

An Internet-based Collaborative Platform for Managing Manufacturing Knowledge

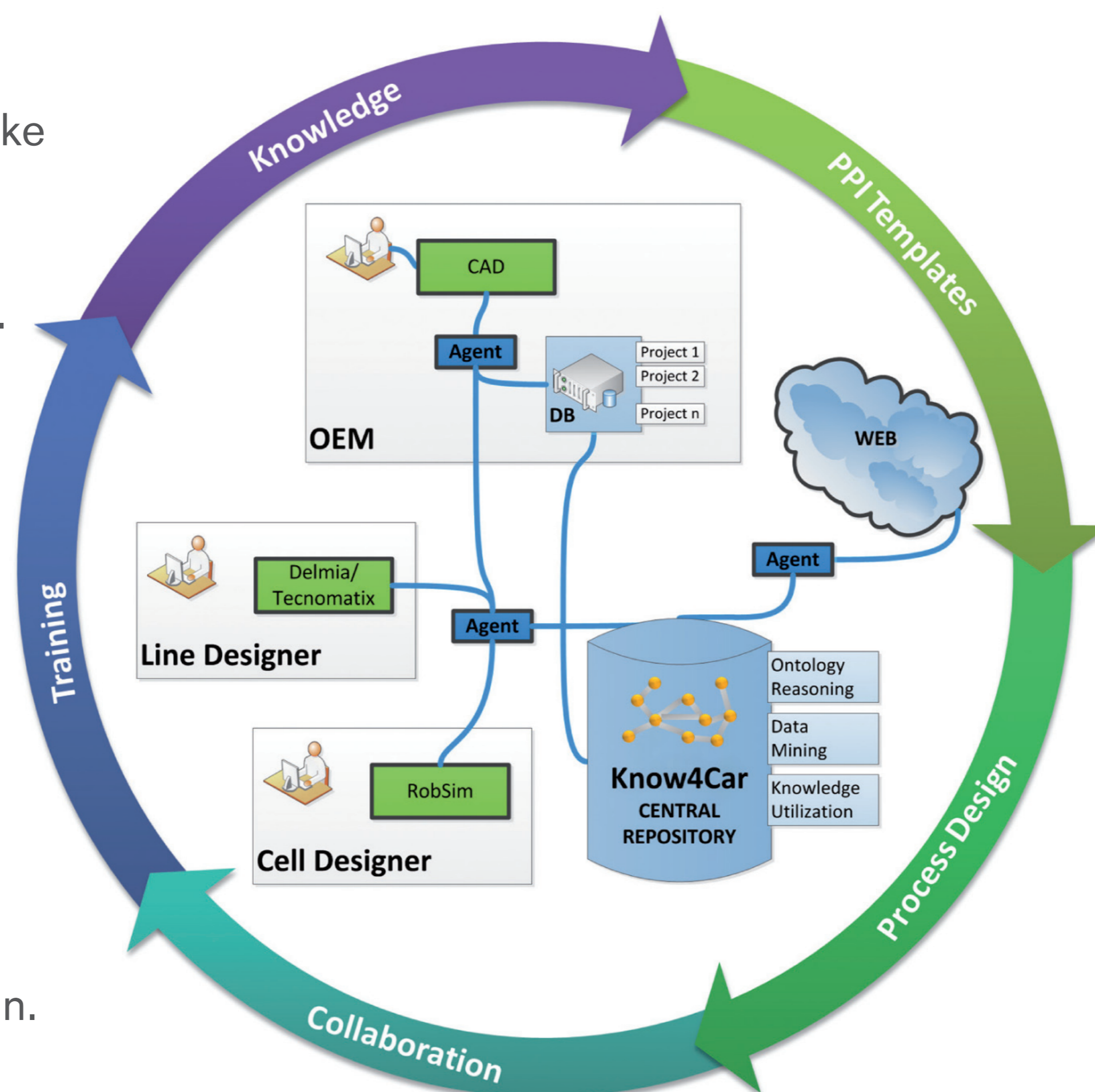
Know4Car



Key innovation

The Know4Car project will make knowledge management and collaboration more effective throughout a product lifecycle. It will support capture and systematic organization of knowledge as manufacturing templates.

Know4Car will develop faster, easier, error-free UIs for data entry/checking in the shop floor along with serious games options for instantaneous knowledge retrieval, training and/or design.



Current digital manufacturing information and communication platforms have a long way to go for effectively addressing engineering knowledge management.

Today's higher level management systems are often detached from the engineering knowledge, while product life management systems provide no link to performance indicators, such as cost, time, and quality.

Technical approach

The Know4Car platform will integrate four components:

Manufacturing Process Knowledge

An ontology-based database. Knowledge related to process design may be structured and organized and managed more efficiently.

Agent-based Engineering Collaboration

The core component will utilize autonomous software agents to assist the organization and distribute the engineering knowledge. Know4Car will support engineers and technical teams by reacting to changes of projects development and evolution.

Extended Engineering

Know4Car will manage the way knowledge is exchanged and distributed among OEMs, system integrators and suppliers. A series of rules will support project managers, data workflow and integration.

Advanced User Interfaces and Training

will streamline the interaction and the performance of the engineering teams and the available IT tools. Different types of interfaces will address the needs of different work groups. Augmented-Reality techniques and tools will provide faster training and feedback to operators and technicians.

Demonstration and Use

Two pilot cases are defined and planned to demonstrate the added value of Know4Car:

Automotive Assembly

This pilot case will evaluate the collaboration of engineers and operators in an automotive assembly process. It will include process design using historical knowledge, serious games and AR training system, and shop floor to production management and communication.

Extended Engineering Collaboration

In this case the engineers from the suppliers' side will work with OEMs and complete certain predefined tasks by using Know4Car. The validation criteria will be both quantitative and qualitative. Special specifications requirements will form the test.

Scientific, Economic and Societal Impact

Capturing, organizing and distributing manufacturing knowledge will become more efficient. Know4Car will reinforce European leadership in knowledge-driven platforms, tools, methodologies, product development and manufacturing. Autonomous software agents will accelerate product design and manufacturing process, enabling new products in a considerably shorter time-to-production and time-to-market.

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Know4Car Project Partners

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Centro Ricerche Fiat SCPA, Italy
Karlsruher Institut für Technologie, Germany
Fundacion Tecnalia Research & Innovation, Spain
PDTEC AG, Germany
Innovazione Automotive E Metalmeccanica SCRL, Italy
Ontoprise GMBH, Germany
Chalmers University of Technology, Sweden
EDAG GMBH & CO. KGAA, Germany
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Know4Car Key Features:

Time required for identifying existing relevant knowledge, decreased by 60%.

Enable faster process design by 20%.