

# A Conceptual Model for REA Transactions

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# Introduction

- **Business process modeling is important for understanding of all activities in the company.**
- **Design of information systems.**
- **Economic systems.**
- **Monitoring values of resources.**
- **Techniques for modeling for value-oriented business systems**
  - e3-Value, REA etc.

# REA

## What is REA?

- **REA (Resources, Events, Agents)**
- **Research of accounting model (McCarthy, 1982)**
- **Framework for enterprise information architectures**
- **Business ontology**
- **Fundamental laws of business domain**
- **Extension by patterns**

# REA

## REA Architecture

### ■ Value System level

- Flow of the resources between the enterprise and business partners

### ■ Value Chain level

- Connections between business processes

### ■ REA model level

- Individual business processes

### ■ Task level

- Algorithm process, code concepts
- Implementation-dependent



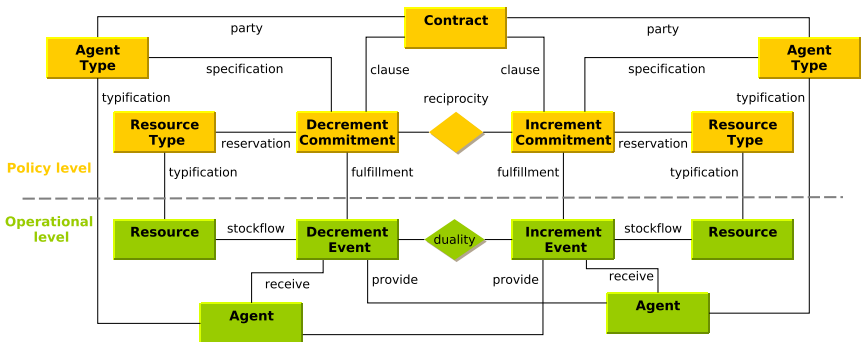
# REA

## REA model level

- Individual business processes
- How value of resources are change
- Economic exchanges and conversions
- REA model concepts are divided:
  - Operational level
    - ▶ *Basic concepts*
    - ▶ *What happened*
  - Policy level
    - ▶ *Extension*
    - ▶ *Rules and standards*
    - ▶ *What could or should or will happen*

# REA

## REA model

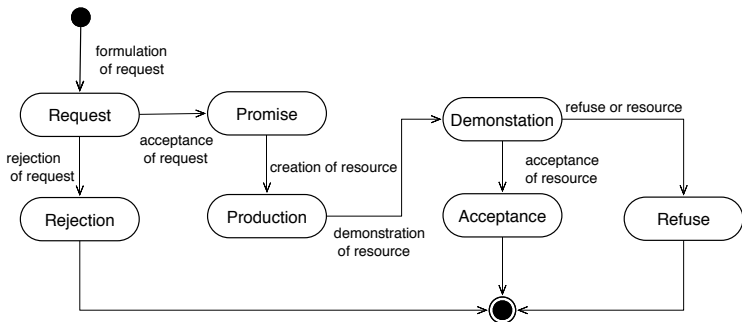


# Motivation

- **REA is a promising technology for value-oriented business process modeling.**
  - Number of advantages.
  - Semantic and application independence of model.
  - The ability to display values of economic resources in the company on demand.
- **Weaknesses**
  - Poorly defined state model.
  - Transactions are primarily focused on the final production.
  - No defined coordination activities.
- **Result of the deficiencies -> small deployment.**

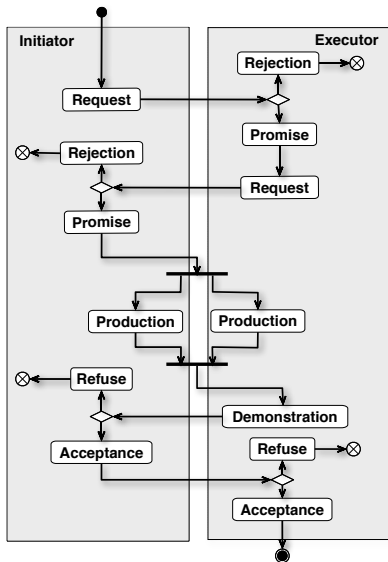
## State model

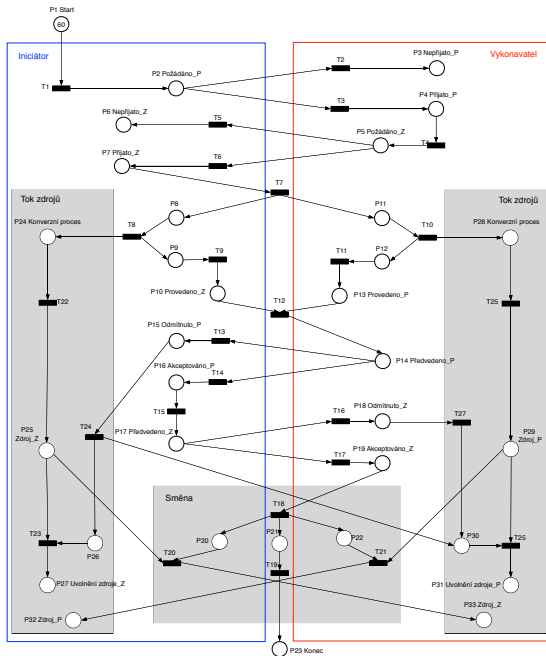
- New State model for value oriented business process modeling based on the REA enterprise ontology.
- Base on Design and Engineering Methodology for Organizations - DEMO (Dietz)





# Transactional mechanism





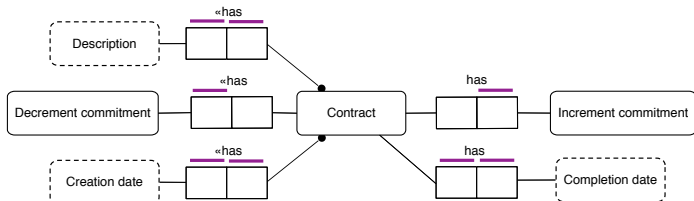
# Conceptual model

## Contract

### ■ Object Role Modeling (ORM)

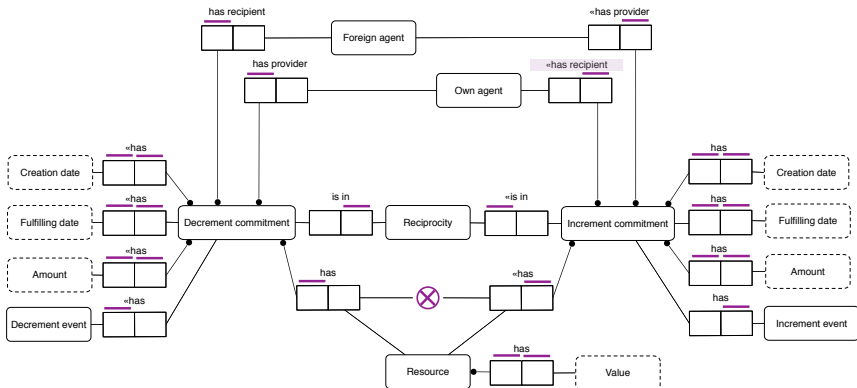
- Expressing conceptual model in terms of elementary facts, including restrictions and rules.
- Natural verbal expressions.

### ■ Conceptual Schema Design Procedure (CSDP)



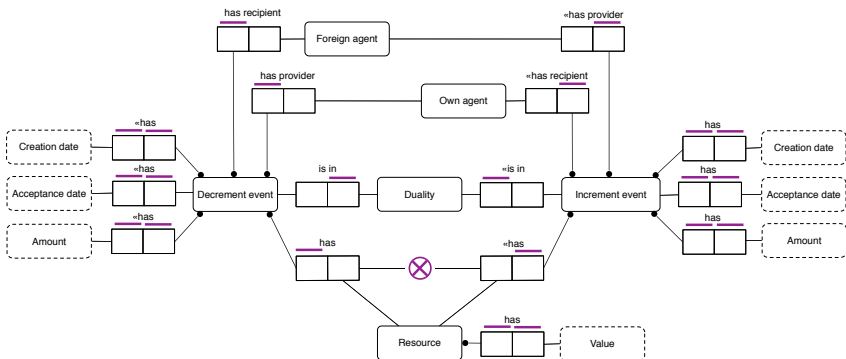
# Conceptual model

## Commitments



# Conceptual model

## Events



## Conclusion

- **Conceptual model for new REA transactional mechanism.**
- **Ontological framework to build an economic information system.**
- **This framework was tested in several implementations.**
- **Framework can help with the expansion of REA enterprise ontology.**



**Thank you for your attention!**

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