

MODEL DRIVEN REQUIREMENTS Engineering

MDRE* Framework for KNOWLEDGE-BASED ENGINEERING Software System Development

Project Aims & Objectives

- Develop a systematic process and associated CASE* tools for Requirements Engineering in KBE* Systems.
- Investigate how models can help engineers elicit, store, manage, present and re-use Software Requirements.
- Improve motivation in industry for capturing complete sets of Software Requirements through:
 - Re-use of the captured Requirements in the development stage through code generation and visualisation.
 - Tighter integration of the development and requirements environment.

Motivation

Requirements for Knowledge Based Engineering Systems are **data-rich**, including complex processes, geometry, 3D CAD models, data structures and free-text descriptions.

As such, Requirements gathered and stored using the typical methodologies (e.g. User Stories, UML Analysis, Problem Frames, etc.) leave gaps in the Requirements Set.

Rolls-Royce have observed that KBE* Software is typically delivered late, over budget or poorly aligned with business needs.

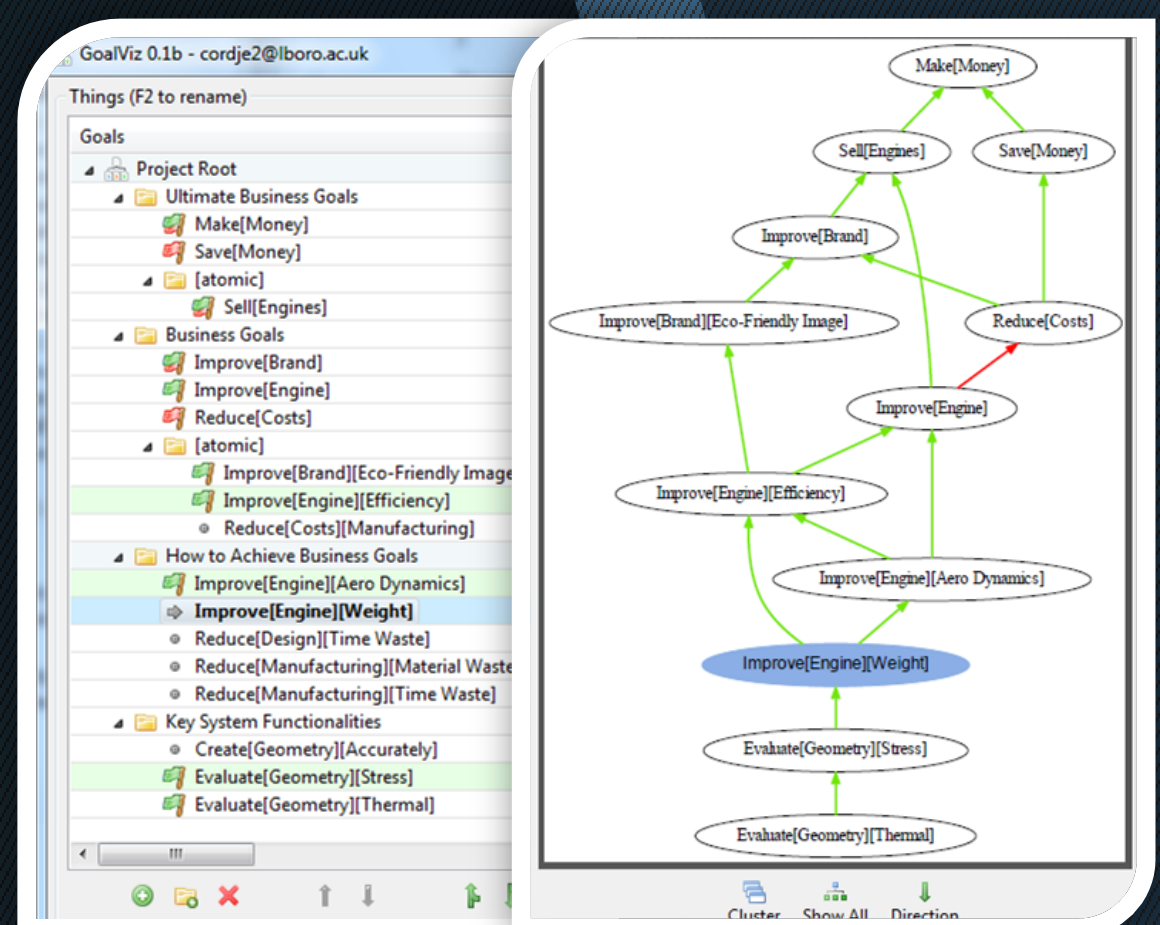
A Tool to Map SOFTWARE FUNCTIONALITY to BUSINESS GOALS using directed graphs

What is it?

The first deliverable from the project is a tool to assist in the determination of links between Business Goals and Software Functionality.

Why do it?

- Prove the Software's Business Impact.
- Explain why the Software exists/should exist.
- Objectively Rank Software Requirements.
- Visualise macro implications of micro changes.
- Highlight omissions in either:
 - Business Strategy.
 - Software Functionality.



*MDRE = Model Driven Requirements Engineering, *CASE = Computer Aided Software Engineering, *KBE = Knowledge Based Engineering