

## Advanced Planning and Scheduling Systems at ITMA 2023

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### Introduction

ITMA 2023 featured a wide range of software from companies throughout the world. This article focuses primarily on advanced planning and scheduling systems (APS) showcased at ITMA 2023. The content of this paper provides a follow-up to an earlier paper by the same author that focused on APS systems at ITMA 2019 (Supply Chain Management Software for Textile Networks at ITMA 2019). In that paper, an

overview of ten unique APS systems was provided. In contrast, this paper compares the features of APS systems featured at ITMA 2023, presents developments in those systems during the last two to three years, and provides information about what company representatives feel are the key differentiating factors of their software. Select software companies provided visuals of their software solution. These are shown in Figures 1-4



Figure 1: Datatex®

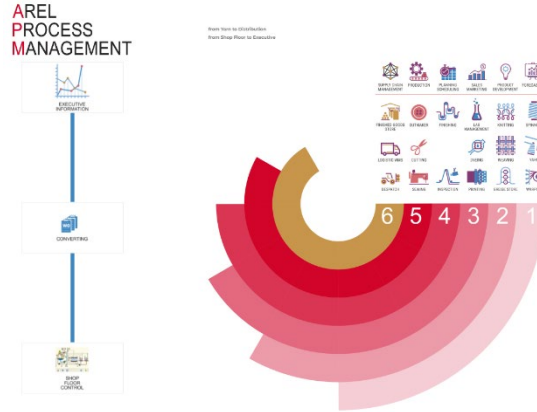


Figure 2: Arel



Figure 3: Halo GmbH – inteos®

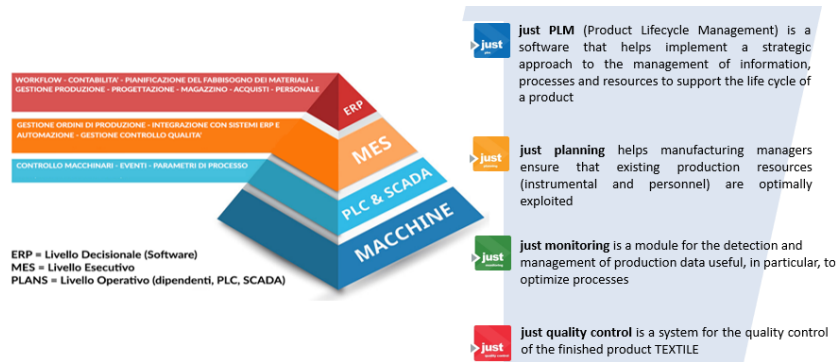


Figure 4: Just MES

Companies were identified for inclusion in this article by screening the list of exhibitors that appeared in the Index of Products in category 15.3.2, “Software systems for Supply Chain Management (SCM) in textile networks”, and/or 15.3.3, “Software for Enterprise resource Planning [ERP], Product Lifecycle Management [PLM], and Production Planning and

Scheduling [PPS]”. Representatives of eight companies, whose software was identified as having APS capabilities, agreed to speak to the author about their system’s capabilities. Each company representative was asked the same questions, and the information in this article is based on these conversations. The author attempted to verify that her understanding of these conversations was

correct by sending a follow-up email to each company representative.

The APS software companies discussed in this article are listed in Table 1. Table 2 shows the locations of these companies. Seven of the ten companies

reviewed in the 2019 paper are also discussed in this paper. One APS software system that was not described in the ITMA2019 paper is discussed in this paper (Arel).

**Table 1: APS software companies interviewed and their website**

<b>Company</b>	<b>Website (English Version When Available)</b>
Arel	<a href="https://www.arel.com/">https://www.arel.com/</a>
Computer House®	<a href="http://www.cho.it/">http://www.cho.it/</a>
Datatex®	<a href="https://datatex.com/">https://datatex.com/</a>
Halo GmbH – inteos®	<a href="https://www.inteos.com/en/">https://www.inteos.com/en/</a>
Interlem GP Omega	<a href="https://interlemgpomega.it/?lang=en">https://interlemgpomega.it/?lang=en</a>
Just MES	<a href="https://www.just-mes.com/en/just-suite">https://www.just-mes.com/en/just-suite</a>
Porini	<a href="https://www.porini.it/industry-textile/">https://www.porini.it/industry-textile/</a>
Schaeffer Productique	<a href="https://www.schaeffer-productique.com/landing-page_en/">https://www.schaeffer-productique.com/landing-page_en/</a>

**Table 2: Locations of APS software companies**

<b>Company</b>	<b>Main Location(s)</b>
Arel	Australia, Israel
Computer House®	Italy
Datatex®	Switzerland, Germany, India, Israel, Italy, US, Turkey, China, Serbia
Halo GmbH – inteos®	Austria
Interlem GP Omega	Italy
Just MES	Italy
Porini	Italy, Germany, US
Schaeffer Productique	France

### **Details of APS software packages**

All of the software packages discussed in this article facilitate detailed capacity planning and also can generate detailed production schedules to meet customer due dates and minimize costs over one or more factories. Company representatives were asked whether they consider their software to be an Enterprise Resource Planning (ERP) system, a Manufacturing Execution System

(MES), a Quality Management System (QMS), a Warehouse Management System (WMS), a Customer Relationship Management (CRM) system, and a Product Lifecycle Management (PLM) system. The results are shown in Table 3. Most company representatives considered their software to be ERP, MES, QM, WMS, and CRM systems. However, fewer company representatives considered their software a

PLM system. This is not surprising, since PLM systems are designed to manage product development, while APS systems

focus on managing production. Only Just MES did not consider their software to be an ERP system.

**Table 3: Software functionality**

Company	ERP	MES	QMS	WMS	CRM	PLM
Arel	yes	yes	yes	yes	yes	yes
Computer House®	yes	yes	yes	yes	yes	no
Datatex®	yes	yes	yes	yes	yes	yes
Halo GmbH – inteos®	yes	yes	yes	yes	no	no
Interlem GP Omega	yes	yes	yes	yes	yes	no
Just MES	no	yes	yes	no	no	yes
Porini	yes	yes	yes	yes	yes	yes
Schaeffer Productique	yes	no	yes	no	yes	no

Company representatives were also asked about the types of textiles processes and industries in which their software package is implemented. Tables 4a and 4b display the process results, while Table 5 reveals the findings regarding the industries.

The tables show that all of the software systems have been implemented in a wide range of processes and industries. Software was least commonly implemented in nonwovens processes and footwear.

**Table 4a: Processes in which software has been implemented**

Company	Spinning	Knitting	Warping	Weaving	Dyeing
Arel	yes	yes	yes	yes	yes
Computer House®	yes	yes	yes	yes	yes
Datatex®	yes	yes	yes	yes	yes
Halo GmbH – inteos®	yes	yes	yes	yes	yes
Interlem GP Omega	no	yes	yes	yes	yes
Just MES	yes	yes	yes	yes	yes
Porini	yes	yes	yes	yes	yes
Schaeffer Productique	yes	yes	yes	yes	yes

**Table 4b: Processes in which software has been implemented (continued)**

Company	Finishing	Printing	Fabric Inspection	Cut & Sew	Nonwovens
Arel	yes	yes	yes	yes	no
Computer House®	yes	yes	yes	yes	yes
Datatex®	yes	yes	yes	yes	yes
Halo GmbH – inteos®	yes	yes	yes	yes	no
Interlem GP Omega	yes	yes	yes	no	no
Just MES	yes	yes	yes	no	yes
Porini	yes	yes	yes	yes	yes
Schaeffer Productique	yes	yes	yes	yes	yes

**Table 5: Industries in which software has been implemented**

Company	Apparel	Home Textiles	Carpet	Automotive Textiles	Technical Textiles	Footwear
Arel	yes	yes	yes	yes	yes	no
Computer House®	yes	yes	yes	yes	yes	no
Datatex®	yes	yes	yes	yes	yes	yes
Halo GmbH - inteos®	yes	yes	yes	yes	yes	no
Interlem GP Omega	yes	yes	no	no	yes	no
Just MES	yes	yes	yes	yes	yes	some
Porini	yes	yes	yes	yes	yes	yes
Schaeffer Productique	yes	yes	yes	yes	yes	no

To provide information about system capability and updates since the article from ITMA 2019 was published, company representatives were asked what changes and additions were incorporated into their software in the past two to three years. Company representatives were also asked what differentiates their software from that of their competitors and what their customers tell them about why they chose their software over alternatives. The answers to these questions are presented in the following sections. The sections are grouped by the primary regions in which the software is implemented, to allow the reader to focus on

the regions in which they are most interested in APS software implementation.

**Austria, Germany, Switzerland**

- *Halo GmbH – inteos®*: Klaus Kreutzberg of Kreutzberg Consulting, a Halo Business Partner, said that new features of inteos® include the ability to control machines with mobile devices. A primary differentiator of inteos® compared to its competitors is that inteos® can track all materials used and can therefore support the identification of an optimized re-use of the raw material.

Kreutzberg says that customers choose inteos® because Halo knows how a textile company thinks, helps to analyze their customer's process, and will customize their software if necessary.

### France and other parts of Europe

- *Schaeffer Productique*: Olivier Heitz, Technical Manager at Schaeffer Productique, said that the new version of Schaeffer Productique is fully web based, there is now workflow to manage fashion, and artificial intelligence has been added into the ability to change the scheduling rules. Key company differentiators include Schaeffer Productique's ability to communicate about textiles and that the software is already used in textile factories. Heitz said that customers choose Schaeffer Productique since the company speaks the same language as most of their customers (French and German) and employs many textile engineers.

### Italy

- *Computer House®*: Paolo Langé, Engineer at Computer House®, said that Computer House® has added artificial intelligence into their software, including new functions to provide better production plans. Computer House®'s experience over the last 30 years is what differentiates them from their competitors. Langé said customers choose their software because Computer House® continually improves it and shares their implementation of new features requested by one customer with other customers. In addition, Computer House® is always willing to listen to their customers and reacts to customer requests.
- *Interlem GP Omega*: Andrea Picone, CEO of Interlem GP Omega, said that Interlem GP Omega is now completely web based software. It uses a new

scheduling system called Net@Pro, in partnership with another company, and Interlem GP Omega also has a new ERP version. In addition, a new Gantt chart-based procedure helps detect the source of problems. Picone believes that Interlem GP Omega's scheduling is better than that of its competitors. The lower price and flexibility of Interlem GP Omega's solution are other reasons he thinks that their customers choose Interlem GP Omega.

### Worldwide

- *Arel*: According to Michael Sakowicz, Project Manager at Arel, Arel has added business intelligence into their software that allows companies to better meet a company's key performance indicators (KPIs). The strategy of how they are working at Arel, taking a template and customizing it to their customer's processes and business, is what differentiates them from their competitors. Sakowicz believes that their customers choose Arel over alternatives because they can quickly change their software in reaction to their customer needs.
- *Datatex®*: Shannon McCarthy, Head of Business Development & Administration Americas at Datatex®, said that Datatex® has updated their user interface, and their ERP module now has some finite capacity planning and scheduling. They now also have a finance module and a mobile sales app. Key differentiators of Datatex® include strong scheduling, excellent transferability, and bottom up and actual costing. In addition, there is fairly limited customization in Datatex® implementations because the software has so much functionality and this makes it easier to upgrade their customer's software with new releases. McCarthy believes that customers choose Datatex®

because it is proven, the company knows their customers' manufacturing processes, and the software looks modern and is modern.

- *Just MES*: Just MES used to be owned by Up Solutions, and now it is owned by the Retelit Group. Lucrezia Rivetti, Sales Back Office Specialist at the Retelit Group, said that Just MES has added automatic planning capability and now includes machine learning algorithms to help companies analyze their processes. Differentiators of Just MES over their competitors include its lower cost, that it is easy to use and implement, and that it is ERP independent. Rivetti said that customers appreciate that they do not have to explain textile processes to their Just MES contacts at the Retelit Group since these contacts are very experienced with textile operations.
- *Porini*: Thorsten Steiert, a consultant at b4dynamics (an IT/ERP consulting company that works with Porini), said that Porini is a complete system. Key differentiators are that Porini is based on the Microsoft Dynamics 365 system, it has cloud functionality, and when new features are added to the Microsoft system, Porini also has these capabilities. Steiert believes that customers choose Porini since it works with all kinds of textiles and textile processes and is very flexible.

## Conclusions

There have been many changes to APS software in the last 2-3 years. Some company representatives said that their software now included some mobile device capabilities. A few companies said that their software is now fully web-based. Several mentioned that they have included artificial intelligence and business intelligence within their software solution.

In regard to factors that differentiate their software and why they believe their customers choose their software over their competitors, many APS software company representatives highlighted their company's knowledge of textiles. In addition, many also emphasized that their system has been developed to be used with textile processes, which resulted in less customization being required. These are all the advantages of why a textile company might want to choose an APS system that focuses on the textile industry rather than a general APS system.

APS company representatives also mentioned many other differentiators and reasons customers choose their system. Better scheduling was mentioned by a few representatives, as was lower cost. Some discussed cultural factors, like language knowledge or competency of area business practices. However, the reason most commonly given by company representatives was their responsiveness to customer requests.

Choosing the correct APS system is difficult. This paper provides a high-level comparison of potential options to help textile companies begin to narrow down possibilities.