

## Business Process Compliance Analysis: A Graphical Representation with Tool Support

- Other applications

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## AGENDA

- Enterprise Architecture (EA) principles formalism and analysis
  - Measuring and Managing the Design Restriction of Enterprise Architecture (EA) Principles on EA Models, Diana Marosin, Sepideh Ghanavati, RELAW 2015
  - A Principle-based Goal-oriented Requirements Language (GRL) for Enterprise Architecture, Diana Marosin, Sepideh Ghanavati, Dirk van der Linden, iStar 2014
- Argumentation framework for EA decisions analysis
  - Rationalization of Goal Models in GRL using Formal Argumentation, Marc van Zee, Floris Bex, Sepideh Ghanavati, RENext! 2015



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## Enterprise Architecture (EA) principles formalism and analysis



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## MOTIVATION

- Our understanding :
  - Enterprise Architecture (EA) : a holistic view of the company; incorporates all levels (e.g. IT, business processes...)
  - EA principles : soft laws that are used to steer modelers (architects) in their efforts to create EA
- Main concerns :
  - How the EA principles are reflected into the resulted EA models
  - Evaluate whether the design decisions made by architects are compliant with the principles
  - Calculate the degree of coverage of EA principles by EA models
  - Analyze the impact of misalignments



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## MOTIVATION

### How are EA principles represented ?

- Natural language
- Some fields that need to be defined...
- Company specific

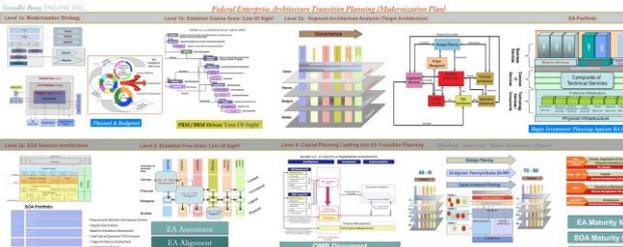
EA Principle Element	Example of EA principle
Principle (The description of the principle)	The enterprise shall re-use the already in use applications and infrastructure. If it is not possible to re-use the existing solutions, then a standard solution shall be purchased. If a standard solution is not sufficient, custom development is the third choice. Applying this principle results in more efficient use of ICT resources and reduces cost and time.
Goal (What is aimed to be achieved)	*Increase the efficiency of resources by re-using (e.g. software licenses, infrastructure) *Reduce the cost of resources.
Current situation (A description of the current situation with regards to the principle)	*ICT department is aware of the trade-off between package selection, build and re-use. *Regular discussions tackle these three options *Similar features are found in more than one system.
Future situation (A description of the situation that would be attainable if this principle is applied)	*There is a catalogue of reusable components *There is a list of criteria for re-usability (e.g., costs and ownership)
Added value (Describes what enforcing the principle should result in. This has to offset the (negative/limiting) consequences)	*Optimal use of existing functionality. *Reduce time by making clear which functionality is already available and can be re-used *Produces reliable and stable ICT environments, Lower diversity.
Constraints (Restrictions caused by enforcing principles)	*The project must balance requirements and functionality that are available off-the-shelf *Purchasing more packages which increase vendor dependency, should be manageable.



## MOTIVATION

### EA models ?

- Multiple EA frameworks
- Multiple modeling languages / styles
- Company specific



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# MOTIVATION



## Why is assessing compliance difficult?

EA Principle Element	Example of EA principle
Goal (What is aimed to be achieved)	<ul style="list-style-type: none"> <li>Increase the efficiency of resources by re-using (e.g. software licenses, infrastructure)</li> <li>Reduce the cost of resources.</li> </ul>
Future situation (A description of the situation that would be attainable if this principle is applied)	<ul style="list-style-type: none"> <li>There is a catalogue of reusable components</li> <li>There is a list of criteria for re-usability (e.g., costs and ownership)</li> </ul>
Added value (Describes what enforcing the principle should result in. This has to offset the (negative/limiting) consequences)	<ul style="list-style-type: none"> <li><b>Optimal use of existing functionality,</b></li> <li>Reduce time by making clear which functionality is already available and can be re-used</li> <li>Produces reliable and stable ICT environments, Lower diversity.</li> </ul>
Constraints (Restrictions caused by enforcing principles)	<ul style="list-style-type: none"> <li><b>The project must balance requirements and functionality that are available off-the-shelf</b></li> <li>Purchasing more packages which increase vendor dependency, should be manageable.</li> </ul>
Application (The activities to be done to transform the current situation to the	<ul style="list-style-type: none"> <li><b>Re-use of components unless it is not</b></li> </ul>

# MOTIVATION



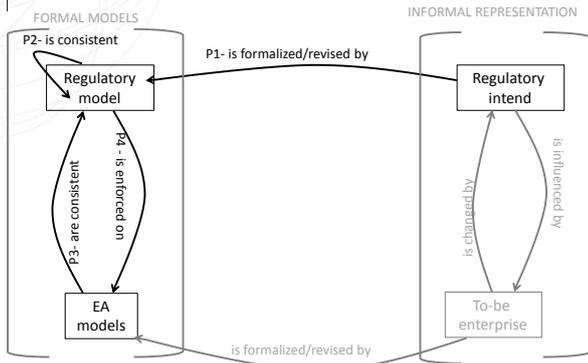
## Why is assessing compliance difficult?

- Principles seen as regulations
  - Purpose – guidance for the evolution of the enterprise
  - Natural language representation
  - Structural representation – common fields found in their definition
- Issues
  - Interpretation
  - Formalism
  - Ranking
  - Applying the principles
  - Conflict with other regulations



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# FRAMEWORK



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# EXAMPLES AND APPLICABILITY



## Case study: XBRL Assurance

(Joris,2014; Ghanavati,2015)

- XBRL is a standard message representation format for exchanging financial information, adopted in the Netherlands as part of a program called Standard Business Reporting (SBR)
- by law, from 2015, annual financial statements need to be filed in XBRL, through the SBR portal.
  - Architecture has to be compliant with 5 EA principles
  - Architecture has to be compliant with the law : Civil Code 2-210 and MIFID regulations
  - TASK:** sign and link the auditor report to the financial statements
    - "Logius" is **constrained** by limited time for implementation and storage space
    - Design decision** : 5 vs 3 XBRL message instances

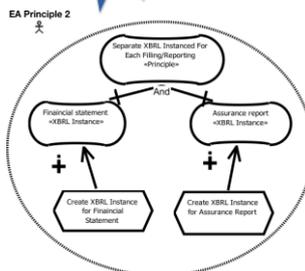
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# EXAMPLES AND APPLICABILITY



## Example : representing EA principle 2 in GRL

"Each filing consists of separate XBRL instances for assurance reports and for financial statements, but the approach should be able to create a **solid link**".



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# EXAMPLES AND APPLICABILITY



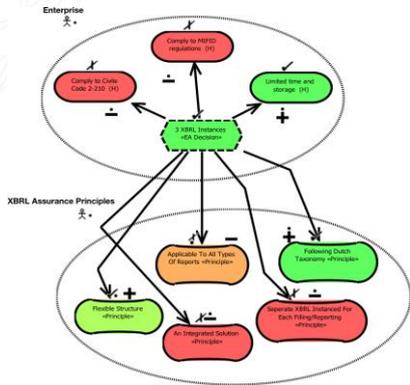
## Example: representing EA principle 4 in GRL

"The standard is applicable to **all types of reports**, and should in principle be applicable both within and outside the Netherlands and the SBR framework".



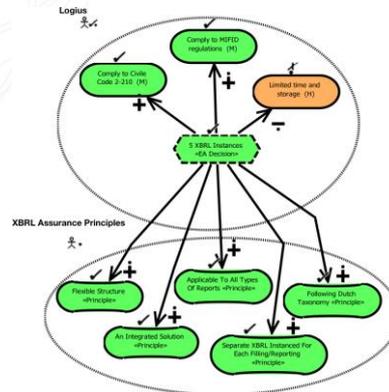
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# EXAMPLES AND APPLICABILITY



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# EXAMPLES AND APPLICABILITY



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## Argumentation framework for EA decisions analysis



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