

Position paper

demand absolute certainty

real-time just-in-time, just-in-sequence production execution



Demand absolute certainty

Winning business in the highly dynamic and globally competitive automotive sector allows zero tolerance for production and assembly. Only with fully integrated and synchronized systems between your production/logistics and the OEM can the full 360-degree visibility be assured that is fundamental for lean processes, reduced time to market and the increased flexibility that you need.

At Atos we understand the growing sophistication and diversity of your automotive OEM clients' requirements, which continue to evolve all the time. You must be able to anticipate and respond to these demands cost-effectively and without risk, through just-in-time inventory-holding and production scheduling.

Success depends on reliable, actionable, real-time intelligence. This cannot stop at the company boundary though. To be truly responsive, you need timely insight right from the OEM's shop floor.

The rising importance of just-in-time/just-in-sequence capabilities

Being able to manage production and delivery 'just in time' (JIT) and 'just in sequence' (JIS) is of paramount importance.

JIS is particularly complex when supplying configurable modules assembled by subassemblies and parts. Increasingly, production managers must handle high numbers of mechatronic variants and often software, such as that present in cockpits, with or without mobile handset control, satellite navigation systems, parking sensors and so on.

Each new requirement has its own implications for the make-up of components, for scheduling, and for the production line used. For operations to run efficiently and at full capacity it must be possible to see what is going on from the OEM's own production line right through to the supplier's dispatch. Any process bottleneck could mean the OEM's own operations being rendered idle.

With joined-up processes and end-to-end visibility:

- ▶ Production managers can plan effectively and optimize processes so that they run continuously and to capacity - ensuring that OEMs' requirements can always be met
- ▶ The exact conditions at any point during production can be traced and recounted on demand
- ▶ Multiple sites can be managed effectively, and the location of production adapted efficiently in response to shifting market demand and varying global costs
- ▶ Logistics and supply chain managers have complete and timely visibility, and can share information in real time with production teams to avoid any bottlenecks.

IT challenges

Until now, delivering these benefits has been challenging from an IT perspective. Technology environments that are inherently heterogeneous don't lend themselves to easy integration and information-sharing. As a result, it is likely that your IT department will have been forced, over time, to repeatedly modify and customize existing IT systems in order to adapt to the changing demands from OEMs.

Although your organization may have taken steps to consolidate and simplify its IT systems, the challenge to extract real-time information about OEM's latest requirements will be acute if you have adopted centralized ERP capabilities. ERP systems were not designed to provide real-time production insight in any event. Attempts to adapt these environments to cope with OEMs' changing demands have typically resulted in greater IT complexity, and less agility.

Now however Atos has arrived at a new way to provide real-time, 360-degree, end-to-end production visibility - whilst simultaneously simplifying the technology involved.

Atos has a deep understanding of today's automotive industry challenges, and extensive experience of how they affect OEMs and their first-tier suppliers. Drawing on our end-to-end portfolio of optimized, integrated solutions and associated value-added services we can help you achieve:

Increased flexibility in production

- ▶ Shorter model cycles, decreasing production quantities per model, and increasing model diversity are increasing the pressure on you to reduce the quantities of stock you hold, and to operate on a flexible 'just-in-time' basis

Supplier integration

- ▶ As you absorb development work from OEM customers, this increases the need for a real-time IT connection between your own IT systems and those of your clients, so you can optimize scheduling

Integrated information availability

- ▶ To maximize efficiency, you need tighter integration of development and production/logistics operations, and of supporting systems. But you need to achieve this in a way that reduces rather than increases the complexity and cost of your IT environment

Global production agility

- ▶ Remaining competitive means being able to respond quickly to changing market conditions and shifting global demand. This means you need to be able to adapt your production operations at short notice - for example, bringing new plants on line quickly and catering for region-specific model lifecycles
- ▶ As well as ensuring that systems and processes are integrated seamlessly and cost-effectively to provide real-time, actionable intelligence, Atos provides the full spectrum of consultancy, implementation and ongoing support services so that projects deliver the expected results. We also provide a complete suite of managed services, allowing you to focus on your core business.

Introducing automotive MES with optimized JIT/JIS from Atos and Siemens

The result of an exciting new partnership with Siemens.

At a glance

Atos, through a strategic new alliance with Siemens, has introduced a unique next-generation manufacturing execution system (MES) for automotive suppliers - with automated just-in-time/just-in-sequence (JIT/JIS) functionality.

For first-tier automotive suppliers, this ground-breaking solution enables fully joined-up processes and real-time production insight directly from the OEM's shop floor. Crucially it has been optimized to cope with today's shorter product cycles and growing model variants - and can be easily adjusted by your JIT/JIS team as OEMs call for changes.

What makes our approach different

Existing manufacturing processes rely too heavily on traditional ERP systems, which do not cope well with specific production logic or the need to provide real-time operational insight. As manufacturing evolves to become a much more dynamic environment, the emphasis is shifting to sophisticated, fit-for-purpose manufacturing execution systems (MES) which can adjust to varying sets of rules, extend efficiencies across multiple production sites, and monitor processes right down to the shop floor.

The new, next-generation MES from Atos and Siemens goes a stage further, providing functionality that has been developed specifically for the needs of first-tier automotive suppliers. This includes specialist, automated JIT/JIS capabilities.

Importantly, our solution harnesses standardized, modular software which can be implemented out of the box and integrated easily with existing systems. This relieves the burden on core ERP systems, and allows production managers to react quickly to changing customer needs without the need for system modifications.

Direct customer insight

With the new Atos-Siemens solution, you can now connect your production planning capabilities directly with the shop floor of OEM customers via our unique JIS Message Broker. This enables JIS requests to be received straight into your internal production systems - without intervention from centralized ERP systems.

Although our solution interfaces readily with all popular ERP systems - to ensure that accounting systems are correctly reconciled and that forward-planning is accurate - the new Atos-Siemens solution does not require the input of ERP systems to function. This greatly simplifies the way production operations are managed, and the work that has to happen to IT systems to enable it.

Solution highlights

Our unique automotive MES solution with optimized JIT/JIS removes complexity from first-tier suppliers' operations in a number of additional ways:

- ▶ The ability to cater for multiple manufacturing and supply concepts, including traditional batch delivery; stock production and sequenced shipping; and sequenced production and shipping - with complete just-in-time, just-in-sequence capabilities
- ▶ EDI format maintenance, and support for future OEM message formats
- ▶ Full process traceability, plausibility checks and systematic exception handling, to minimizing communication mistakes with OEM customers
- ▶ Production speed monitoring, to ensure operations are always in sync with OEM production lines
- ▶ The ability to adapt quickly and easily to evolving product complexity, new production scenarios and varying plant sizes.

A powerful partnership

The alliance between Atos and Siemens is an extremely powerful one, it combines more than 20 years of Atos heritage in manufacturing and process solutions with Siemens' deep knowledge of manufacturing shop-floor automation and of the automotive industry on particular.

By working in close partnership with Siemens, Atos is able to fast-track first-tier automotive component suppliers to the new efficiencies and highly responsive customer delivery being demanded of them today.

Beyond the technology

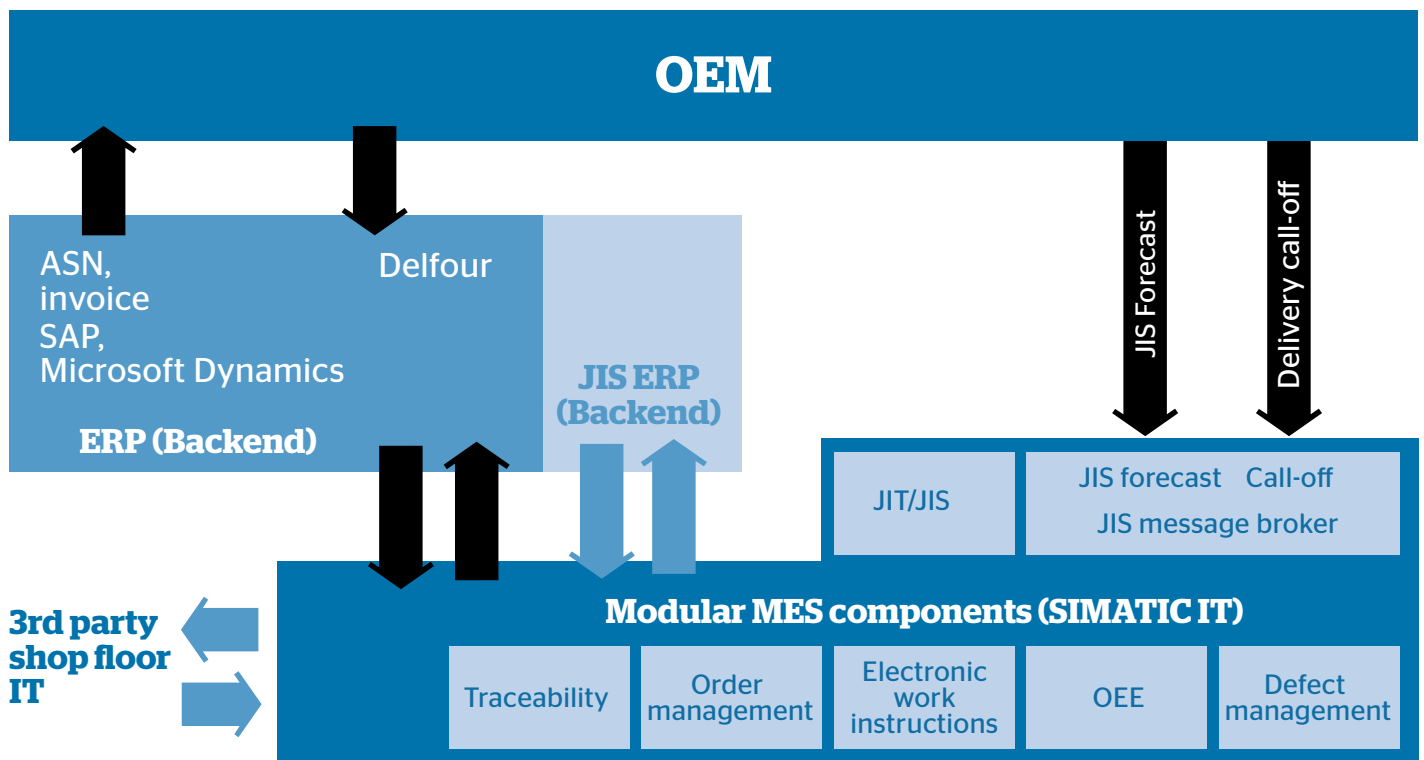
Real transformation relies on more than pure technology. By working with Atos, you will benefit from multi-faceted best practice, expert implementation services, proactive ongoing support and a complete suite of managed services, in addition to standardized, easily integrated software.

The complete package

As an independent business technology specialist, Atos always looks at the bigger picture. We deliver a complete and end-to-end package that meets every requirement you have for just-in-time, just-in-sequence production execution.

As part of this complete package, we provide:

- ▶ A targeted and efficient way to achieve lean, just-in-time practices, as well as repetitive manufacturing processes. We will ensure you do this in a way that is practical, affordable and flexible; right for your industry and specific needs; and which harnesses existing technology investments
- ▶ Direct access to proven best practices. Draw on our considerable experience to discover new and better ways to manage processes, optimize efficiencies and impress customers, based on known successes across the automotive sector and the wider manufacturing industry
- ▶ A perspective beyond production - helping you to tighten resource management, enable pre-emptive action, reduce errors and curb waste. By adopting leaner practices all round you will be in a better position to cut costs and minimize your company's exposure to risk (for example by reducing stock-holding).



Our solution in close up

A single, integrated, end-to-end platform.

For step changes in manufacturing flexibility and efficiency, tier-one automotive suppliers need very tightly integrated operations across processes and systems that have previously been regarded as self-contained.

To ensure unimpeded information flow, the Atos-Siemens solution enables all production/delivery processes to be viewed and managed via a single, integrated solution platform.

This platform, which underpins our broad suite of solutions, is the very latest version of Siemens' acclaimed manufacturing execution system, SIMATIC IT. This has been enhanced with special functionality geared to the needs of the automotive industry. New components provide optimized JIT/JIS functionality for first-tier suppliers.

The fit-for-purpose and highly scalable MES core conforms to the ISA S95 standard, the international standard for the integration of enterprise and control systems.

Accelerated deployment with reduced customization

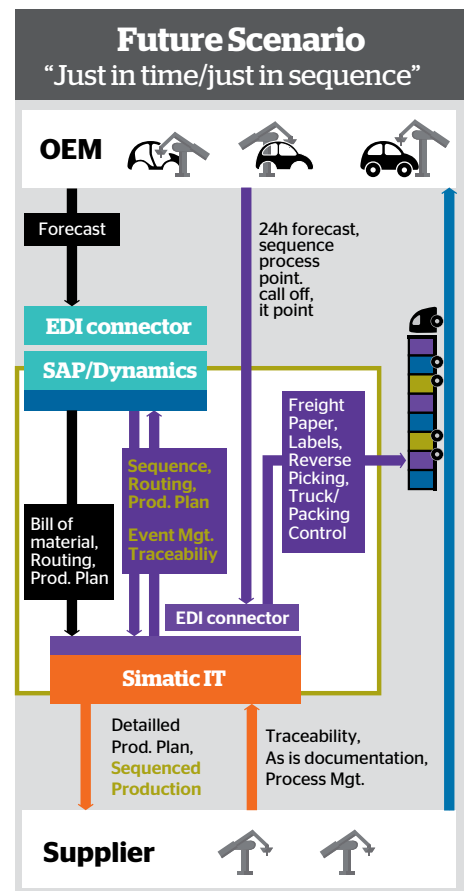
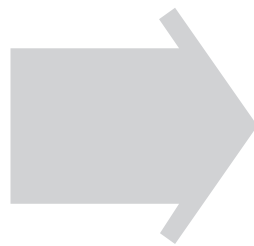
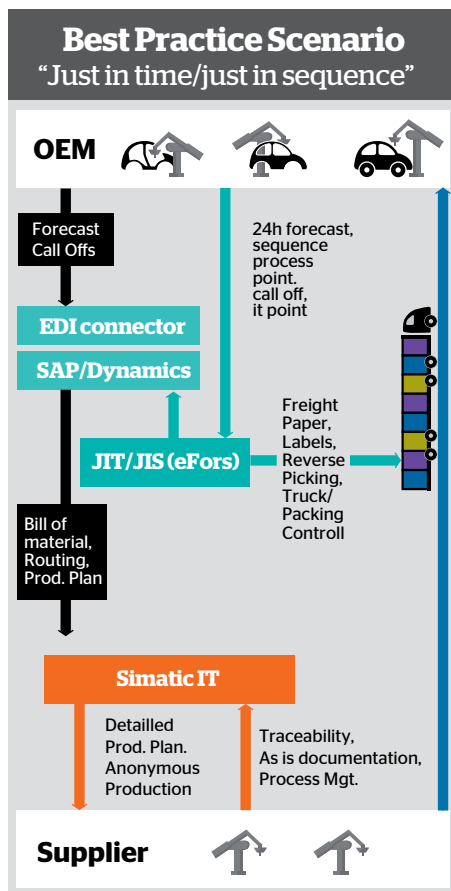
The Atos-Siemens solution allows tier-one suppliers to implement 'best practice' production management capabilities out of the box, and meet the needs of automotive OEMs today.

The following features are included as standard:

- ▶ Full MES features which can be activated when required
- ▶ Standardized end-to-end message flow (from OEM to shop floor)

- ▶ Automotive supplier ERP template (SAP, MS Dynamics)
- ▶ Standardized ERP-MES interface
- ▶ Pre-defined order management workflows
- ▶ Individual production/supply concepts supported
- ▶ OEM-specific label formats for the same product/frame/rack.

This enables accelerated deployment so that suppliers can start to enjoy the benefits quickly. By minimizing the level of customization that is required, the Atos-Siemens solution ensures that software maintenance is highly simplified - keeping costs down. The solution is extremely flexible however. Organizations have the option to tailor or add to any of the standard facilities as required.



Building on our depth of experience

Having worked with clients right across the manufacturing industry, Atos has unique insight into how production and delivery models have changed and continue to change.

Although the combined Atos-Siemens offering is brand new, our heritage in delivering transformational solutions and services to manufacturers, including those in the automotive sector, goes back decades.

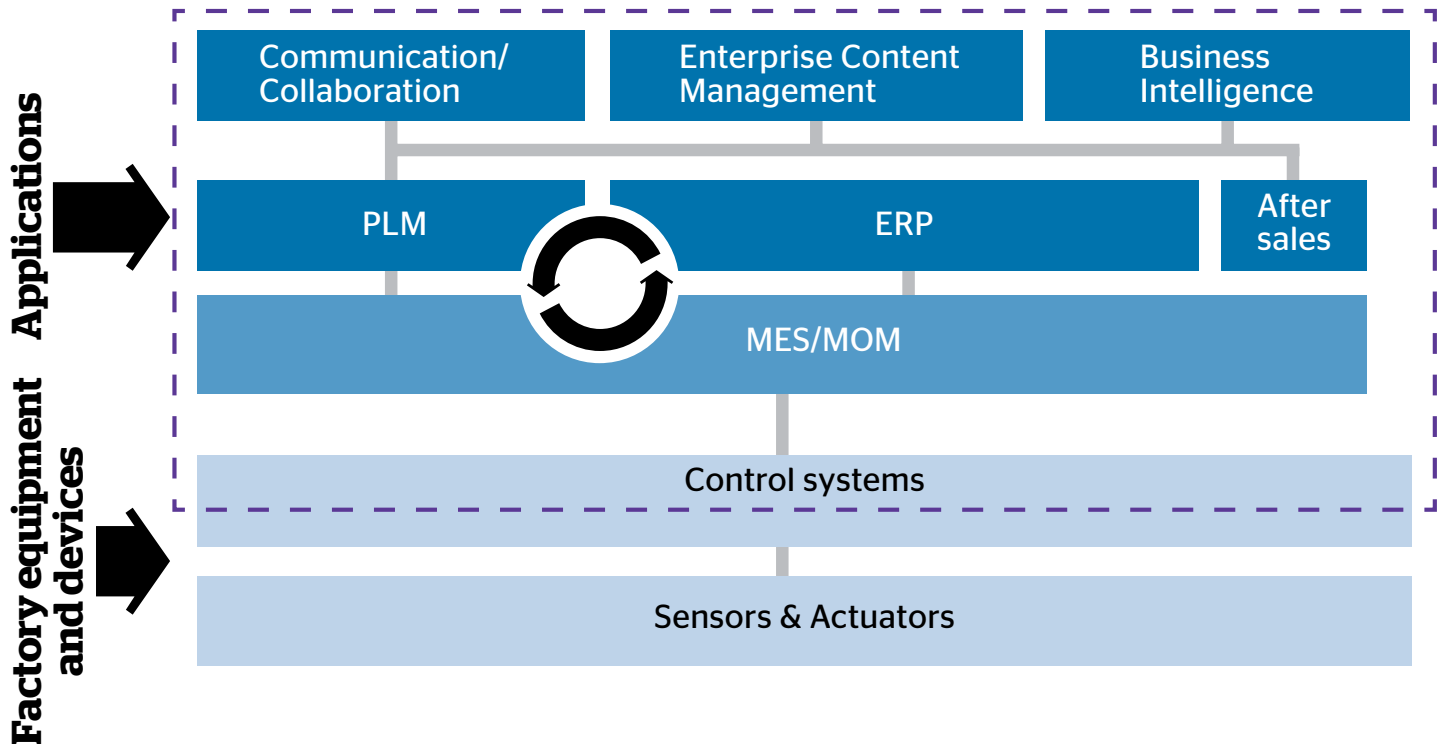
In recent integrated manufacturing engagements in the automotive sector, Atos clients have made significant and quantifiable advances:

- ▶ Cost reduction: 2 - 5%
- ▶ Productivity: 10 - 15%
- ▶ Resource utilization: 10 - 20%
- ▶ Stock reduction: 25 - 50%
- ▶ Throughput time: 10 - 20%
- ▶ Delivery reliability: 5 - 10%.

Transformation in action

- ▶ Pinpoint precision in order control was essential for a global provider of components to the world's leading automotive brands. Beginning with its European production facilities, Atos established the blueprint for a standardized MES/MOM approach, which now allows them to respond to dynamic order streams with unprecedented agility
- ▶ An award-winning truck builder runs plants in both the USA and Europe. With a new plant on the drawing board they wanted to make it an object lesson in smart information integration. Partnering with Atos, they established a complete architecture model for ERP, MES/MOM and PLM extending right through to the machine control layer. As a result, they have achieved unprecedented production agility and extremely smart reporting

- ▶ Despite great products and a highly motivated workforce, order fulfillment was at risk in this modern Central American assembly plant. Atos consultants produced an incisive and actionable response in just a few weeks, showing how a single application architecture can span ERP, MES and PLM to produce, among other benefits, clear factory simulations for senior management.



Why Atos

Atos has been steadfastly delivering transformational solutions and services to the manufacturing industry, including the automotive sector, for more than a quarter of a century. We have deep knowledge of manufacturing processes, and the technologies needed to optimize them.

We offer complete solutions too. Atos offers best-of-breed solutions, services and extensive experience across entire manufacturing environments - encompassing ERP and product lifecycle management as well as MES and JIT/JIS capabilities - as part of a fully integrated approach to more efficient and responsive operations management.

We can help you design, build and operate end-to-end solutions that provide tangible payback on your investment, and reduce risk to the business. Our holistic approach ensures smooth delivery and transition. It also means we can integrate with and add new value to your existing legacy systems wherever appropriate.

The right solutions from Atos will reduce inventory, liberate cash, optimize resource usage, and accelerate time-to-market. We can also help cut IT costs and overheads, by harmonizing and consolidating existing solutions from across all company plants and facilities.

We take a global perspective too. Like many of our manufacturing clients, we are an international company - which means we are able to cater for local differences whilst pursuing international consistency.

Our MES credentials

Atos offers comprehensive, proven global manufacturing execution system (MES) operation and support. Our MES capabilities are underpinned by the Atos solid and actionable M4MES methodology. This patented and proven methodology, developed by Atos specialists, formalizes our approach for manufacturing execution environment, drawing on our vast market experience, best practices and industry sub-sector libraries.

Our MES-specific services include:

- ▶ ITIL-compliant global delivery support based on the Atos shop floor service delivery model - from service desk and MES staffing, to consultancy, continuity services, and a full managed delivery service
- ▶ Flexible resource pool for project scaling according to need
- ▶ Change services for managing and executing MES change requests
- ▶ Flexible SLAs - Atos has a MES Competence Center which has been in place for more than 10 years. Our support service is based on upfront agreed KPIs with the customer and our terms are highly flexible. We can service customers during office hours or around the clock, and organizations can choose from a menu of available services which can be calculated on a fixed-price or time-and-materials basis.

Our best-of-breed approach

In July 2011 Atos acquired Siemens IT Services and Solutions, enabling us to grow our center of excellence for sustainable integrated manufacturing, with particular strengths in the automotive sector. Our new optimized MES offering with JIT/JIS capabilities is a direct result of this merger.

A collaborative engagement

Atos is much more than a technology provider. We can advise you from the earliest point in your decision cycle, direct and manage the implementation, and provide a complete managed service for all of your IT.

Unlike other technology providers, we work in a highly collaborative way to capture our customers' needs, establish the core business drivers and key performance indicators you are seeking to address with any new solution. We use interactive workshops with all of the main stakeholders to get the full picture before we make our recommendations.

Once we have assessed your current operations and your ongoing needs, we will map this formal analysis against the best practices of your automotive industry peers.

Having advised on the optimum combination of solutions and services, we can also discuss delivery options - for example whether these are run on your own premises or in a secure Atos data centre, and whether you would like us to provide a complete applications management service for you, so you can concentrate on your core business. Most of our customers choose this option.

Next steps

Because Atos understands that no single technology solution can deliver the transformation an organization is seeking, we recommend that you talk to us before setting your agenda.

About Atos

Atos SE (Societas Europaea) is an international information technology services company with annual 2012 revenue of EUR 8.8 billion and 76,400 employees in 47 countries. Serving a global client base, it delivers Hi-Tech Transactional Services, Consulting & Technology Services, Systems Integration and Managed Services. With its deep technology expertise and industry knowledge, it works with clients across the following market sectors: Manufacturing, Retail & Services; Public sector, Healthcare & Transports; Financial Services; Telecoms, Media & Technology; Energy & Utilities.

Atos is focused on business technology that powers progress and helps organizations to create their firm of the future. It is the Worldwide Information Technology Partner for the Olympic and Paralympic Games and is quoted on the NYSE Euronext Paris market. Atos operates under the brands Atos, Atos Consulting & Technology Services, Atos Worldline and Atos Worldgrid.

For more information, visit: atos.net

For more information see www.atos.net/jitjjs, or contact: dialogue@atos.net

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