Charged]<br>Rental Set [Charged]<br>Prototype Development Support [Charged] |
| 03 | **Signing The Contract and Assembling a Project Team**<br>sign a contract regarding the Asprova license, program development, and consultation. Start the profit increase project by assembling a project team officially endorsed by your company. The project team typically consists of three or more people, including one project leader, one or more people involved in production planning, and one or more people involved in system administration. | License Agreement [Charged] |
| 04 | **Preparing Data And Developing Additional Programs**<br>prepare data for actual use. Preparing the necessary master data is a lot of work. In general, you should expect it to take one month or more with one person working full-time on data preparation. Be sure to make arrangements so that the person in charge of data preparation will be able to set aside a sufficient amount of time for this job. sometimes date preparation can drag on for a long time because of the difficulty of preparing a large amount of data at high precision. In such cases, we recommend starting operation with data at a certain level of precision and gradually improving the precision of the data as operation precedes.<br>in most cases, Asprova will be interfaced with an existing system. Developing an interface with the existing system helps the planning cycle to proceed smoothly. In addition to employing our help, you can develop peripheral programs including interfaces with existing systems yourself using tools such as Microsoft Access and Visual Basic. | Consultation [Charged]<br>Program Development [Charged] |
| 05 | **Starting Test Operation**<br>put together an operation manual describing the new procedures for issuing work instructions, gathering results data, and processing orders with Asprova. An Asprova project involves re-organizing your way of doing things. You will adopt new ways of issuing work instructions and gathering production results data. Before staring test operation, hold and orientation session to explain the meaning of the operation procedure and the way to carry it out. Start test operation. Test operation typically takes one to two months. Once test operation is completed, you can switch over to actual operation. | |
| 06 | **Maintenance**<br>Items you manufacture and equipment you use for manufacturing will change over time. In order for you to use Asprova for a long time, we recommend that you sign a maintenance contract for necessary maintenance and software upgrades. | Maintenacne Aggrement [Charged]<br>User Conference [Free]<br>Use Research Seminar [Free] |