



KoBaS



Knowledge Based Customized Services for Traditional Manufacturing Sectors Provided by a Network of High Tech SMEs

Objective

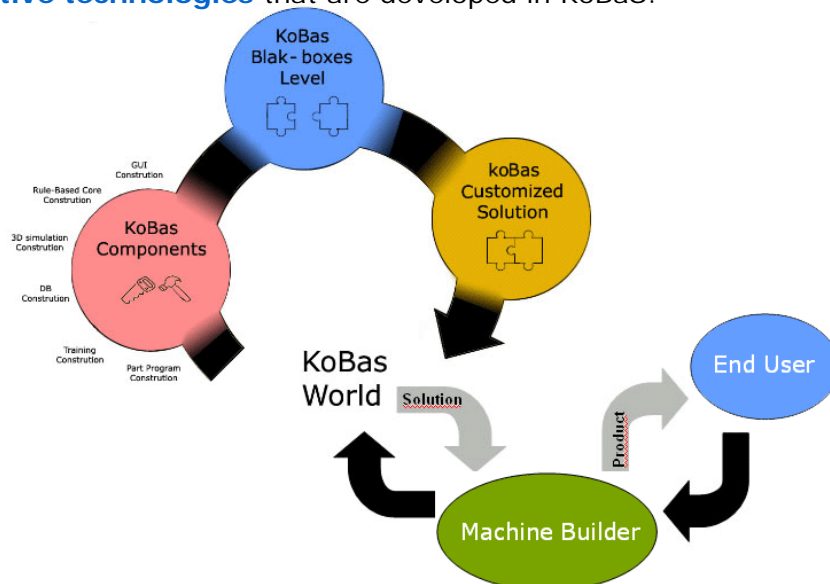
KoBaS aims to provide a breakthrough in the current practices in the use of **manufacturing machines**, developing a set of generic tools of new conception meant to enable the quick customization of software solutions in order to provide, **new advanced and powerful functionalities**, machine embedded, from task and process planning, machine maintenance, training, and management support. Thanks to this innovative platform, it will be possible for machine-tools and other production equipment to become intelligent, capable to communicate their environment and characteristics, to understand and work with digital models of the parts to produce and to enable an efficient dialog with their operators.

Vision

The **vision** is to create a **NETWORK OF HIGH TECH SMEs** that, thanks to a new brand of instruments developed within the project, will equip manufacturing Machines with innovative customized software for machine task and process planning, maintenance, training and management support. This service is thought for Machine Builders, that will thus be able to sell "intelligent machines"

Techniques

The project will use **techniques** such as Virtual Reality, 3D & Discrete Events Simulation, Knowledge Based System and Finite Element Analysis, evolved, combined and optimized in their interaction thanks to **a new brand of innovative technologies** that are developed in KoBaS.



The SMEs' point of view

Thanks to this new core of innovative tools, the **manufacturing machine** itself becomes intelligent, being aware of its state and being able to provide the actual goods, starting from the virtual model of the goods to be produced and naturally interacting with the user.

The KoBaS Network thus provides to **the manufacturing machine builder**, a set of KoBaS tools that will be sold, by the machine builder, to the end-user together with the manufacturing machine. The end-user of the manufacturing machine himself can ask to the KoBaS Network a **personalized solution** for his particular environment and final products.

SMEs' Network

KoBaS scheme

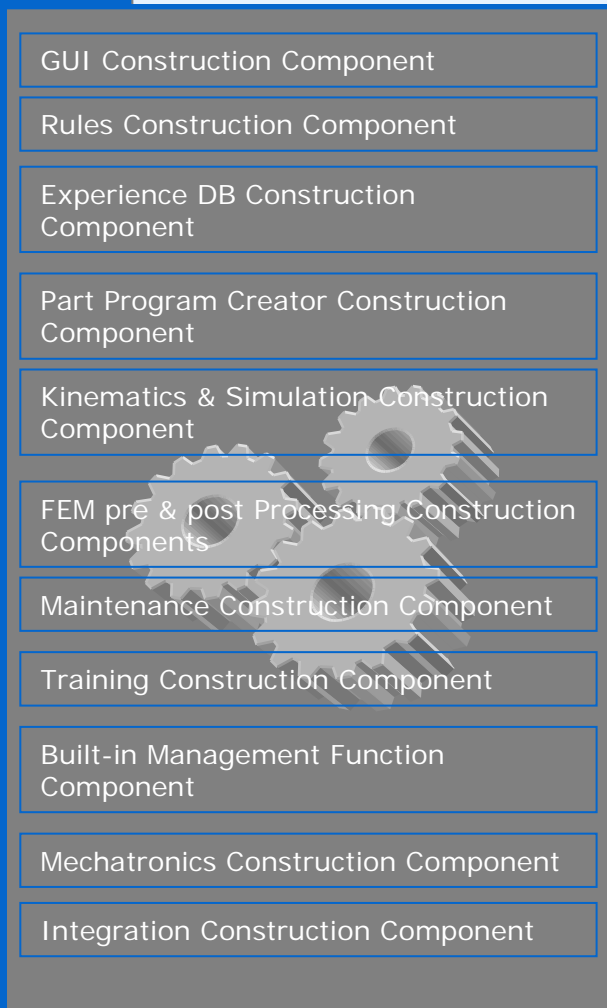
The Smes' Network advantages:

- Gain competitiveness
- Increase the range of service offered
- Face global market challenges
- Knowledge sharing
- Development synergy

On the left side of the schema, the basic Components of KoBaS are highlighted. These are tools developed within the project for the Network of High Tech SMEs. These Components represent the enabling technologies core, used by the Network of SMEs, to provide customized software tools for a large number key industrial European sectors of manufacturing machine builders and users.

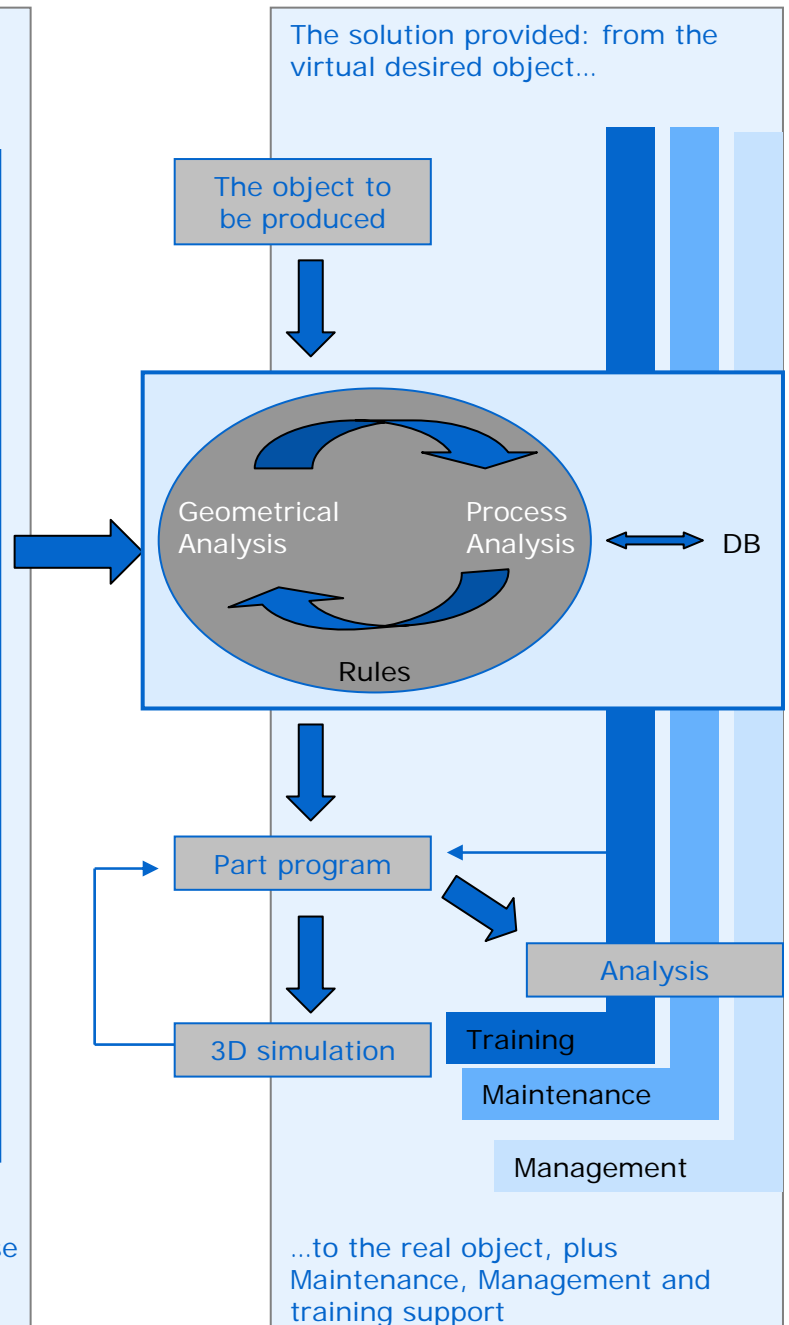
On the right side, the schema shows a general architecture of a KoBaS solution implemented for a specific manufacturing machine. The software, realized by the Network with the building Components and customized for the machine, is installed on the machine itself, providing a whole set of solutions: from Part Program creation to Maintenance service and so on.

The Machine Builder or the traditional SME has asked for a KoBaS service to be provided



The SMEs Network, thanks to these Components, provide the Solution

The solution provided: from the virtual desired object...



...to the real object, plus Maintenance, Management and training support

Project Consortium

The research work needs to touch the heart of many different disciplines, putting into practice a transversal integration between new technologies and methodologies again to be developed. The KoBaS project addresses these issues by bringing together a consortium, led by **High Tech SMEs**, of foremost **Manufacturers** and **Users of Manufacturing Machines**, supported by the expertise of several **Academic and Research Institutions** whose competencies are multidisciplinary and complementary.

The project consortium involves **21 partners from 10 countries**, in which 6 partners are European Institutions of R&D: RPK (Germany), Inesc Porto (Portugal), ITIA-CNR (Italy), EPFL and ETH Zurich (Switzerland), Tekniker (Spain).

Chinese extension

The **extension of KoBaS to China** is meant to propose a significant added value to the project. From the European consortium point of view, technical cooperation with Chinese consortium will lead to a considerable extension of the project results and technical value.

As **China is becoming the workshop of the world**, European SMEs are called to invest there for five main reasons:

- First, considering China as a source of components/services or contract manufacturing to outsource
- Second, with a population of more than 1,3 billion, as an attractive huge potential market.
- Third, representing 40% of total Asia population --the most promising emerging region globally-- as ideal base to serve international markets.
- Fourth, and particularly for hi-specialized SMEs, to follow customers -- mostly MNCs-- transferring there part of their operations, and be present on the spot as a supplier.
- Last, but not least, China is a fertile ground where competitors develop.

The first reason calls European SMEs to China to **develop a network of local manufacturers**. The following three to direct manufacture and supply. The latter calls **SMEs into the market** to maintain competitive edge in face of competitors. Both Network development and Technical achievements of a joint cooperation in KoBaS will benefits European SMEs, and provide them with the opportunity to develop competitive contacts and apply new manufacturing techniques.

Chinese partners

HUST- Huazhong University of Science & Technology	entre- National Engineering Reserch Centre of CAD Supporting Software Technology	TySoft- Wuhan Tianyu Software Co, Ltd.
SANOH- Shanghai Mechanical Manufacture Co, Ltd	KEDA- Guangdon Dynamo-Electric Co, Ltd.	GRM- Guilin Rubber machinery Factory



華中科技大學

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中文版 English

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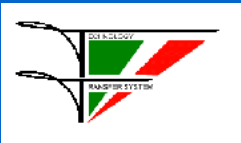
Kobas
Partners

Azevedos Indústria
MÁQUINAS E EQUIPAMENTOS INDUSTRIAIS, S. A.

ZENON
AUTOMATION TECHNOLOGIES

scm e group

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Systems and Computer
Engineering of Porto
<http://www.inescporto.pt>

Zenon
<http://www.zenon.gr>

IICS Industrial Innovation
Consulting Services s.r.l
<http://www.iics.it>

TTS Technology Transfer
System s.r.l.
<http://www.ttsnetwork.com>

CADCAMation
<http://www.cadcamation.ch>

Subercentro
<http://www.suberus.com>

URPEMAK S.L
<http://www.urpe.com>

RPK - Institut für
Rechneranwendung in
Planung und Konstruktion
<http://www.rpk.uni-karlsruhe.de>

Tekniker
<http://www.tekniker.es>

KMS Business Serwis Sp.
Z.oo



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Máquinas e Equipamentos
Industriais SA
<http://www.azevedos-ind.pt>

Unity AG
<http://www.unity.de>

Intelliact
<http://www.intelliact.ch>

ITIA - Istituto di
Tecnologie Industriali e
Automazione
<http://www.itia.cnr.it>

ZPE (Zentrum für Produkt
Entwicklung) at ETH
Zurich
<http://www.ethz.ch>

Desnik

Wittmann & Partner
Computer Systems
<http://www.airg.ro>

SCMGroup
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EPFL - Ecole Polytechnique
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<http://www.kobasproject.com>