Automotive Toolchain | Oracle Solutions

Information Age Applications for Automotive Original Equipment Manufacturers

Oracle provides a complete, integrated set of solutions to meet the complex needs of industrial manufacturers. In addition, we provide the access to information and flexibility to effectively anticipate and respond to rapidly changing market conditions. Here’s a look:

INTEGRATION AND ANALYSIS
A standards-based integration framework along with the most complete master data management solutions allow the easy orchestration of cross-functional business processes. In addition, best-in-class performance management and business intelligence applications provide business insight and link operational decisions to strategic objectives.

HUMAN RESOURCES
Manage, optimize, and leverage the workforce throughout the employees' lifecycle across your enterprise through automated, industry-tailored practices for human capital management.

FINANCE
Provide businesses with real-time visibility and control and reporting processes while providing complete governance, risk management, and controls.

CAPTIVE FINANCE
Help captive finance companies be more customer-focused by obtaining a comprehensive understanding of customer needs, profitability, and risk exposures.

PRODUCT LIFECYCLE MANAGEMENT
Accelerate innovation, reduce costs, enable design collaboration with customers, partners, and suppliers, and control all product information from concept to end-of-life.

SALES, MARKETING, AND OPERATIONS PLANNING
Provide brand strategies, market opportunities, and optimize channel strategies through an integrated and unified view of the customer.

ORDER MANAGEMENT
Ensure complete and accurate capture and execution of orders across all channels for increasingly complex products and services.

SUPPLY CHAIN PLANNING AND EXECUTION
Provide real-time sales and operations planning capabilities to drive accurate forecasts while optimizing material and resources constraints across a global supply chain.

MANUFACTURING AND ASSEMBLY
Maximize efficiency, product quality, and responsiveness to demand fluctuations through lean, flexible manufacturing processes.

LOGISTICS AND TRANSPORTATION MANAGEMENT
Reduce inventory and transportation costs while meeting customer delivery expectations.

AFTERMARKET SALES AND SERVICE
Optimize product performance and expand service revenue through comprehensive, efficient service offerings.

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Automotive Toolchain | eTrice

- Eclipse eTrice provides an implementation of the ROOM (Real-Time Object-Oriented Modeling) language together with editors, code generators for Java, C or C++ code and exemplary target middleware.

- The model is defined in textual form (Xtext) with graphic editors (Graphiti) for the structural and behavioral parts (i.e. state machine)
IoT | Transport & Logistics

Logistic Services Gateway

Smart Container

RFID Readers

Handheld & Wearable Devices

Internet of Things

Communication Infrastructure

Smart Services Gateway
• Barrier-type bolt seal
• RFID: ID-number + integrity
• Bar code
• Battery 1 year transmitting
• 50 cycles
• Range up to 50 meters
• 915 MHz + 2.4 GHz
• Data transmission rate 500 kbps
• Storage 64 bytes
MC75i, TC65i/TC65i-X, TC63i

- Powerful Processor
- Large Memory
- Quad-Band
- EDGE / GPRS Class 12
- FOTA
- Java™
- TCP/IP
- SIM Access Profile
- Tunneling Mode
- Industrial Interface
- USB
- RIL Driver
- RLS Monitor (Jamming Detection)
To ensure maximum safety for all passengers, Copenhagen Airport continuously monitors local weather conditions. In addition, airport operations regularly measures weather-related runway conditions, such as temperature and moisture, in order to store and analyze data and relay status and safety information to incoming flights.
Smart Grid | Sensor Web
Project Bixby

JavaRTS 2.1 as Execution Environment for the Controllers in Volkswagen-ERLs Audi TTS Automated Rally Vehicle
In Vehicle Java: Sensors and Gateway

センサー・ネットワークのプラットフォームとしてのJava

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<th>Sensors</th>
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等々……
In Vehicle Java: Infotainment

自車内でのネットワーク・サービスプラットフォーム

Network Service
• GPSによるロードサービス
  • 洗車情報
  • ガソリンスタンド（価格情報）
  • レストラン/エンタメ情報/店舗情報/スポット
  • 最新マップ/工事情報
  • 場所情報のシェアリング
• 局所的な気象情報（GPS + Wiper）
• アプリケーションの追加
• ネットワークエンタメ情報
  • インターネット・ラジオ
  • マルチメディア・プレイリストのストリーミング
• センサーデバイス経由によるカーメンテナンス情報

etc.
CES 2015 | Audi Cars Powered by Java

https://youtu.be/lDEpAVgS-js
Where is Java used in Automotive?

• Tools and Factory Automation
• Sensors (often specialized solutions), Telemetry and Data Transfer to the Cloud
• IVI (In Vehicle Infotainment)
• No Real-Time or Safety-Critical usage other than a few concept cars or demonstrators, nothing in production
Why Java lost its ”Drive”?

- JavaRTS and Safety Critical JSRs either stuck in J2ME or inactive.
- Mobile and Embedded JVMs not stable and reliable enough compared to e.g. C/C++. Automotive experts who worked with them or evaluated say it’s at least another “few years”, assuming vendors/community pursue rather than just sue 😊