REV'ENGE

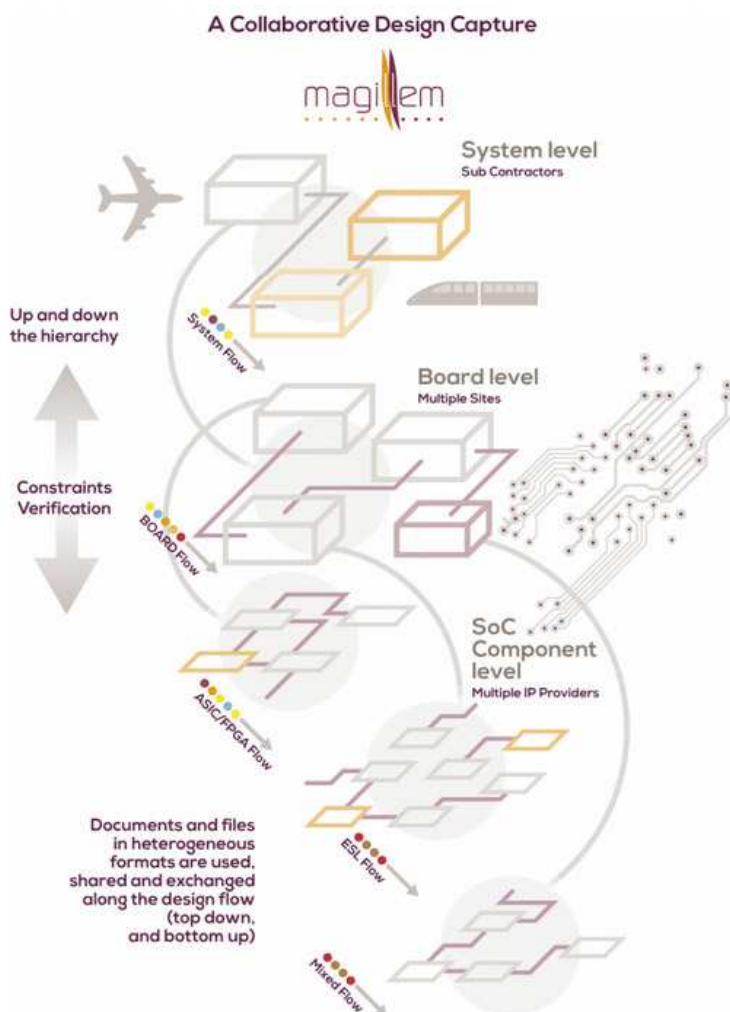## "MAKE NO MISTAKE, IT'S NOT A REVENGE… IT'S A RECKONING"

Capitalizing from its strong experience in the integration of intellectual property blocks on the semi-conductors assembly platforms, Magillem is deploying its solution towards systems integrators. Up to now no real time production flow tracking solution was available on the market. This was not due to a lack of tools covering these needs but rather a lack of standards enabling communication links between point tools and CAD tools. Now Magillem enables the deployment of solutions using the IP-XACT IEEE1685 description standard; it offers the capacity to precisely describe all the components and tools used in the production chain.

Magillem brings, in a non-intrusive way for the existing flow, the concept of communication backbone by integrating "business objects" used all along the flow. Data specific to tools and components are integrated as metadata in the IEEE specifications open standard. This solution is a true revolution in the management of the electronics chain since it allows a manufacturer to handle its design flow independently from proprietary formats attached to the tools used in the flow.

The systems are composed of descriptions in:

- Mechanics
- Mechatronics
- Electronics
- Software

In addition a global approach is synonymous of cost reduction and an increase in reliability and modularity.

A Collaborative Design Capture

magillem

System level
Sub Contractors

Up and down the hierarchy

System Flow

Board level
Multiple Sites

Constraints Verification

BOARD Flow

SoC Component level
Multiple IP Providers

ASIC/FPGA Flow

Documents and files in heterogeneous formats are used, shared and exchanged along the design flow (top down, and bottom up)

ESL Flow

Mixed Flow

For teams working on very specific parts of a project, a unique format allows an open communication flow which at the end facilitates design and requirements revues. Companies using the CMMI methodology (Capability Maturity Model Integration) will finally find in the Magillem offering the way to unlock the electronics part in the definition of a project. Data evolve, are being controlled and passed along between different tools along the communication backbone, like a stick during a relay race. Obsolescence management of hardware and software components of an equipment generates hard solving problems to users. The challenge is to reconcile a shorter and shorter component life – a 4 year average – with the maintenance of an electronics system which exceeds 10 years. This is the same challenge for the software modules, which are very difficult to maintain on the long term.

THE NECESSITY TO KEEP TRACK OF ALL THE DETAILED REFERENCES OF THE BILL OF MATERIALS RESULTS FROM THE ACCELERATION OF THE LIFE CYCLE OF SYSTEMS.

Products on a shelf tend to rotate faster and faster and the ruling of the consumer goods markets (multimedia, telecommunication, computers etc..) over technologies results in shortening their life cycle. Today it becomes

necessary to elaborate a detailed and precise description of the components used on the platform in order to put in place an economical and technological monitoring process to control cost and availability. The increase of the number of software controlled processes within integrated systems changes the rule of the game because software has a much shorter life cycle than hardware. The rigorous identification of embedded software versions becomes a priority and must be integrated from the beginning into the product definition. Updates must be traced by a version number and files definitions must be located when needed.

THE NECESSITY TO CLOSELY FOLLOW THE INITIAL DESIGN RULES MUST SURVIVE THE BREAK UP OR THE TURNOVER OF THE DESIGN TEAMS.

Obsolescence applies to skills and teams as well. Within an industrial context which tends to favor acquisitions and restructuring, it is mandatory to be able to trace the evolution of a system through new regulations, new configurations, using new components or involving new maintenance teams. The proposed solution in Rev.Enge guaranties the coherence of the platform description, the documentations/specifications and source code, and furthermore follows their evolutions. The data pertaining to the state of the components, the LBO (Last Buy Order), and EOL (End of File) can be now associated to the precise description of the product.

ASSISTANCE TO THE DESIGN PROCESS IS REQUIRED DURING THE MIGRATION OF A SYSTEM TOWARDS A NEW GENERATION.

During the re-design or re-fit of a platform it is crucial to follow a reliable path of development which promotes the long term viability of a machine in the field. Thanks to the relationship between the specifications and the architecture of the platform, Rev.Enge offers a complete solution based upon the open standard IEEE 1685 IP-XACT with the following objectives:

- Facilitate the propagation of the characteristics (timing, time constraints, surface, operation security constraints) through the hierarchy
- Reassemble functionalities
- Guaranty a high level of quality and reliability by controlling the process of the platform design
- Guaranty that data will never be captive of a proprietary tool format

Rev.Enge: Capture and trace all the information on your designs
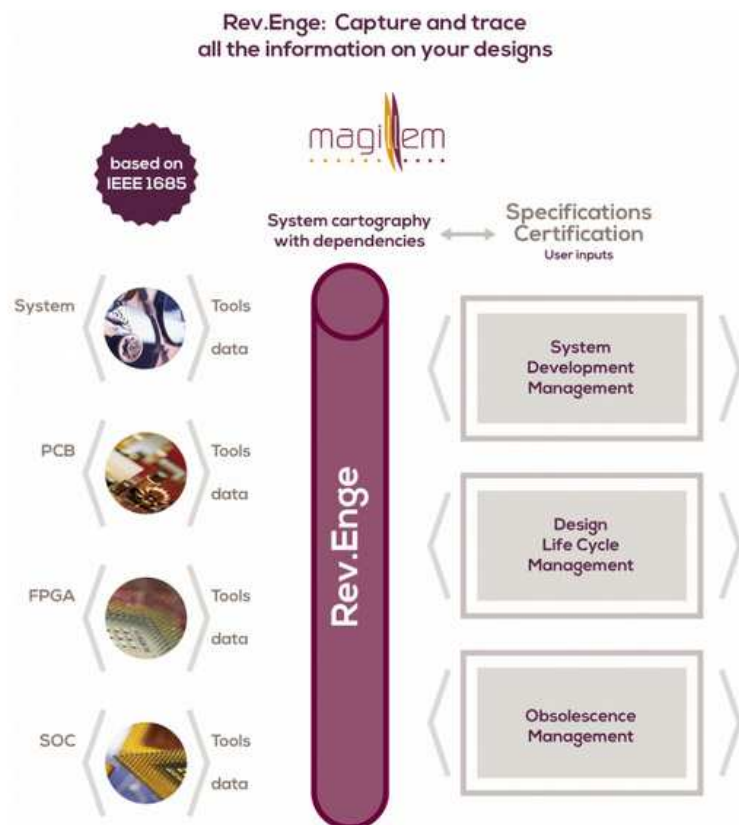
ASSISTANCE TO VERIFICATION SHOULD ALLOW TRACEABILITY OF REAL REQUIREMENTS ON THE PRODUCTION LINE.

The expression of the requirements generates a large number of documents whom coherence and quality are the key to the success of a project. Traceability of documents allows not only to validate and verify the proposed solution but also to facilitate and tightly control the future evolution. During the description of a platform, Rev.Enge allows the designer to:

- integrate the requirements of the projects through the hierarchy
- verify the following of the requirements
- manage the changes of the requirements
- Maintain the traceability of these requirements

This methodology guaranties consistency, coherency and the traceability of the platform requirement all along its life cycle.

THE MANAGEMENT OF THE COMPONENTS LIFE CYCLE MUST BE LINKED TO THE DETAILED DESCRIPTION OF THE PLATFORMS

Preventive management (or pro-active) means to plan the obsolescence before it becomes a fact in order to diminish its probability or limit its impact. Rev.Enge allows the description of a platform, meaning not only of its functionality and its architecture, but also a reference to some specifications, requirements and components being used. This technology allows thus to connect domains with different life cycles (platform: long and components: short) and as a result to anticipate obsolescence by planning a solution ahead to correct the problem.