



Usage of 4-diamonds

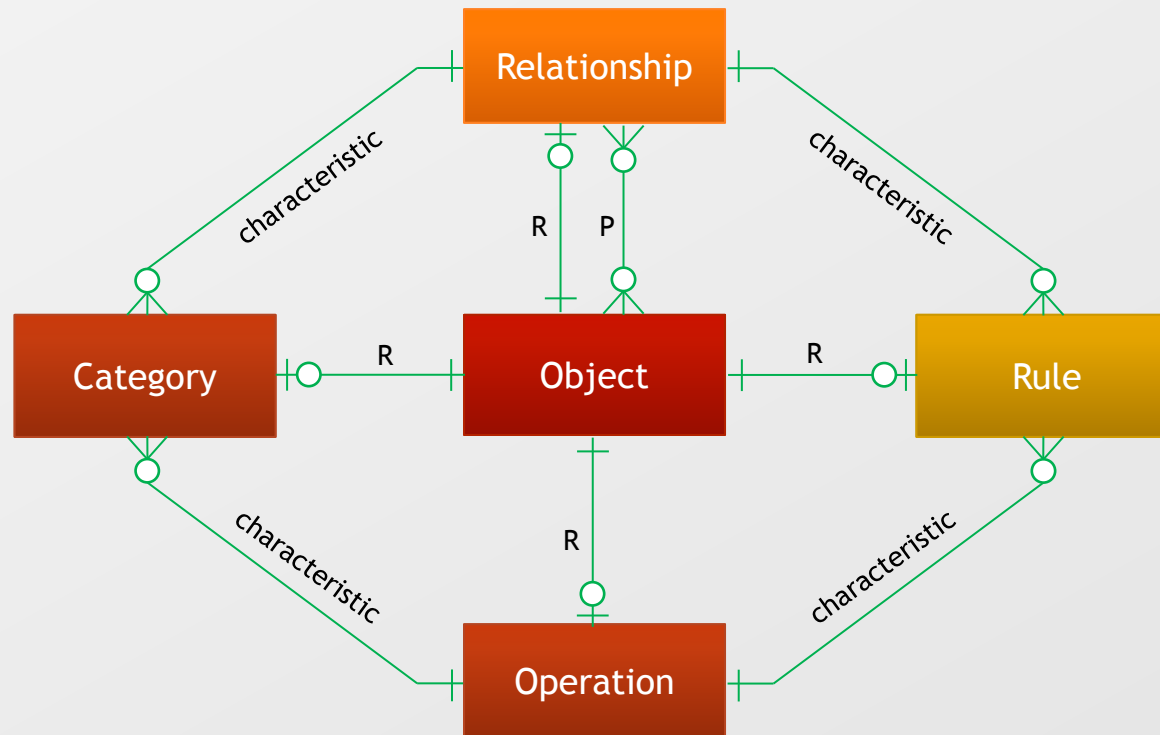
Simple examples taken from Smart City domain

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Transportation system - objects and items

- ❖ Explore the transportation system
- ❖ First identify all objects and their relationships, working in different contexts
- ❖ After that, define for each object in every particular context
 - ❖ Category
 - ❖ Operations
 - ❖ Rules
- ❖ Than put all objects as items together and demonstrate their manifestation in the given context

Diamond See



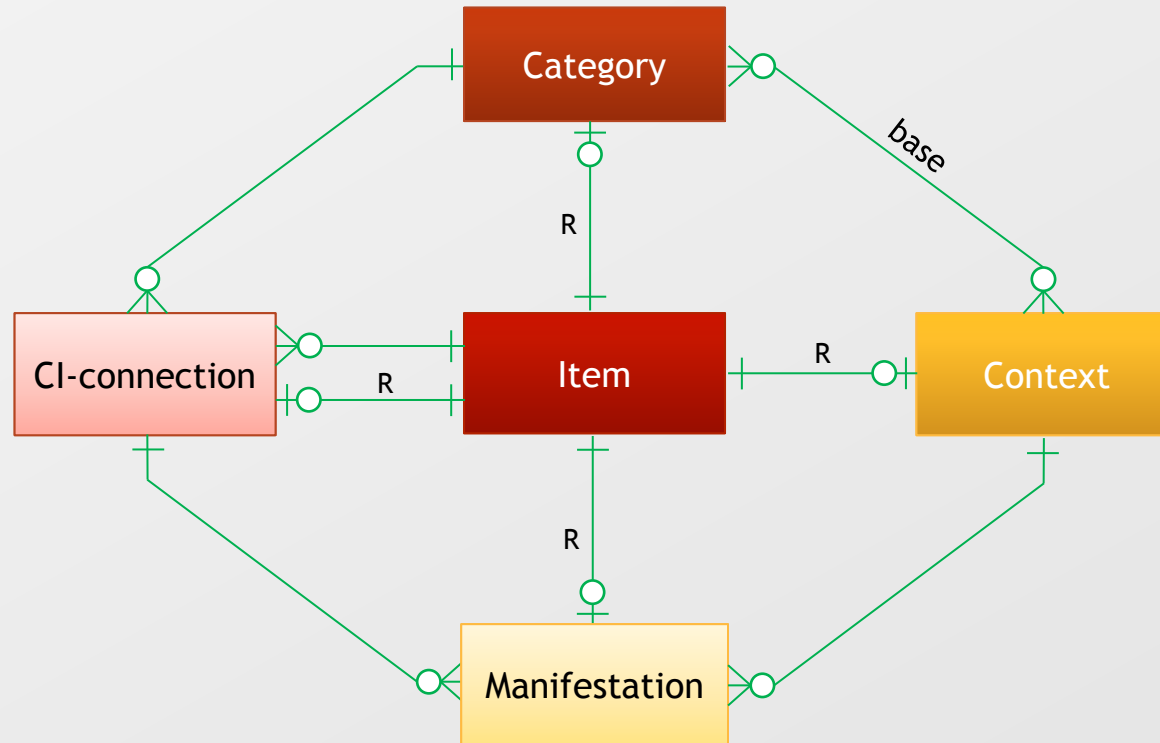
Road (street) - Objects and relationships

Name	Relationship	Name
Car	Is on	Road
Bus	Is on	Road
Bicycle	Is on	Road
Pedestrian way	Is on	Road
Driving lines	Are dividing	Road
All vehicles	Are using	Driving lines
Traffic on the road	contains	All vehicles
Traffic lights	Are managing	Traffic on the road

Public transport context - Objects and relationships

Name	Relationship	Name
Tram	Is on	Tracks
Bus	Is on	Road
Trolleybus	Is on	Road
Bus stop	Is used by	Bus and Trolleybus
Bus stop	Should be closed to	Pedestrian way
Timetable	In on every	Bus stop

Diamond Recognize



Mixing contexts

- ❏ Some objects are presented in more contexts
 - ❏ Buses are on the road as objects on the street, but are also important in the context of public transport
 - ❏ Comparing to cars, that are not interesting in the context of public transport
- ❏ When we are speaking about them we must be sure what context we are using



Contexts

- ▣ The road (street)
- ▣ Public transport
- ▣ Emergency services

Example - bus manifestation

Public transport



- How it is organized
- What services they can provide?

Road



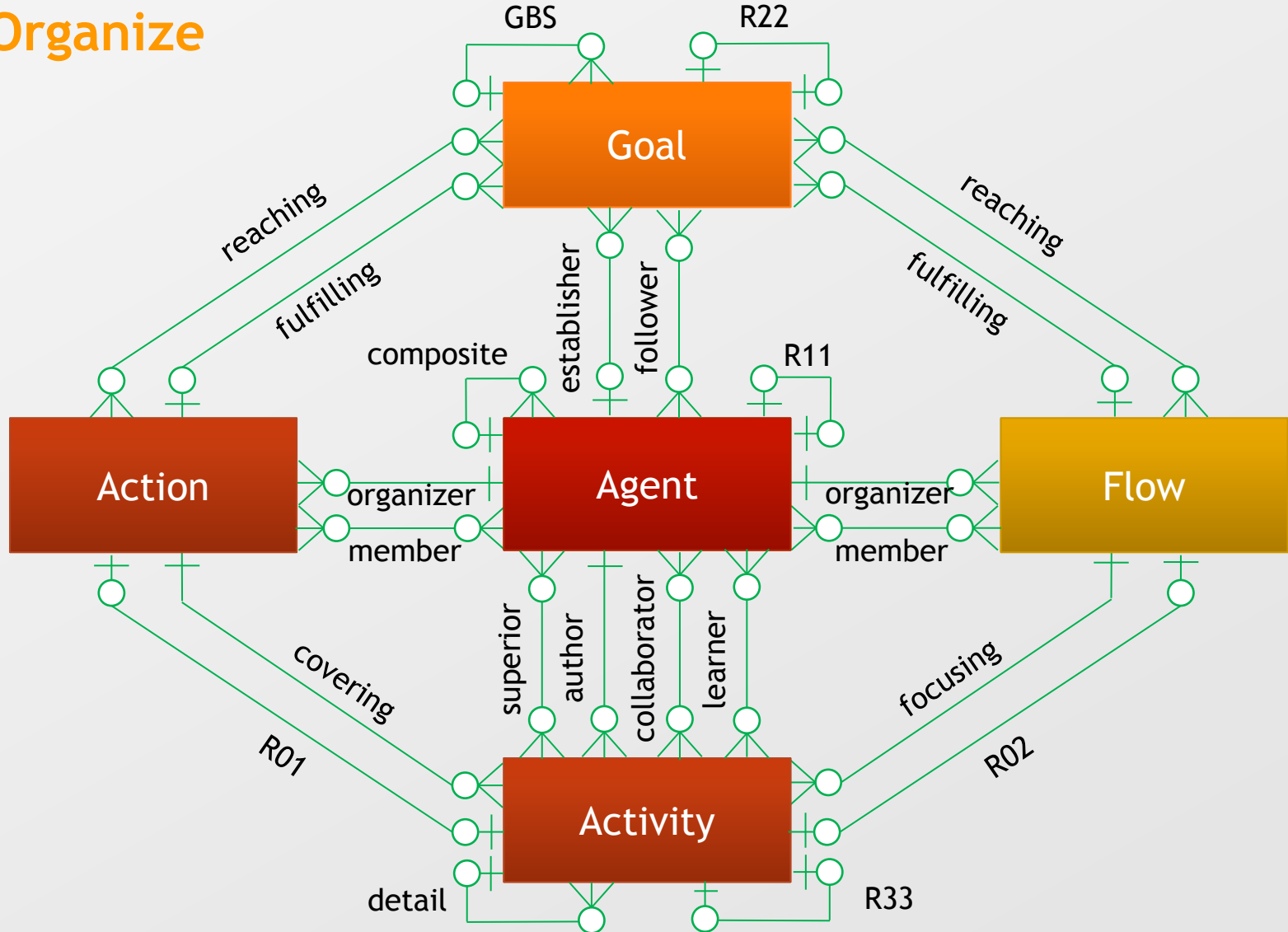
- Traffic problems
- Lines reserved for buses
- How fast they are

Travel agency



- How fast can they go?
- How they are equipped?

Diamond Organize



Transportation system - agents

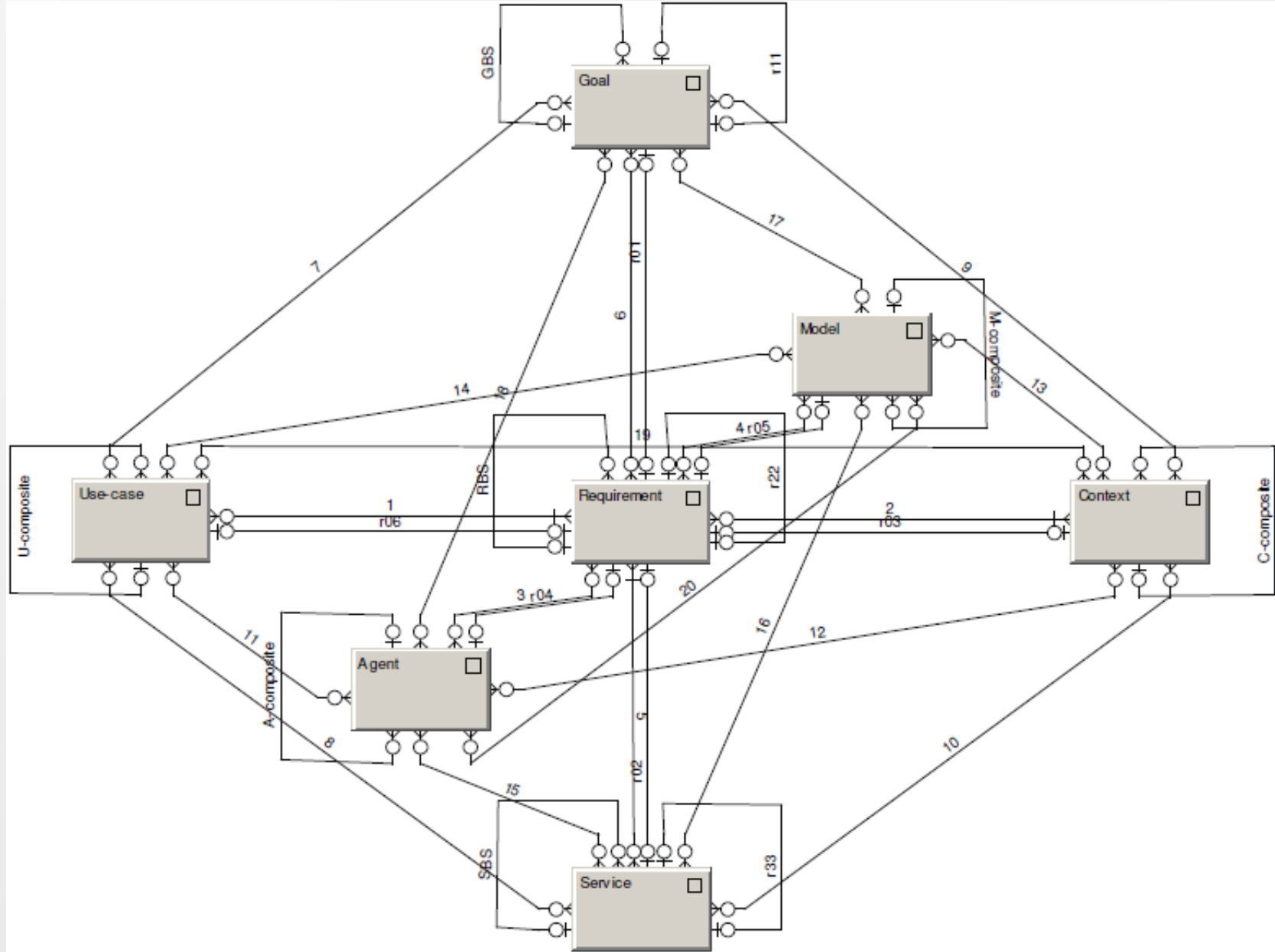
- ❖ Identify all involved agents
- ❖ Identify all actions that are performed in the system
- ❖ Analyze goals of the agents (only those that has relationship to the system)
- ❖ Identify flows that are performer in the system
- ❖ Identify actions that are performed in the system
- ❖ Put the into the contexts

Agents

Agent	Public transport	Road
Citizen	Customer	Pedestrian Driver Biker
Employee	Driver of public transport Inspector	Policeman Fire man Emergency



Diamond Do



rent a car like rent a bike, pick up the car along the road and go, any time, anywhere

- ❏ Goal: drive green! car sharing! reduce traffic jam and arrange the transportation better
- ❏ Requirement: we want to reduce exhalations, we want to motivate people to use public transport
- ❏ Agent: the city or municipality, citizens, tourists
- ❏ Model: based on the transportation research, built by the experiences
- ❏ Use case: smart transportations project we can learn from
- ❏ Service: real-time car booking service, service center, reg. services etc.
- ❏ Context: Smart City, Transportation, Living conditions



What are the principles?

- ❖ Principle of service definition - vertical
 - ❖ Service is not the most important element.
 - ❖ The Requirement is the key to build successful service environment
 - ❖ The goals are the basement for the set of requirements
- ❖ Principle of context understanding - horizontal
 - ❖ Context is the part of the model, not the externality
 - ❖ Use case is identified within the context (finding similar solutions)
 - ❖ Requirement is forming and is formed by Use cases
- ❖ Principle of completeness - z-axis
 - ❖ Agents identification must be done in the relations with other elements
 - ❖ Model must involve all other elements including itself

Context	Requirement					
Healthy run of the citizen	To find optimal road					
Race of the moto bikers	To find optimal road					
Emergency service	To find optimal road					

Conclusions

- ❖ Design of service is never isolated, it is a part of environment
- ❖ The analysis begins from goals, not from the service
- ❖ The value is co-created only if we follow „right“ goals of the agents
 - ❖ Synchronization of goals in Diamond Organize and Do
- ❖ The value is co-created only if the service starts with proper value proposition
 - ❖ Synchronization of terminology and understanding in Diamond Recognize