

ECIMF Approach

Business-aware system integration

CEN/ISSS/WS-EC project



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Understanding the context

★ IT infrastructure exists to support business goals

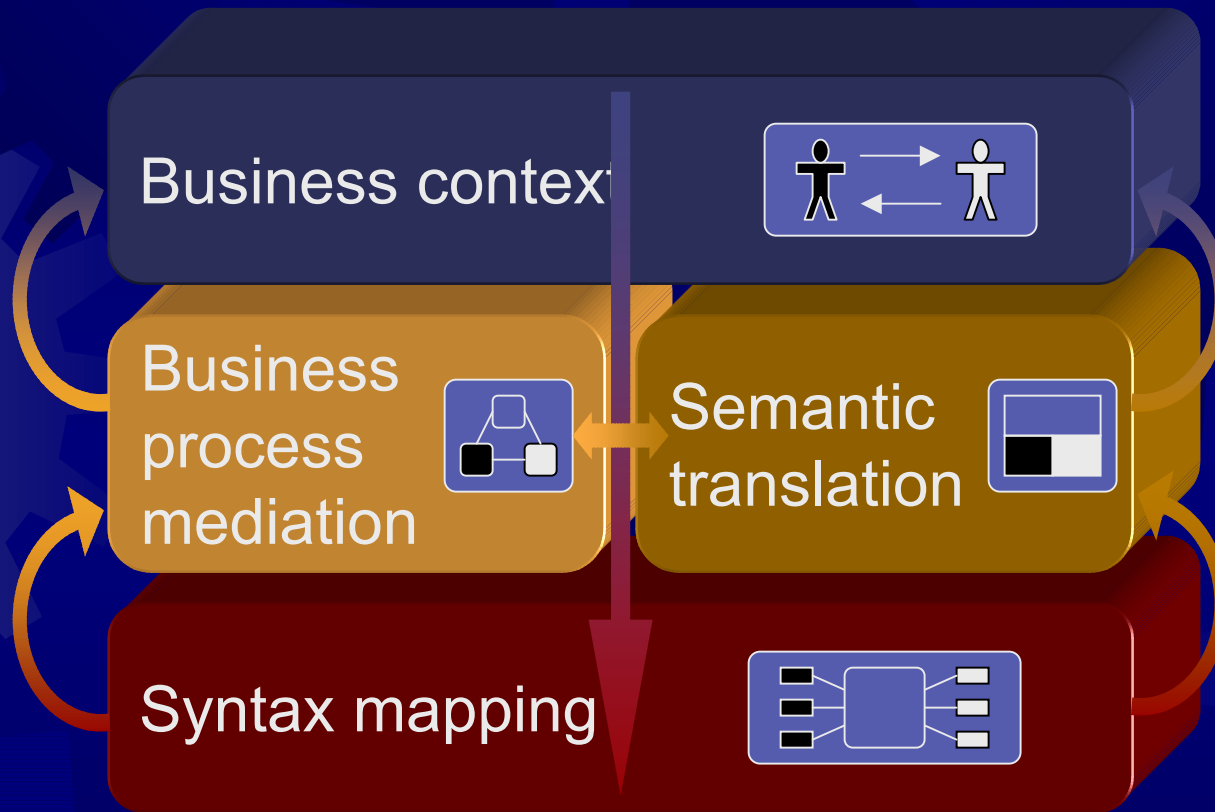
- ★ IT systems don't exist in a void
- ★ IT systems play specific roles in the business

★ Business context is crucial

- ★ Information is useful only when considered in the business context
- ★ Business context determines the meaning of data and information exchange

★ Business flow before technical flow

ECIMF Principles

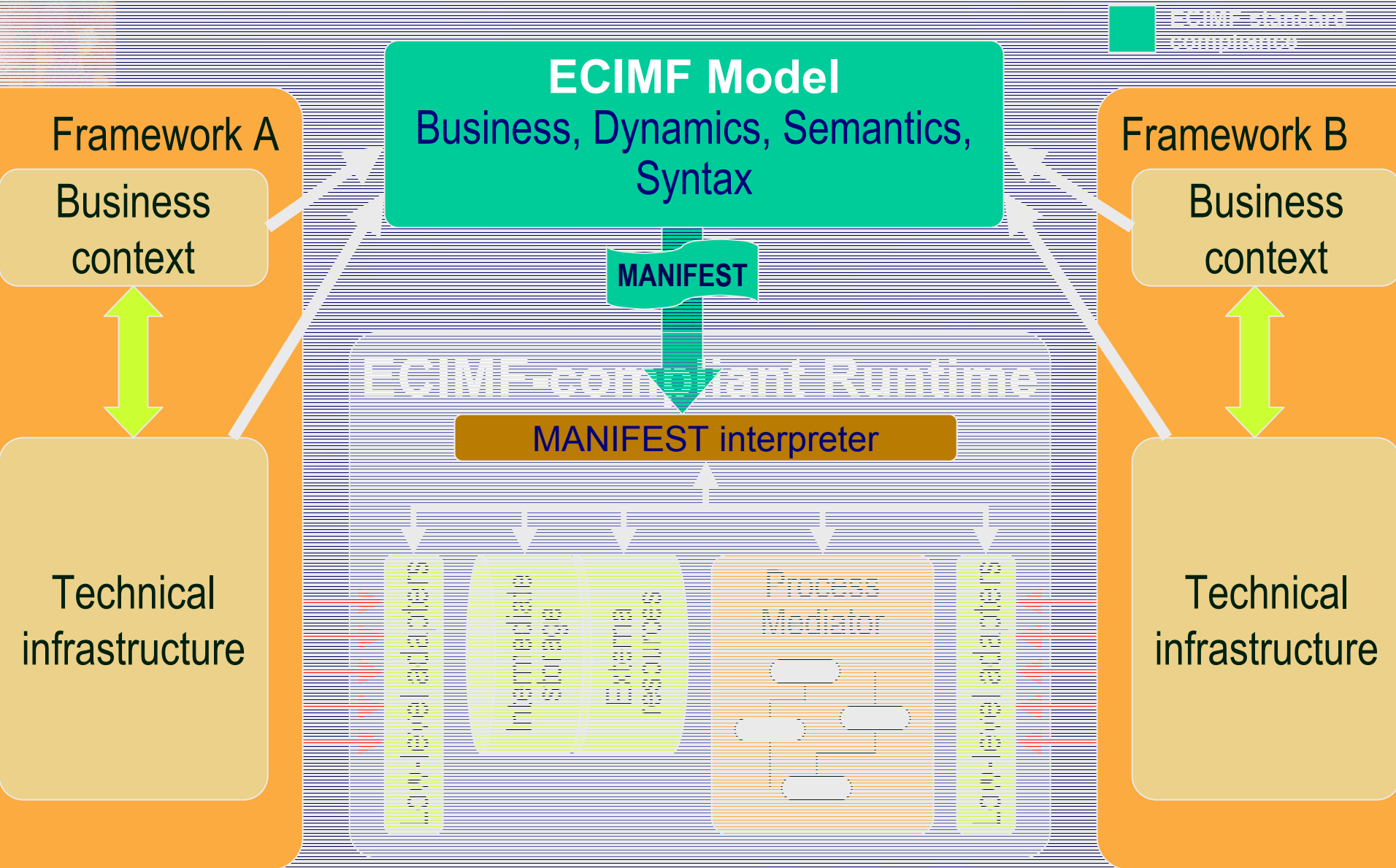


- ✦ Top-down analysis
- ✦ Structured, iterative process

ECIMF deliverables

- ★ General Methodology (ECIMF-GM)
 - ✿ Modeling notation
 - ✿ Integration methodology: business context- and process-driven, multi-layer
- ★ Technical Specification (ECIMF-TS)
 - ✿ Integration Guidelines
 - ✿ Syntax for the recipes (“Manifest”)
- ★ Proof of Concept (ECIMF-POC)
 - ✿ Examples of specific mappings
 - ✿ Open Source tools to support ECIMF

ECIMF Applied - current work



ECIMF-standard compliance

ECIMF Model

Business, Dynamics, Semantics, Syntax

MANIFEST

ECIMF-compliant Runtime

MANIFEST interpreter

Low-level adapters

Intermediate storage

External resources

Process Mediator

Low-level adapters

Framework A

Business context

Framework B

Business context

Technical infrastructure

Technical infrastructure

Methodology

- ★ Modeling notation: a UML profile (EDOC?)
 - Business context, process mediation, semantic translation, syntax mapping → *unified picture*
 - UMM provides a good basis, but not for expressing the transformations
- ★ Integration methodology
 - Pragmatic approach:
 - Provide a basic (but extensible) methodology, firmly based on both research and experience of practitioners
- ★ Producing useful, applicable results
 - Limiting the scope
- ★ Integration Guidelines
 - Worksheets and procedures for acquiring the knowledge needed to design the integration recipes

Integration Guidelines

- ✦ Step-by-step integration scenarios
 - ✦ Using ECIMF methodology
 - ✦ Clearly defined extension points
 - Additional methods, artifacts and tools
- ✦ First draft has been published
 - ✦ E-Commerce Framework Integration Guideline (FIG)

Tools

★ Semantic Translation

★ Conzilla - concept browser

- To be extended with explicit support for ECIMF - both notation and MANIFEST generation

★ Other ontology engineering tools?

★ Multilingual Upper Level E-commerce Ontology (MULECO) - CEN/ISSS project

★ Process Mediation

- ★ ? (many commercial process management tools are available)

★ Syntax Mapping

- ★ ? (many commercial data mapping tools are available)

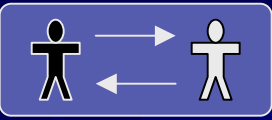
Example: RosettaNet & EDI

★ Framework A: RosettaNet

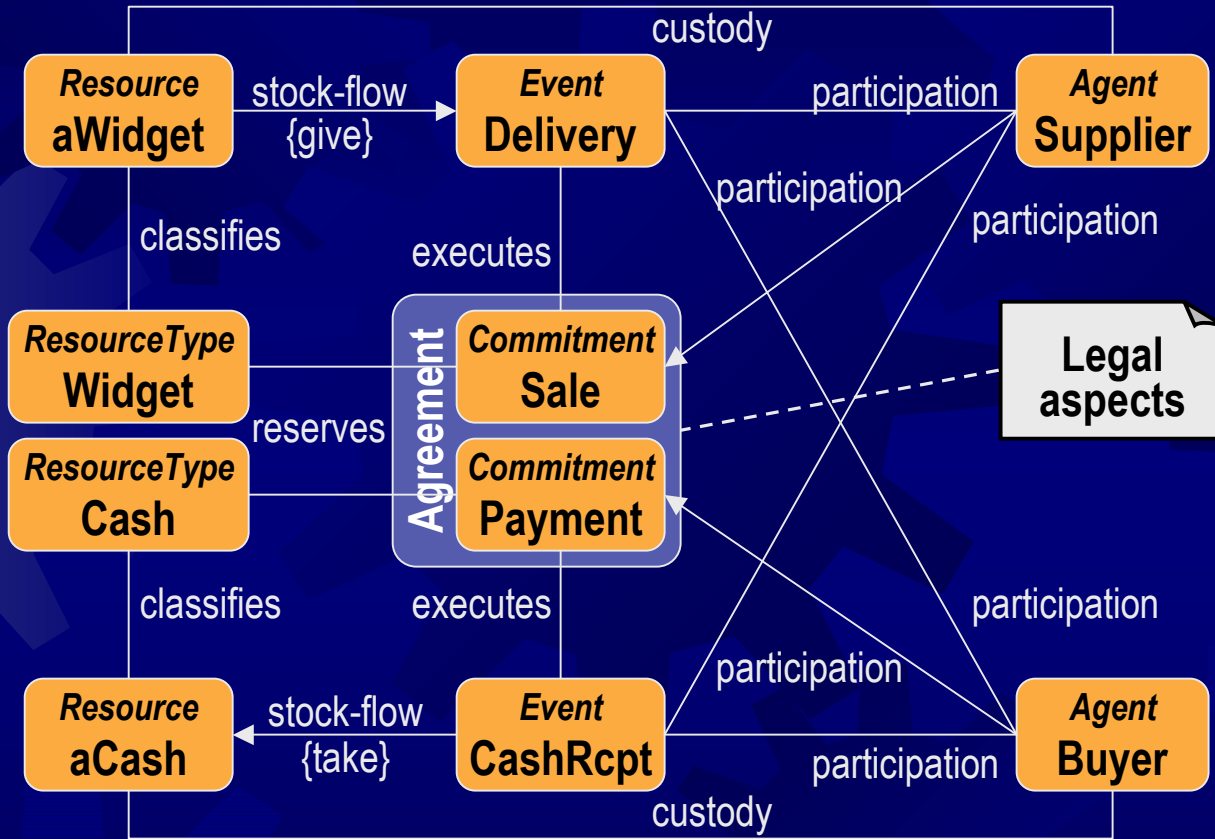
- ★ PIP3A1: Req. Quote
- ★ PIP3A4: Req. Purchase Order
- ★ PIP3C3: Notify of Invoice
- ★ PIP3C6: Notify of Remit. Adv.

★ Framework B: EDI

- ★ REQUOTE / QUOTES
- ★ ORDERS / ORDRSP
- ★ INVOIC / REMADV
- ★ (APERAK / CONTRL)



Business context

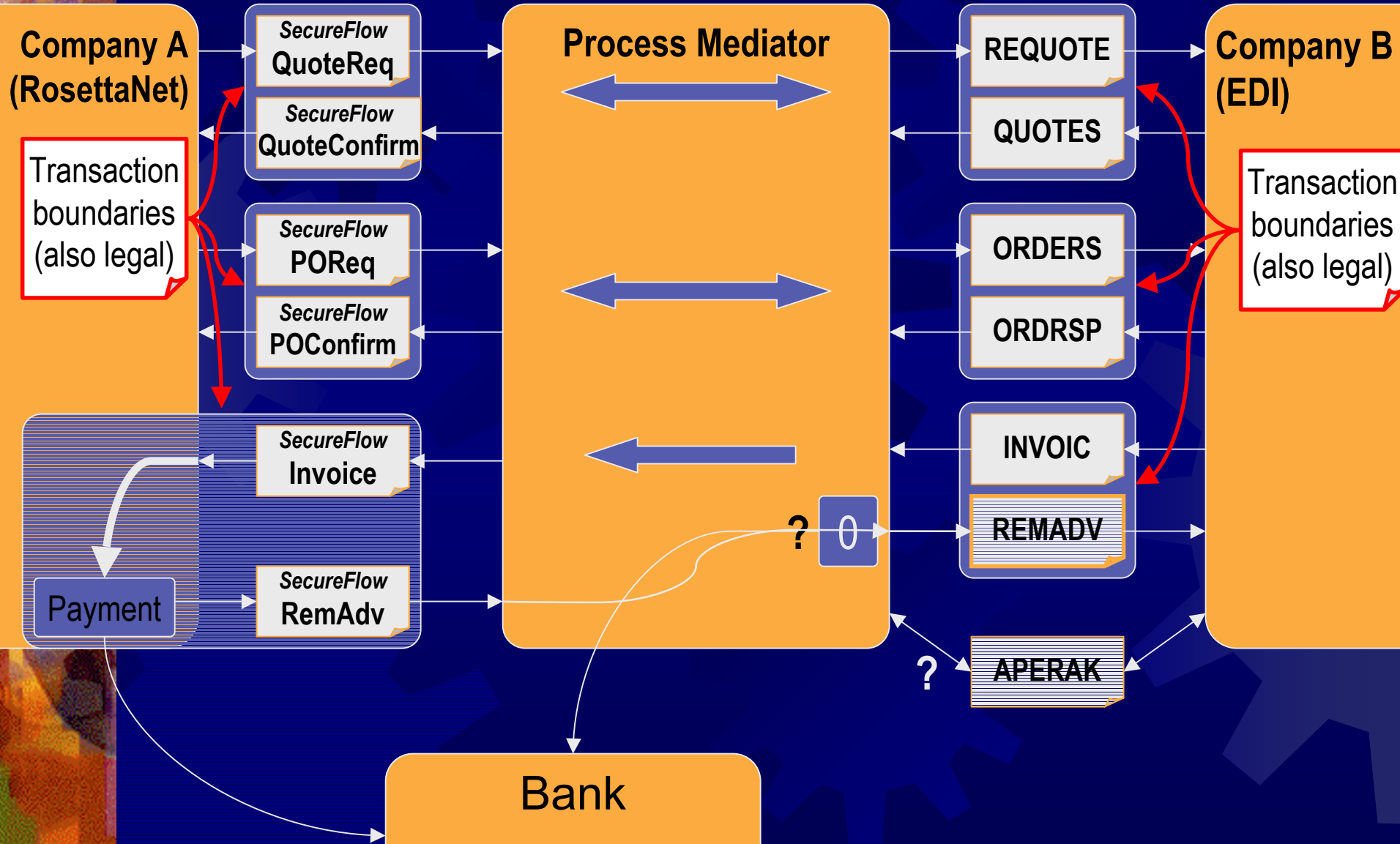


★ Both partners follow this model

- Required for interoperability
- Clear transaction boundaries

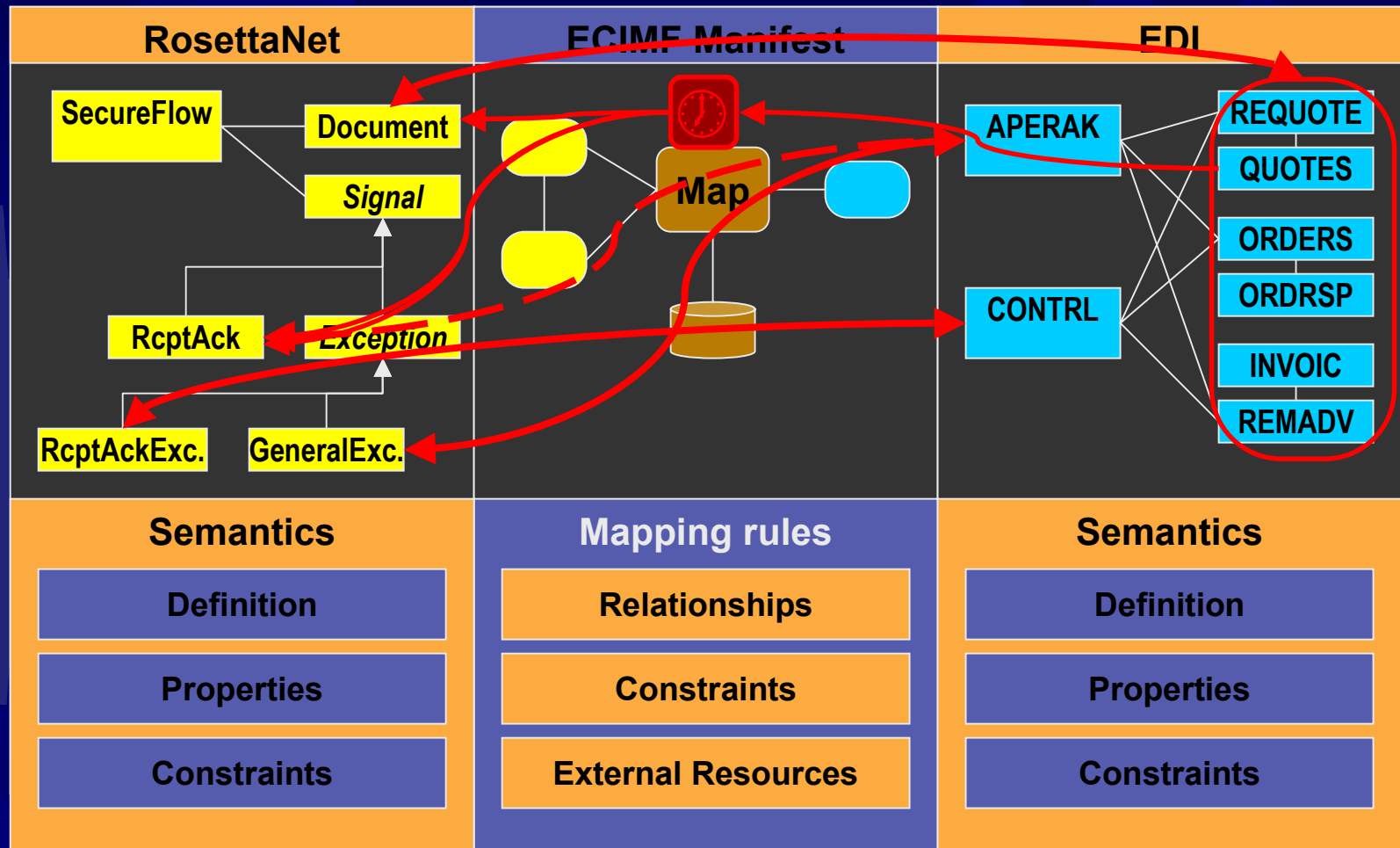


Process mediation





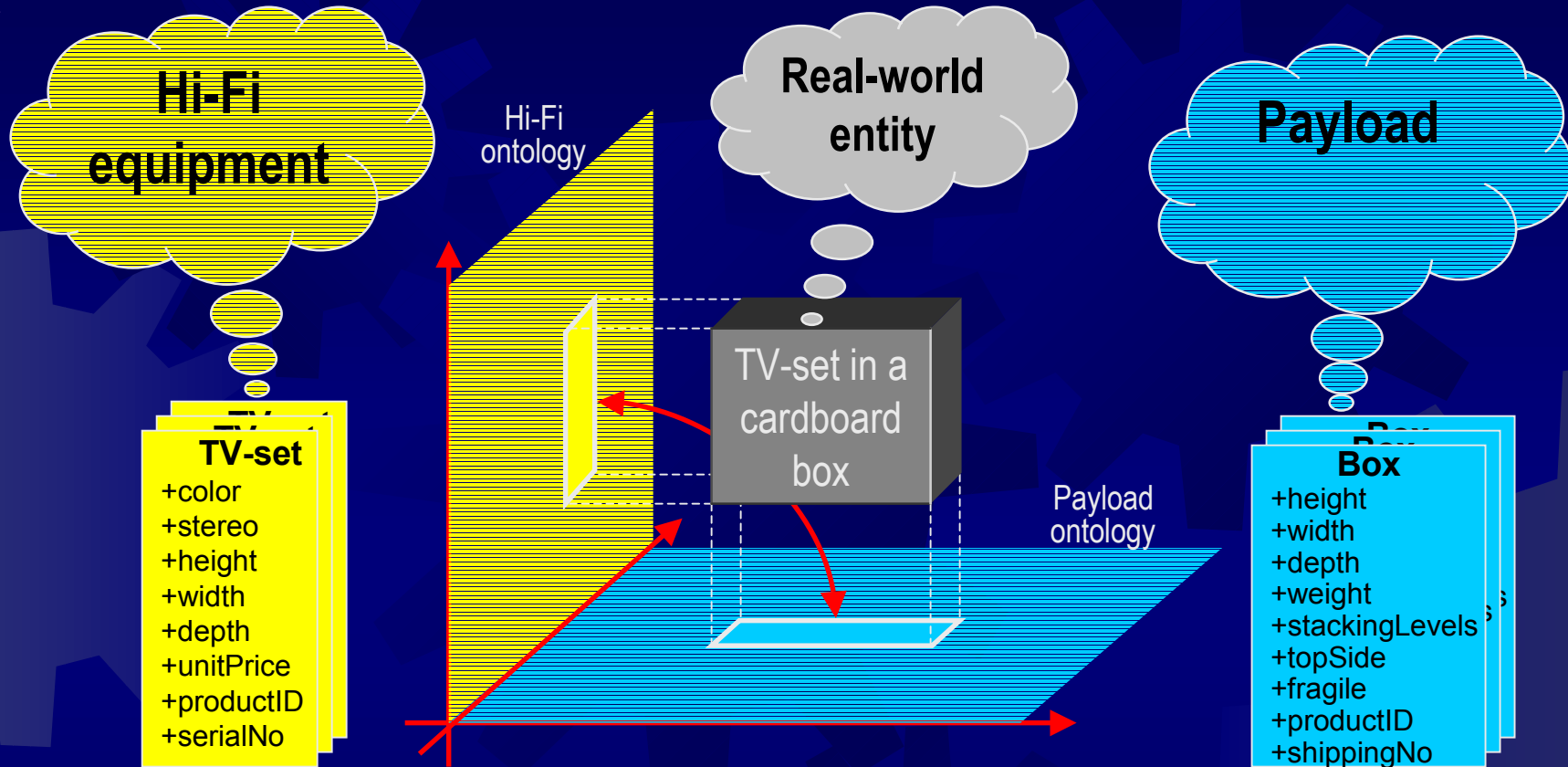
Semantic translation (1)



- ☀ Semantic translation rules
 - ☀ Influence both the process mediation and the syntax mapping



Semantic translation and ontologies



★ Ontologies

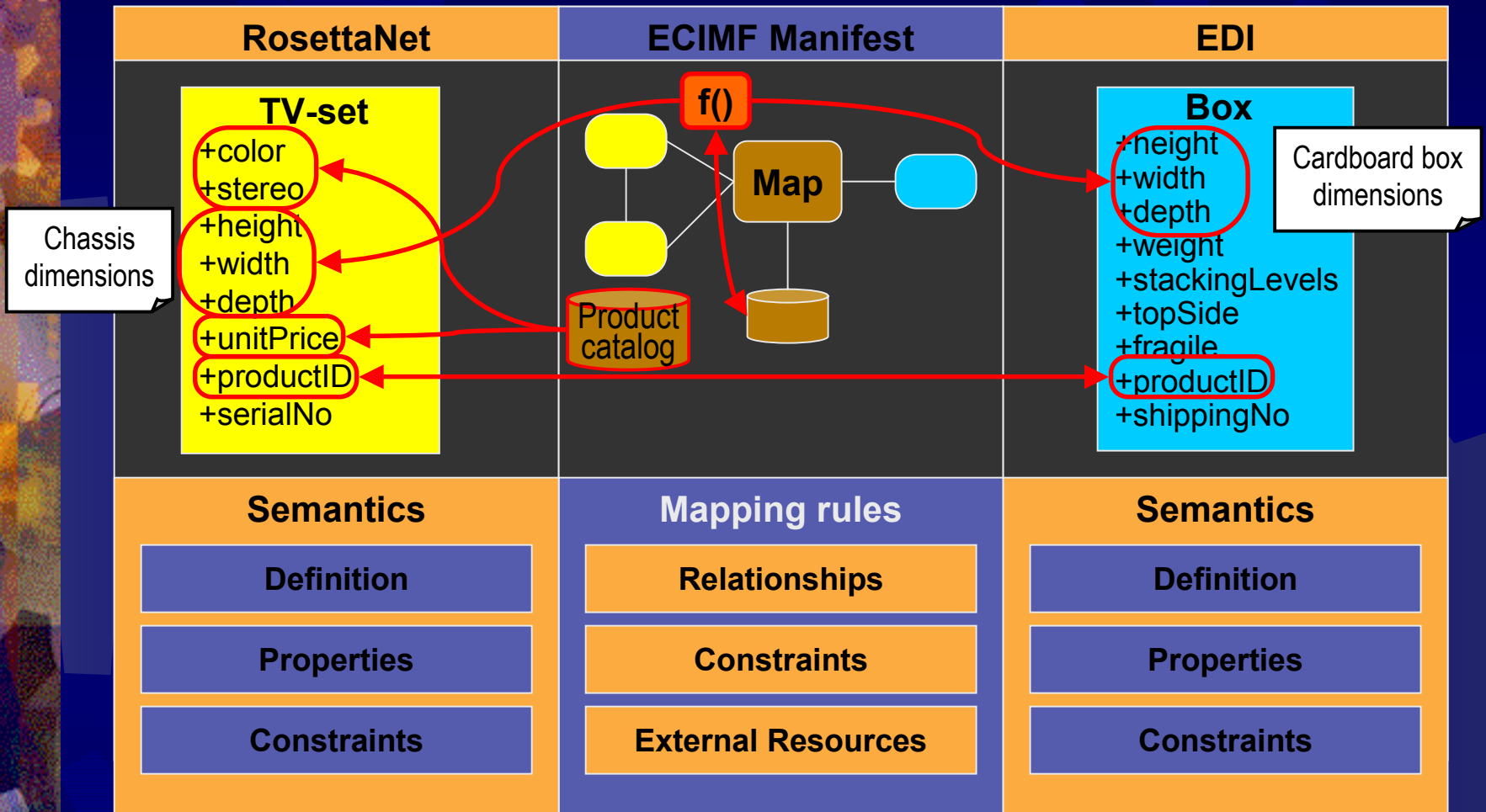
- Specification of a shared conceptualization of a domain, "consensus view"

★ Approximate re-classification

- Semantic enrichment
- Upper-level ontologies (shared vocabularies)



Semantic translation (2)

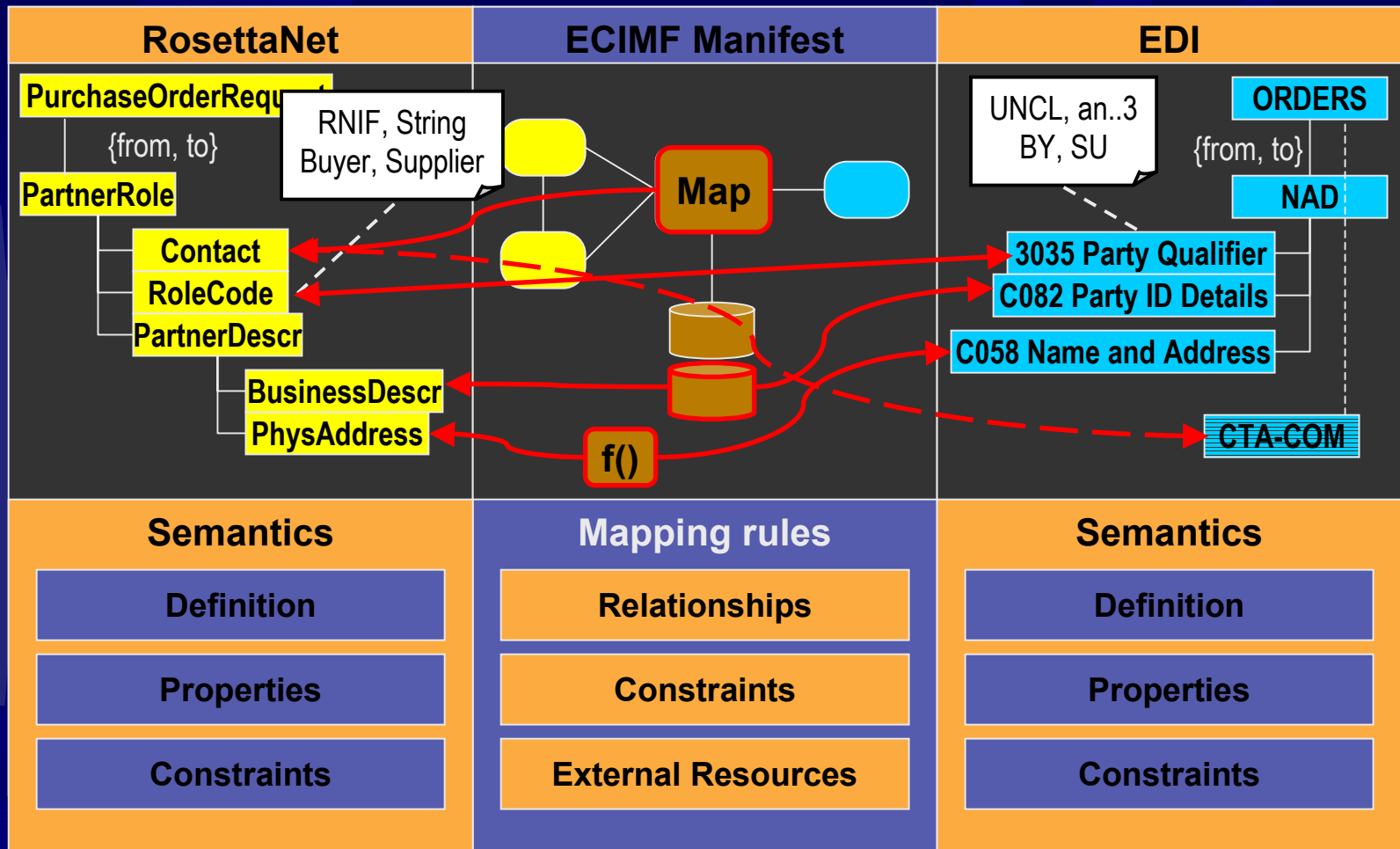


★ Re-classification (changing contexts)

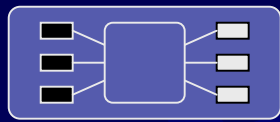
- {Syno-, homo-, hyper-, hypo-} -nyms
- Use of external resources
- Properties vs. associations



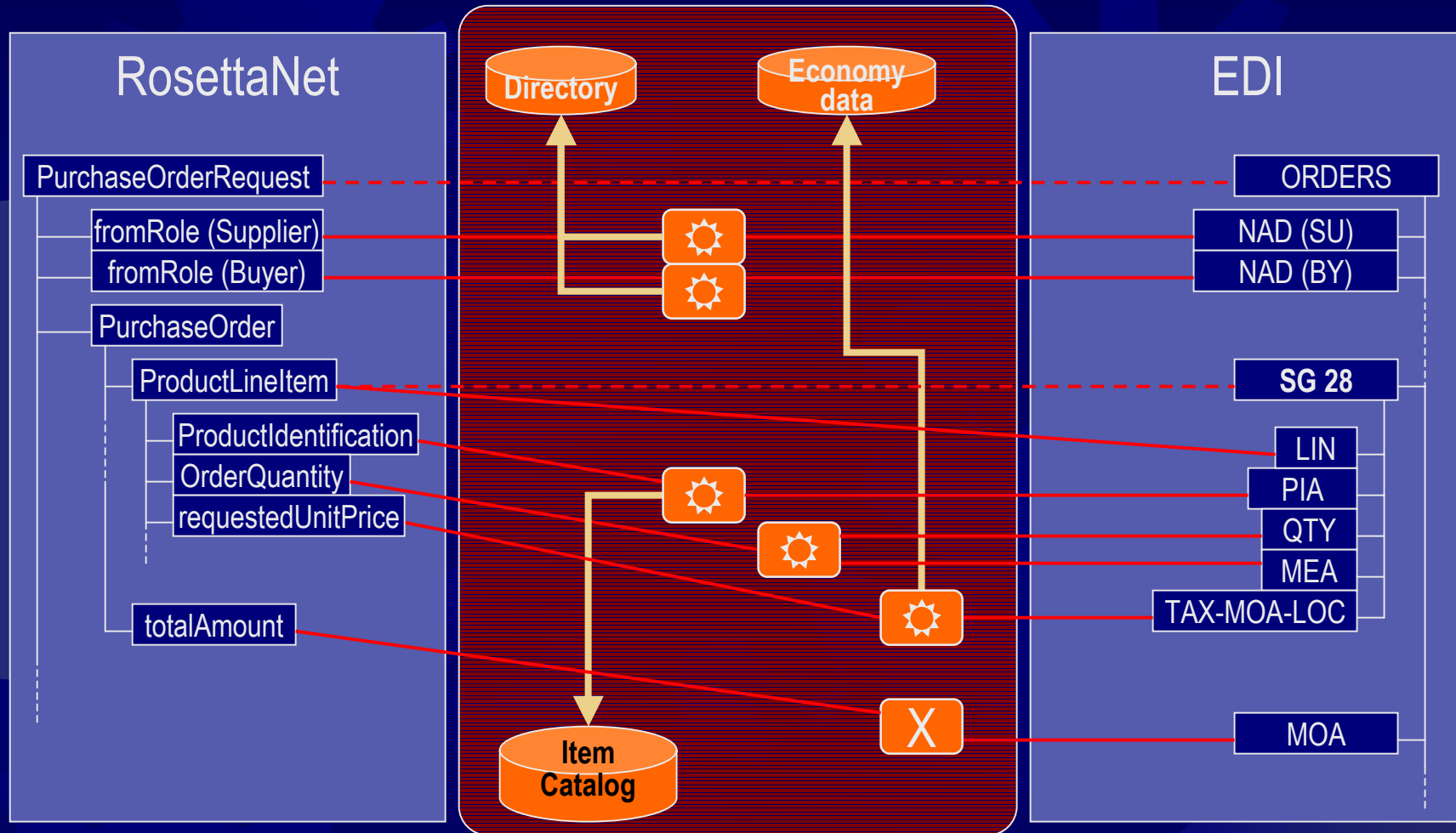
Semantic translation (3)



- ✦ Names of concepts and properties
- ✦ Values & constraints (e.g. code lists, product catalogs)
- **Foundation for syntax mapping**



Syntax mapping



- ☀ Data element mapping
- ☀ Builds on the knowledge collected in previous steps
- ☀ Top-down vs. bottom-up

MANIFEST generation

Manifest

Map id='WidgetsToXYZ'

Framework id='A' name='WidgetsLtd'

BusinessProcessDef

...(an RNIF process def.) ...

Framework id='B' name='XYZ Corp.'

BusinessProcessDef uri='uddi: ...'

...(a BPSS process def.) ...

MappingRules

SemanticTranslation

RuleSet from='A' to='B'

Rule def='box.width = tv_set.width + 5'

Concept in='A' name='TV-set' as='tv_set'

Concept in='B' name='Box' as='box'

...(other mapping rules) ...

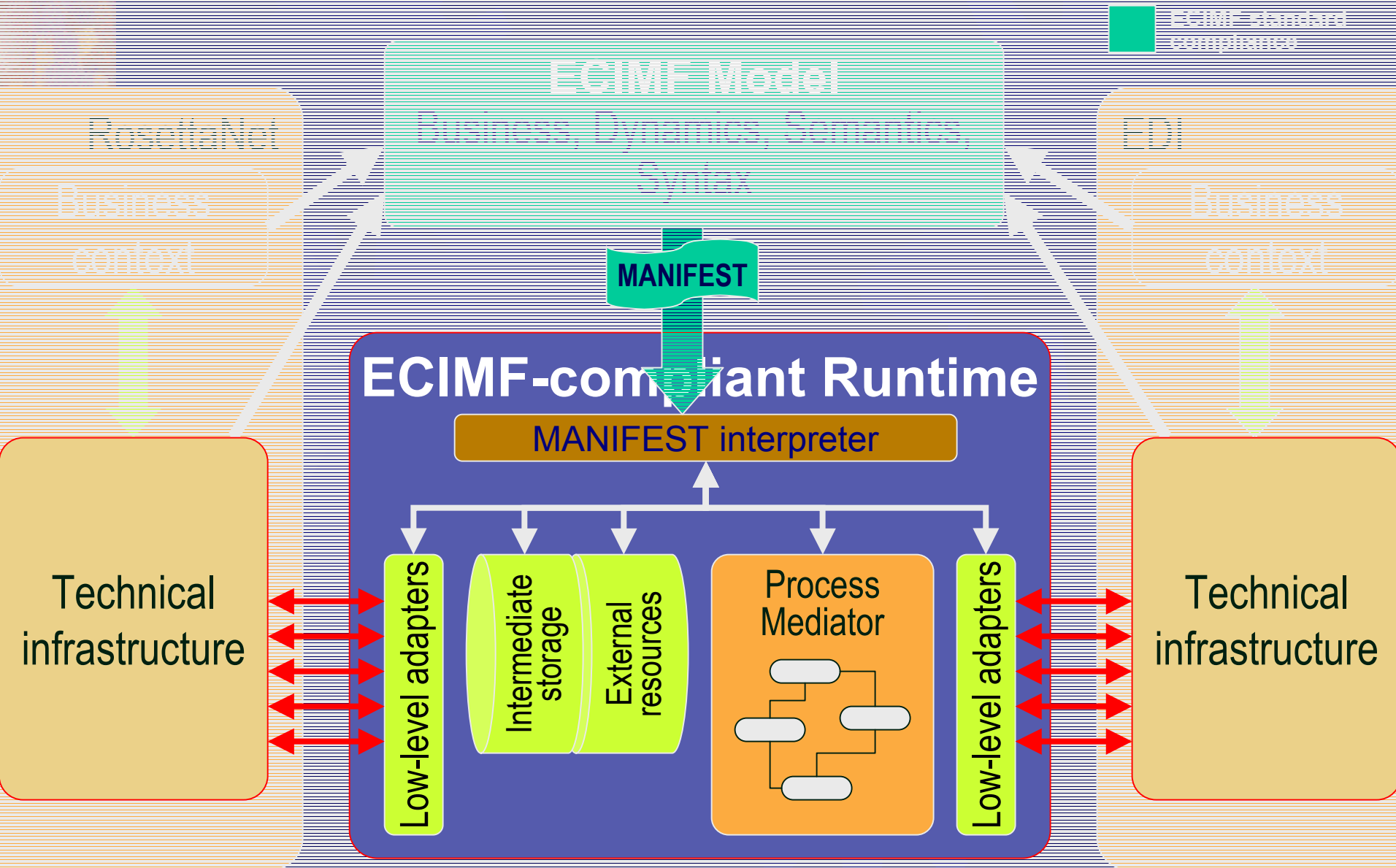
ProcessMediation

...(process mediator spec.) ...

SyntaxMapping

...(message format & protocol mapping) ...

Runtime configuration



Summary

- ★ E-Commerce Integration Meta-Framework
 - ★ Business context
 - ★ Process Mediation
 - ★ Semantic Translation
 - ★ Syntax Mapping
- ★ Work in progress ... Needs more research
 - ★ E.g. REA, UMM, Porter VC, SCOR, STEP/EXPRESS ...
- ★ Needs reviews and contributions from practitioners

Further information

- ★ ECIMF Information Center

- ★ <http://www.ecimf.org>

- ★ CEN/ISSS, Workshop for E-Commerce

- ★ <http://www.cenorm.be/iss>

- ★ <http://www.cenorm.be/iss/Workshop/ec>

- ★ WebGiro AB, Sweden

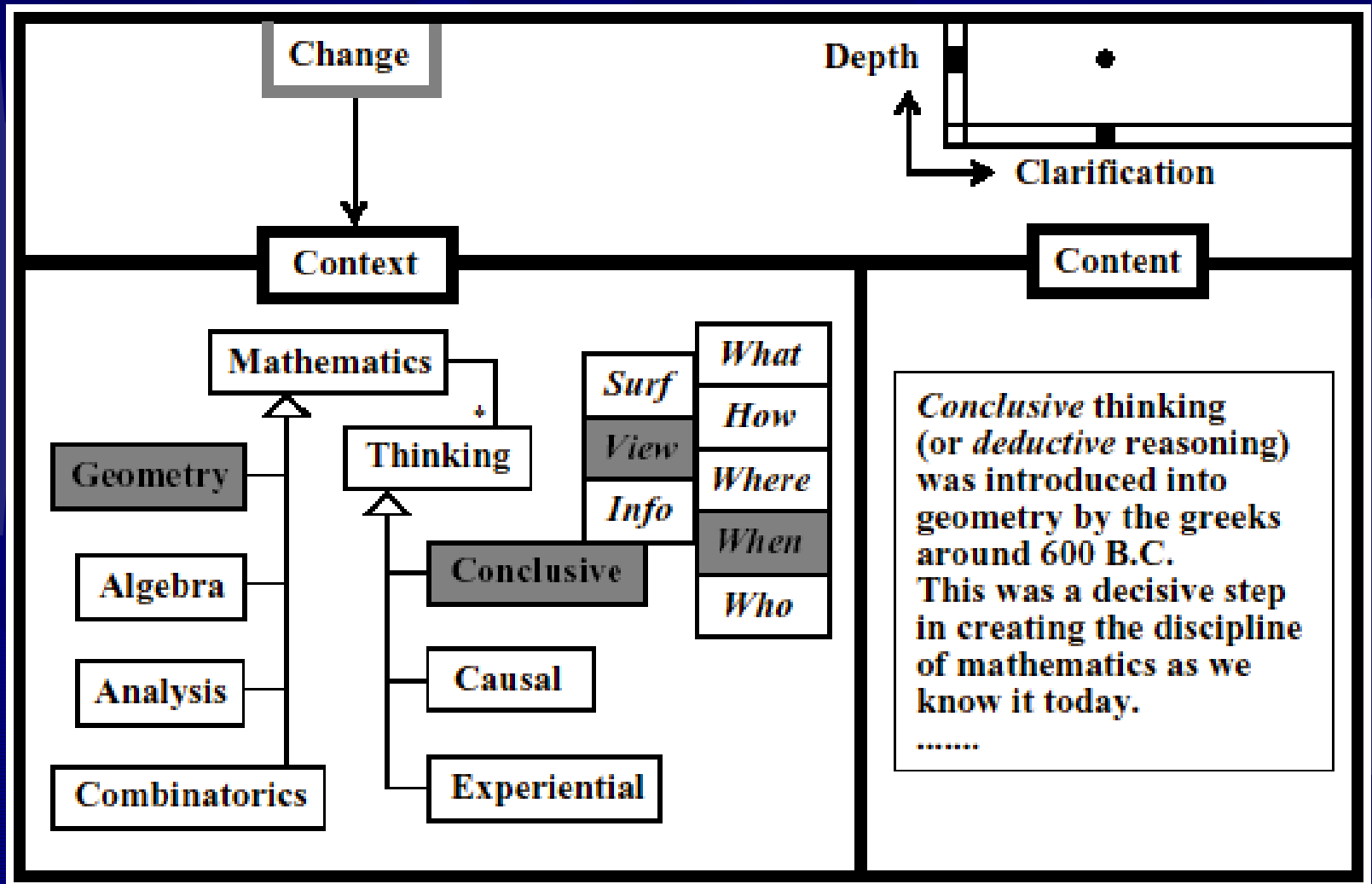
- ★ <http://www.webgiro.com>

- ★ info@webgiro.com

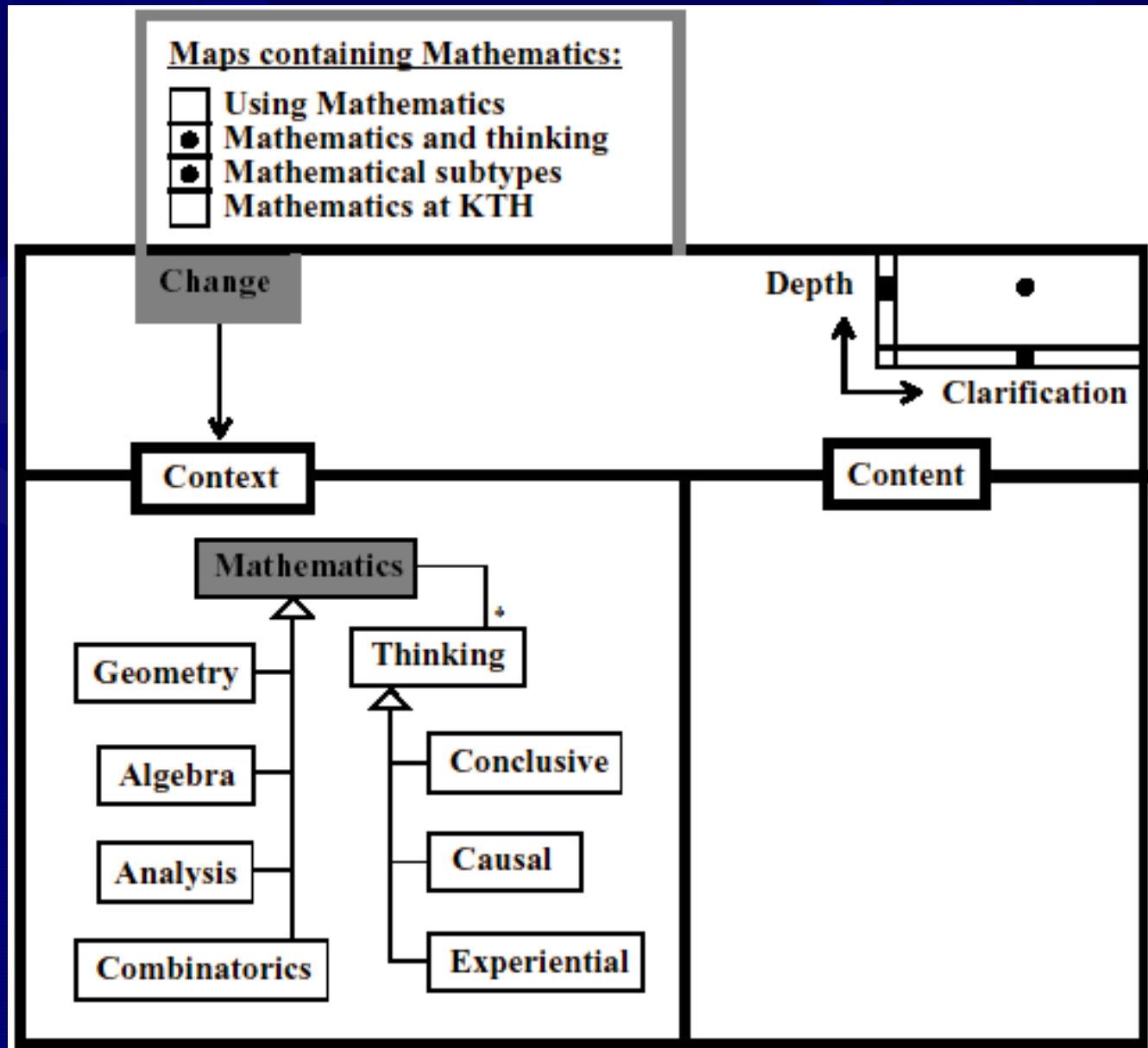
- ★ Contact the author

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Conzilla: content in context



Conzilla: changing context



Conzilla: capturing dynamics

