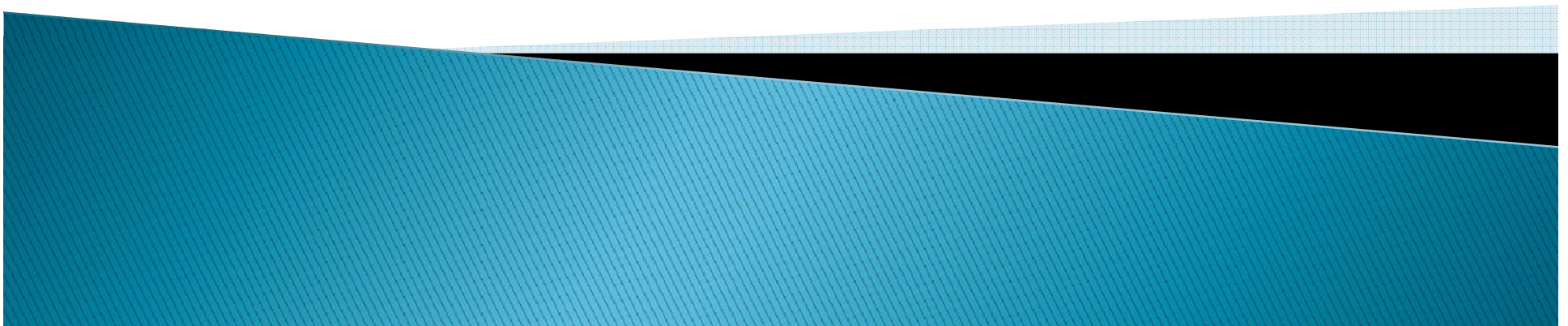


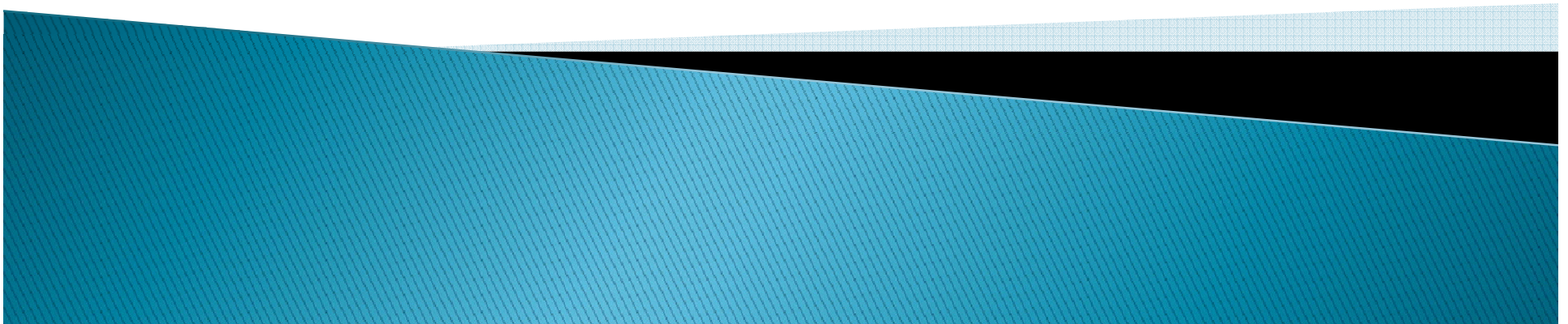
KBASE technological framework for automatic software generation

Metin Isov, KBASELab,
University of Ruse, Bulgaria



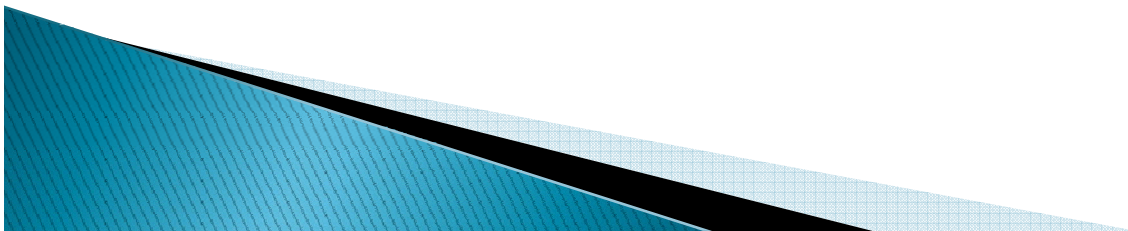
KBASELab

- ▶ Knowledge Based Software Engineering Laboratory
- ▶ Established by IIT department of University of Ruse, Sirma Group and IBS Group
- ▶ Lead by Assoc.Prof. K.Grigorova and I.Stanev
- ▶ Involved lecturers: 8
- ▶ Involved PhD Students: 3
- ▶ Involved Students: 8
- ▶ Research Fields:
 - Business process and architecture modeling
 - Automated programming and software engineering
 - Linguistic processors
 - Artificial intelligence



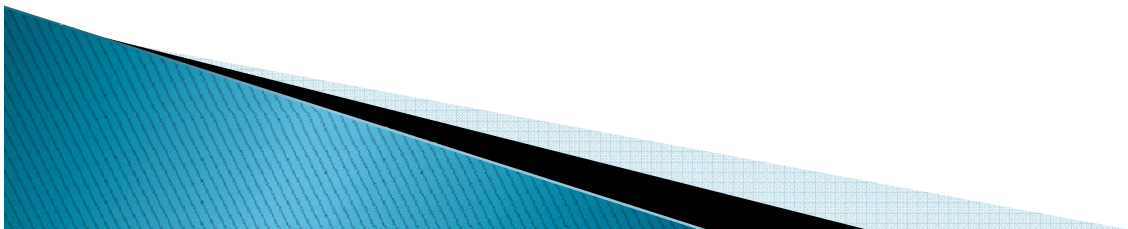
Improving software development process

- ▶ Non formal business model specifications
- ▶ Automated validation and modification of non formal specifications
- ▶ Automated generation of software from verified business models
- ▶ Incorporation of components for real time monitoring and fine tuning of developed software



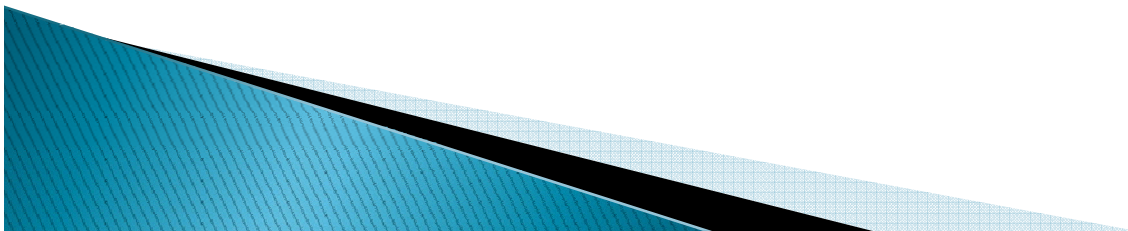
The RUP process

- Iterative development
- One of the widest used processes for software lifecycle management
- Adaptable to the developer's needs
- Large knowledge base
- Suitable for large software projects



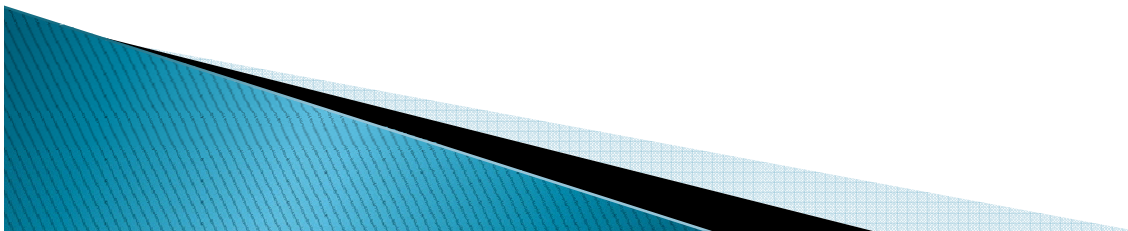
RUP for SOA

- ▶ Supports reusable tasks and processes
- ▶ Build in process for rapid reengineering of business processes
- ▶ SOA process server and integration servers

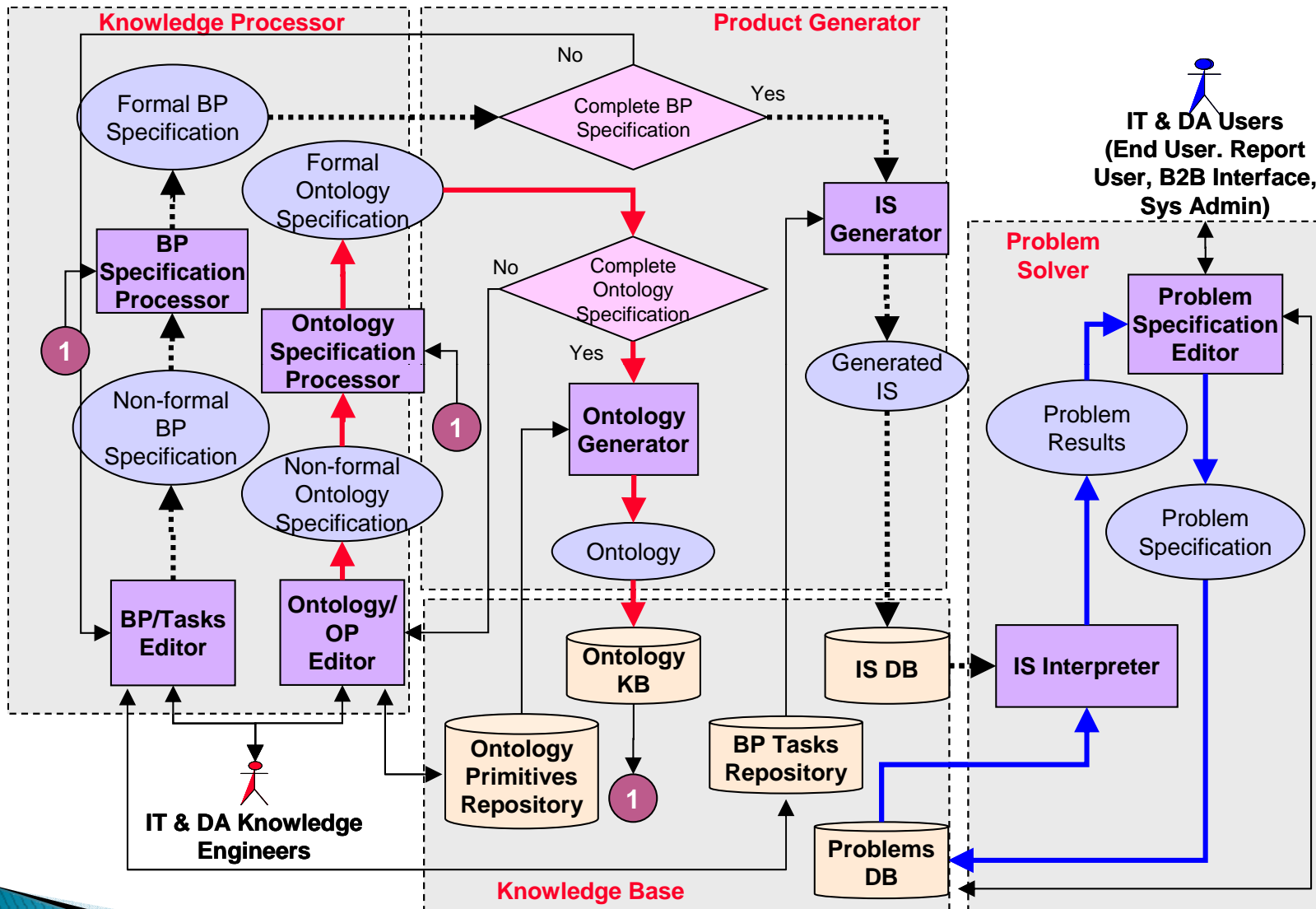


KBASE Unified Process

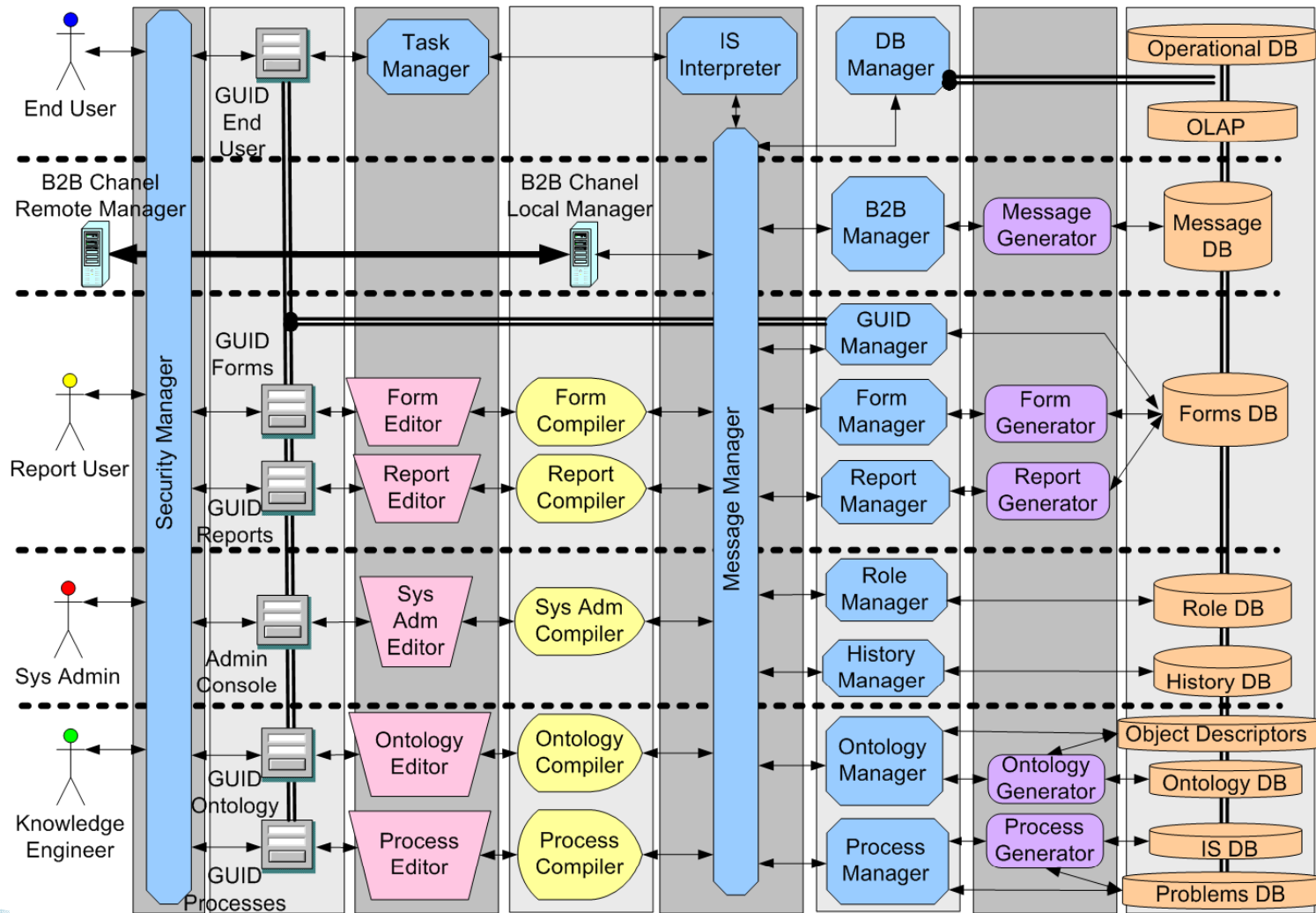
- ▶ Standardisation
- ▶ Capsulation
- ▶ Flexibility
- ▶ Automation



KBASE UP Functional Diagram

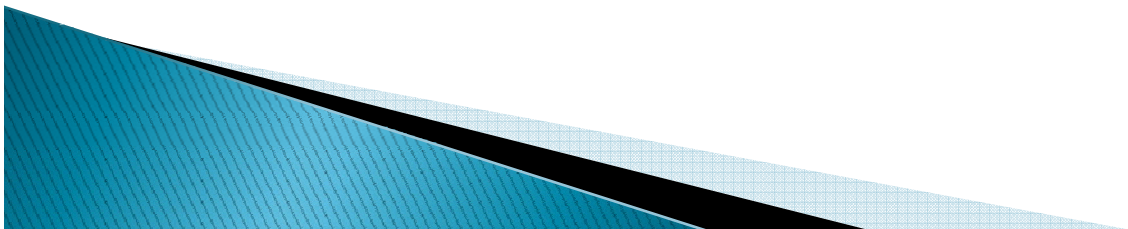


KBASE UP Technological Framework



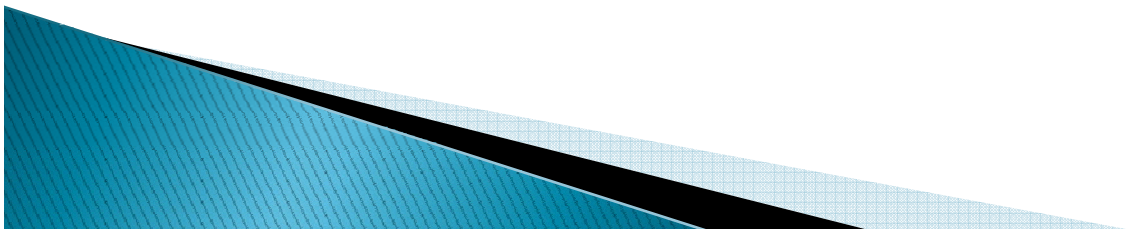
KBASE UP Specific Components

- ▶ **Artefacts**
 - Formal and Non-formal BP Specification
 - Ontology
 - Non-formal Ontology Specification
 - Problem Specification
 - Problem Result
- ▶ **Tasks**
 - BP Editor
 - BP Specification Processor
 - IS Generator
 - Ontology Editor
 - Ontology Specification Processor
 - Problem Specification Editor
 - Information System Interpreter
- ▶ **Roles**
 - Domain Area Knowledge Engineer
 - IT Knowledge Engineer
 - Domain Area User
 - IT User



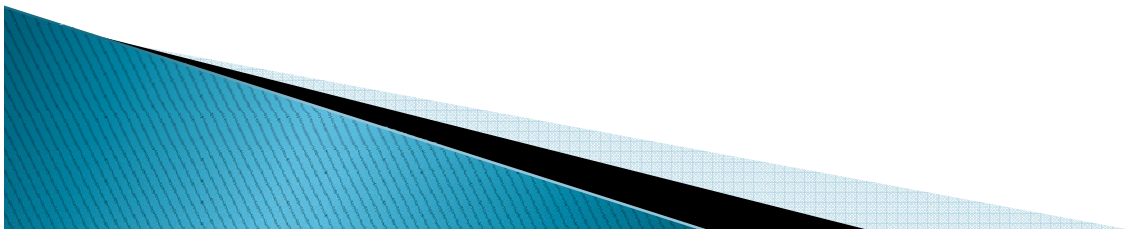
KBASE UP Modules

- Knowledge processor
- Product Generator
- Problem Solver
- Knowledge Base
 - BP Task Repository
 - Ontology Primitives Repository
 - Ontology Knowledge Base
 - Information Systems DB
 - Problems DB



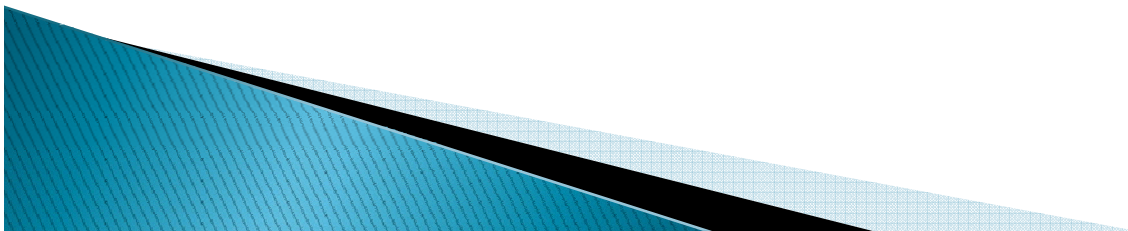
KBASE UP Processes

- ▶ Ontology Generation
- ▶ Business Process Generation
- ▶ Problem solving



KBASE UP Experiences

- ▶ Module for Automated Programming of Robots
- ▶ Business Process Generator
- ▶ Intelligent Product Manual



Thank you for you attention!

