OCOPOMO

Open
COllaboration for
POlicy MOdelling

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SEVENTH FRAMEWORK
PROGRAMME

Open Collaboration in Policy Modelling

Presentation @ OSE 2011, Ludwigsburg
15th April 2011

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UNIVERSITÄT
KOBLENZ · LANDAU

Agenda

- Challenges to use ICT in policy making / OCOPOMO project
- Approach to systematic, structured policy analysis
- Concluding remarks

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Current Demands for Open Government in Policy Contexts

Transparency, accountability, coherence, openness, participation …

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Challenges in Policy Development

- Complexity in strategy and policy formation
- Lack of online participation means in strategic decision making
- Lack of open collaboration and therewith transparency in identifying the crucial features of complex social environments to inform policy models
- Development, visualisation and simulation of appropriate policy models usually done by experts
- Appropriate ICT support in policy planning not deployed widely

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OCOPOMO Facts

- OCOPOMO: Open Collaboration in Policy Modelling
- Project start: 1st January 2010
- Duration: 36 months
- Efforts: 398,5 person months
- Budget: 3,185.990 Euro
- EC funding: 2,519.000 Euro
- 10 partners from 5 EU countries
  - 5 Universities (research)
  - 3 SMEs (ICT development and policy consultancy)
  - 2 public administrations (pilot partners)
- URL: www.ocopomo.eu

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OCOPOMO's Vision

OCOPOMO's vision is to transform the European Government landscape

to enable open, well-informed, as well as efficient and effective public governance and policy-modelling

based on an interactive platform that allows absorbing the cumulative knowledge existent in society

in order to better ground and qualify public decisions

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Aims of Project

- Support key stakeholders to participate in the processes of policy formulation
  - Policy analysts, policy operators, wider stakeholder groups of specific policy domains
- Integrate methods and tools of scenario-based policy formation with policy modelling
- Develop an integrated ICT platform for efficient policy making
  - Mechanisms of open collaboration along the policy process
  - Supporting engagement of wide stakeholder groups
- Piloting two cases on EU structural funds
  - Renewable energy in Kosice (SK), Knowledge transfer from Universities to SMEs in Campania (IT)

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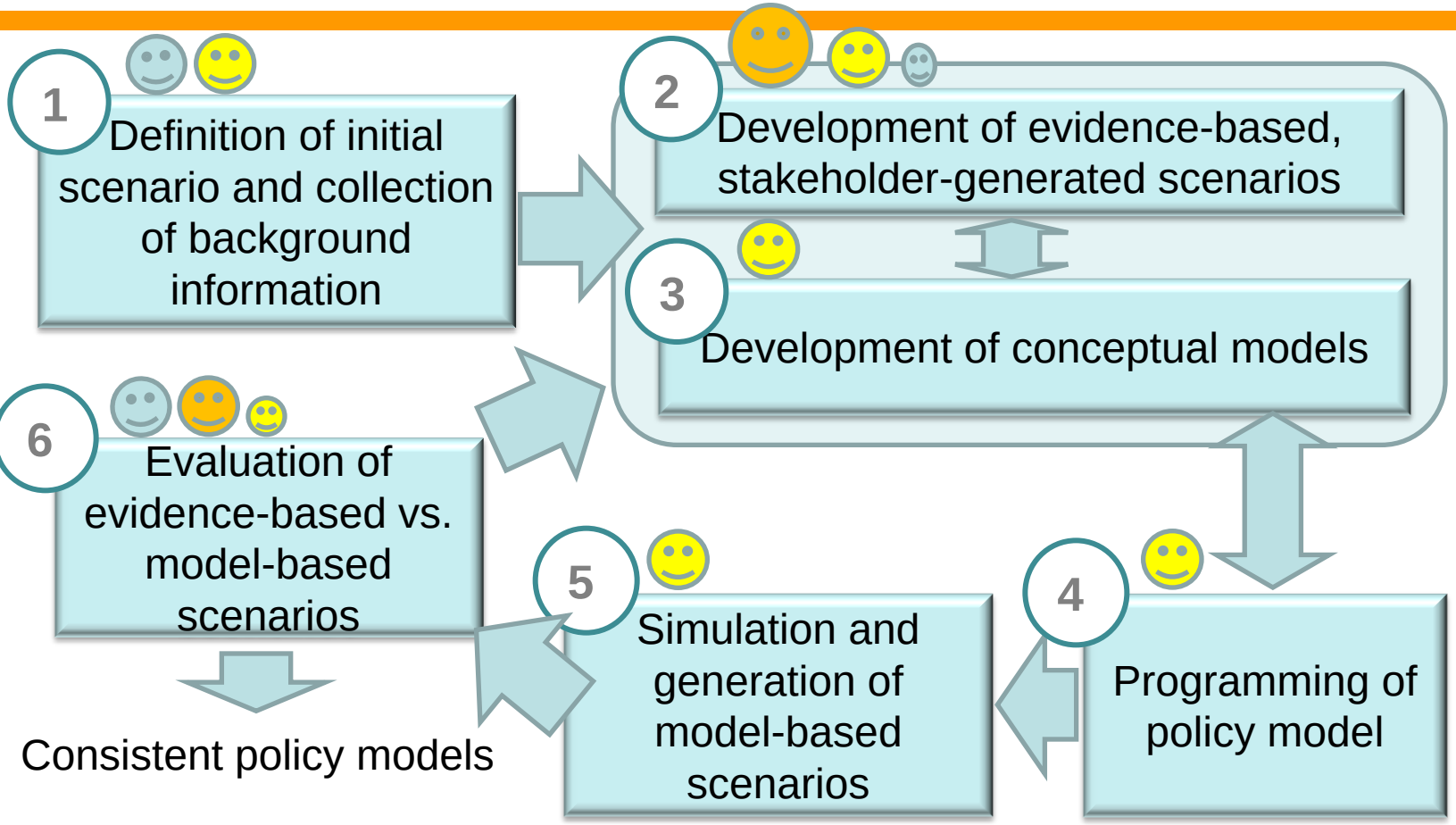
OCOPOMO's Integrated Policy Process and Involved Actors



Legend:

Prodess phase

Transition to next phase

Actors:

Domain Experts (Policy Planner / Strategic Decision Maker)

Stakeholders involved

Experts for Policy Analysis / Policy Modelling

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Integrating Scenario and Formal Model

- Goals, scope and social processes specified by participating stakeholders
- Stakeholder-generated scenarios inform model design
  - Key in model design: agent descriptions & if-then rules
  - Stakeholders see natural-language pseudo code
    - Enforces precision in use of language, expectations, goals
- Models produce simulations, which are formal scenarios
- Participating stakeholders evaluate model generated scenarios
  - Surprises involve further investigation of model & scenarios
  - Iterations in developing formal policy models

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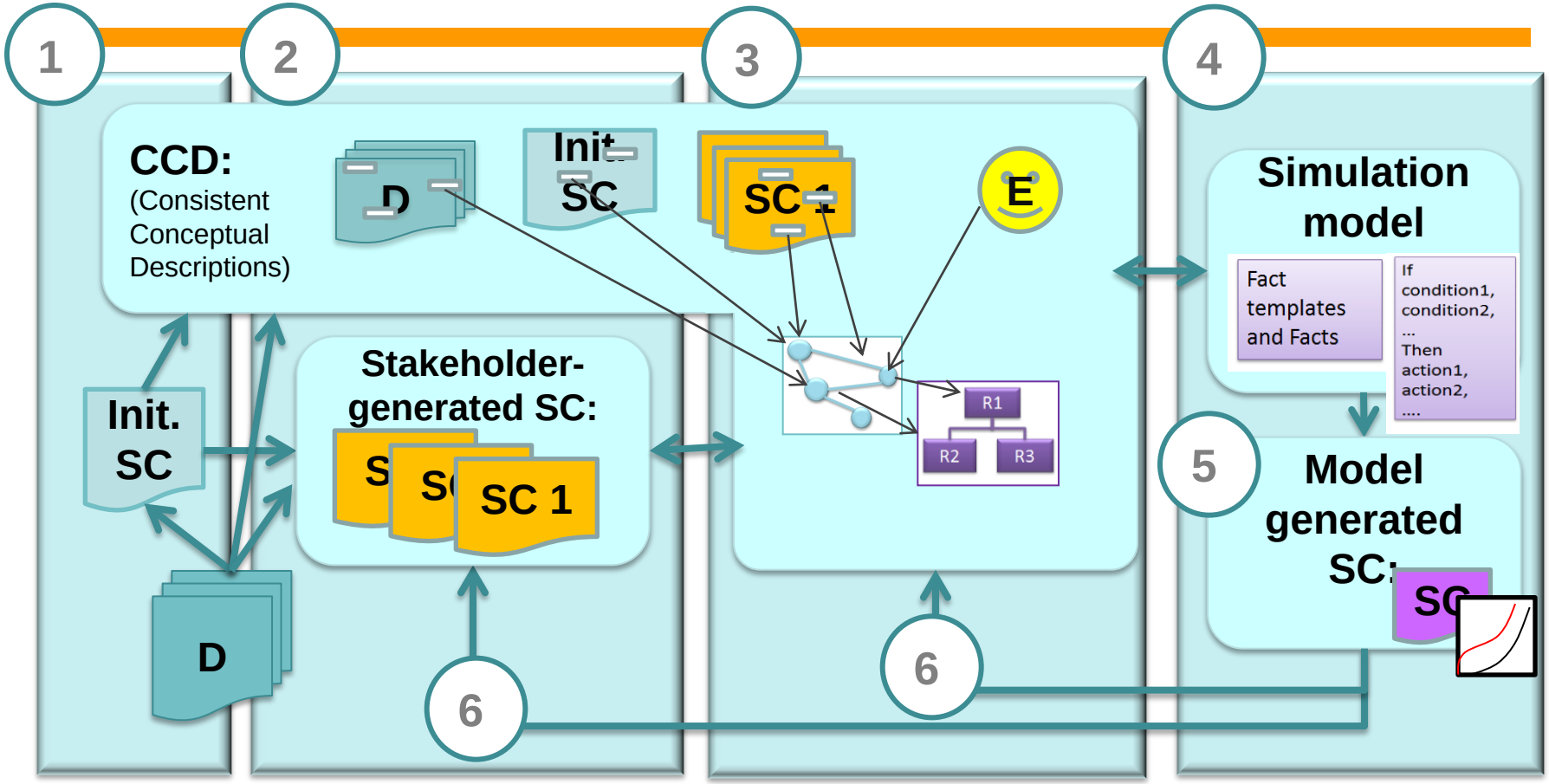
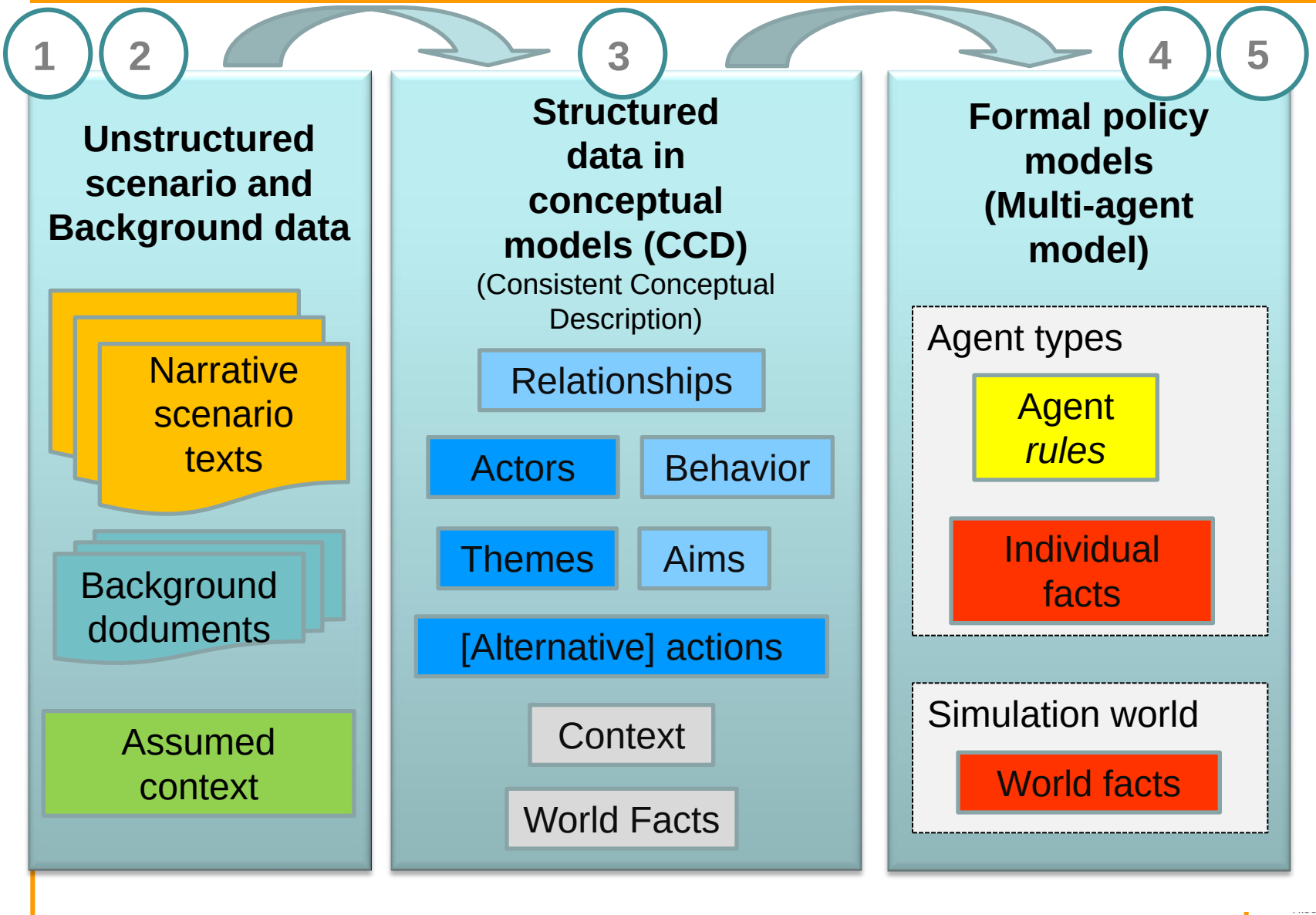
Artefacts along the Process Phases



Legend:

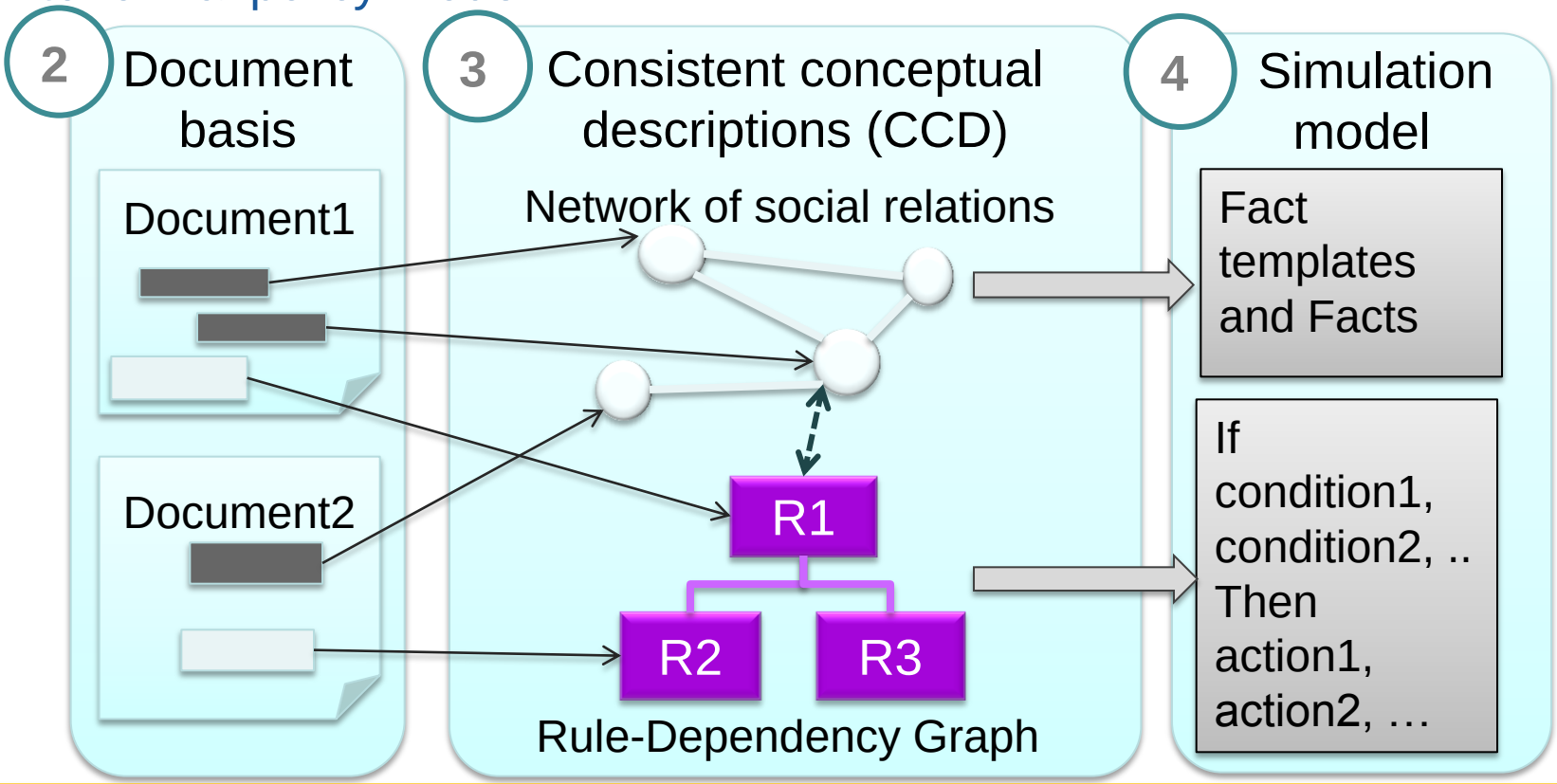
- # Process phase
- Information flow
- Information flow detailed steps
- E Expert knowledge
- D Documents
- SC Scenarios
- Relevant aspect
- Network of social relationships
- R1 R2 R3 Rule-Dependency-Graph

Transformation Needs



Integrated Approach for CCD

From document analysis via qualitative data analysis to formal policy model



Legend:

- Phrases in document basis
- Extraction and trans-formation of elements of the policy descriptions
- R — Rules (If-Then)
- Dependency among rules
- Actor
- Relation among actors
- Actor's rule-base
- Transformation from conceptual models to formal statements

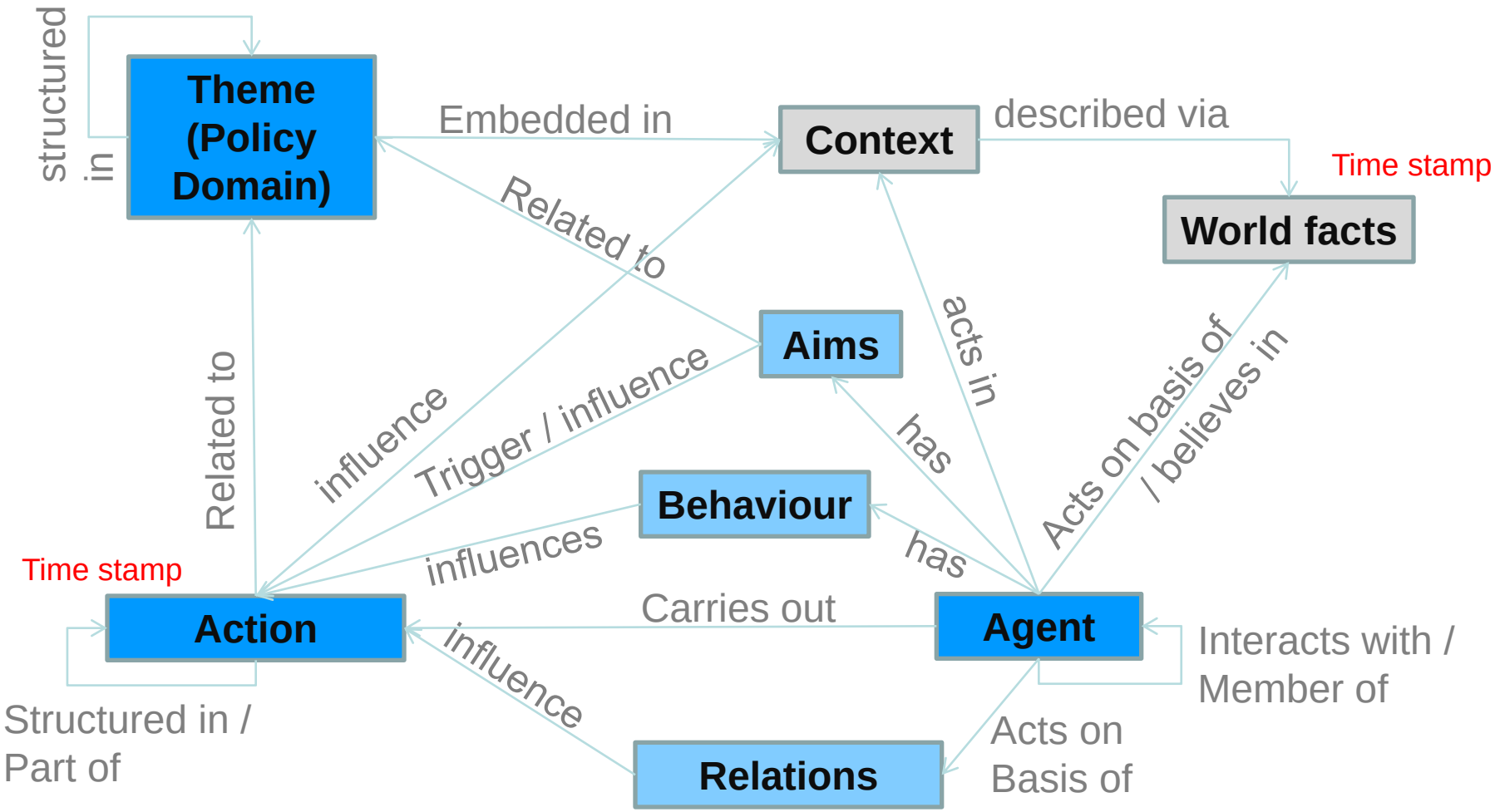
Step 1 of Transformation: Identification of Aspects of Relationships (-> Ontology)

Phrase in scenario description	Aspect (issue)	Category	Characteristics of aspects	Model component
Cheese should be produced by farmers along Hadrian's Wall.	Agricultural products	Current state: Alternative or multivariate	If alternative: {"dairy", "wool", "cereal", "meat", "beer", "vegetable"} or if multivariate: <dairy x_s per cent, wool x_f per cent, cereal x_n per cent, meat x_w per cent, beer x_b per cent, vegetable x_h per cent>	Condition part of a rule in an agent's rulebase, fact
		Goal (description of desired future state)		Also a fact
	produced	State change (ways and means, measures to be taken)	Action description: *install milking machine and cheese kettle to produce cheese*	Action part of a rule in an agent's rulebase, to be determined by analysing possible ways from current states to goals
	Agricultural enterprises	Actor	Endowed with a rule base, a fact base and goals	Agent class

Step 2 of Transformation: Identification of Rules (Rule-dependency Graph)

Model structure	Model comp.	Name	Natural language description	Formal description (Code)
Agent "farmer along Hadrian's Wall"	Structure	Farmer_Along Hadrians_Wall	Agent class	class farmer{...}
	Facts	Current state	Current distribution of agricultural products produced Current state of soil and climate Current market price for high quality cheese	Class EnvironmentState { double productClass Percentages[]; double soilCapacity; double lengthOfSummer; double priceOfCheese; …}
		Desired state	Desired distribution of agricultural products produced Minimum desired profit	PlanningGoal [objective cheese] [objective minimumProfit] [priority high]
		Danger	Production cost per kilogram might exceed the price per kilogram in the farm shop	Danger [cheese] [losses]
	Rules		If it is true that dairy is profitable then start milk and cheese production.	If (noDanger){ Purchase(cheeseKettle); Install(milkingMachine); }

Conceptual Model for Policy Description in CCD and Formal Policy Model



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Why Scenario-based Policy Modelling?

- Stakeholder participation and collaboration in the development of different views on a policy context
- Bottom-up approach, evidence-based
- Deployment of integrated ICT based participation platform
- Comparison of model-generated scenarios with evidence-based narrative scenarios generated by stakeholders

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Expected impact

- Contribution to transform government and administration to an open, effective and efficient participative governance (good governance principles)
- New opportunities for open discourse among stakeholders of the policy domain and the policy experts
  - in stakeholder-oriented scenario generation
  - in evaluation of formal policy models
- Improving transparency and traceability in strategic decision making through the OCOPOMO approach

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Many thanks for your attention!

Project partners:

intersoft

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Manchester Metropolitan University

SMA

KSR

Volterra

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