

MoKi and the ProDe project

Marco Rospocher

Data & Knowledge Management Unit (DKM)

Fondazione Bruno Kessler (FBK)

<http://dkm.fbk.eu/rospocher>

rospocher@fbk.eu

Joint work with:

Gaetano Calabrese, Chiara Ghidini, Nahid Mahbub, Luciano Serafini

It is a **Modeling Tool**;

Supports the **integrated modeling of knowledge**:

Static aspects (e.g. the organizational structure, the products, the documents, ...)



Ontology

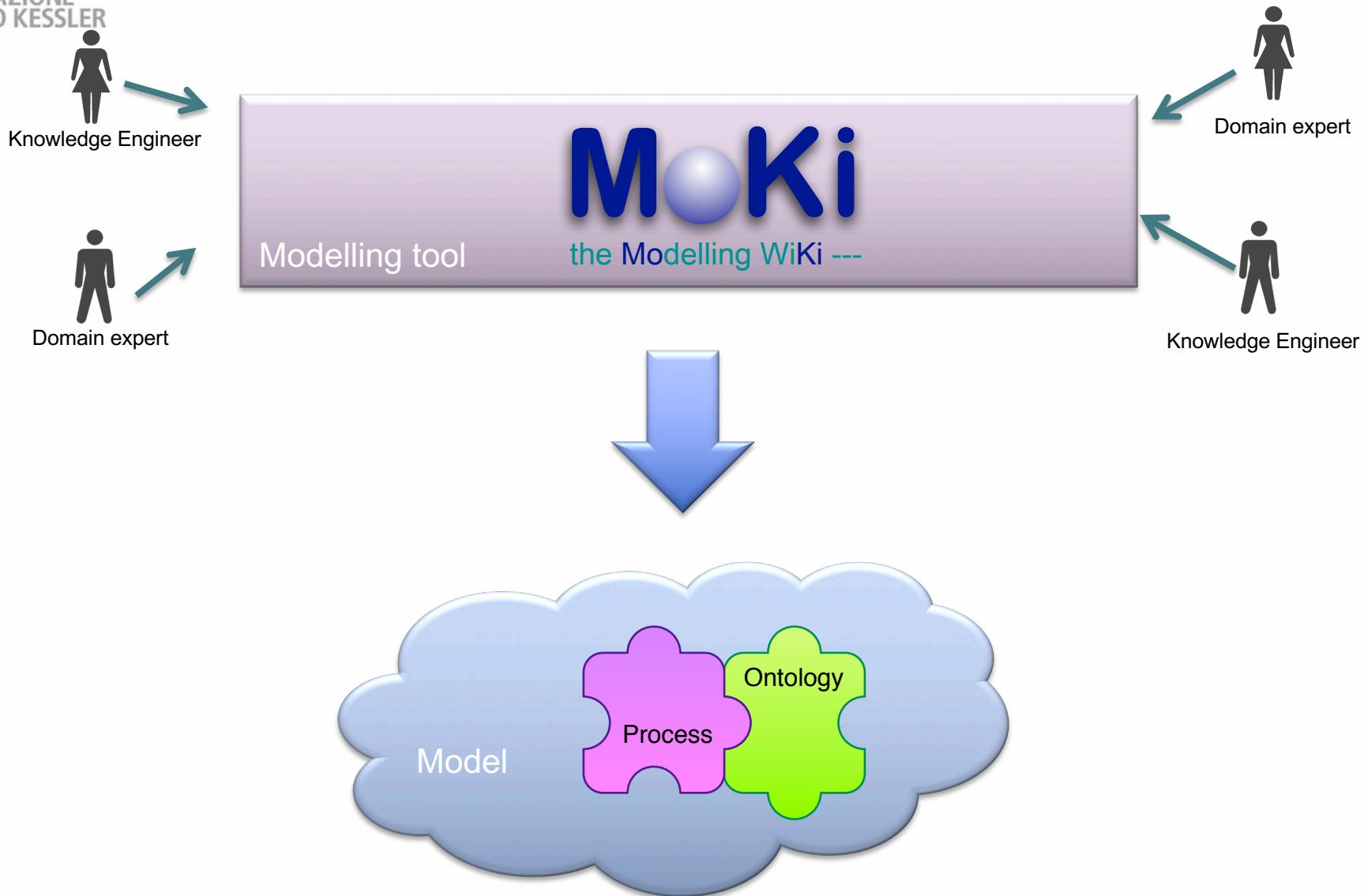
Dynamic aspects (e.g, the procedures, the activities...)



Process Model

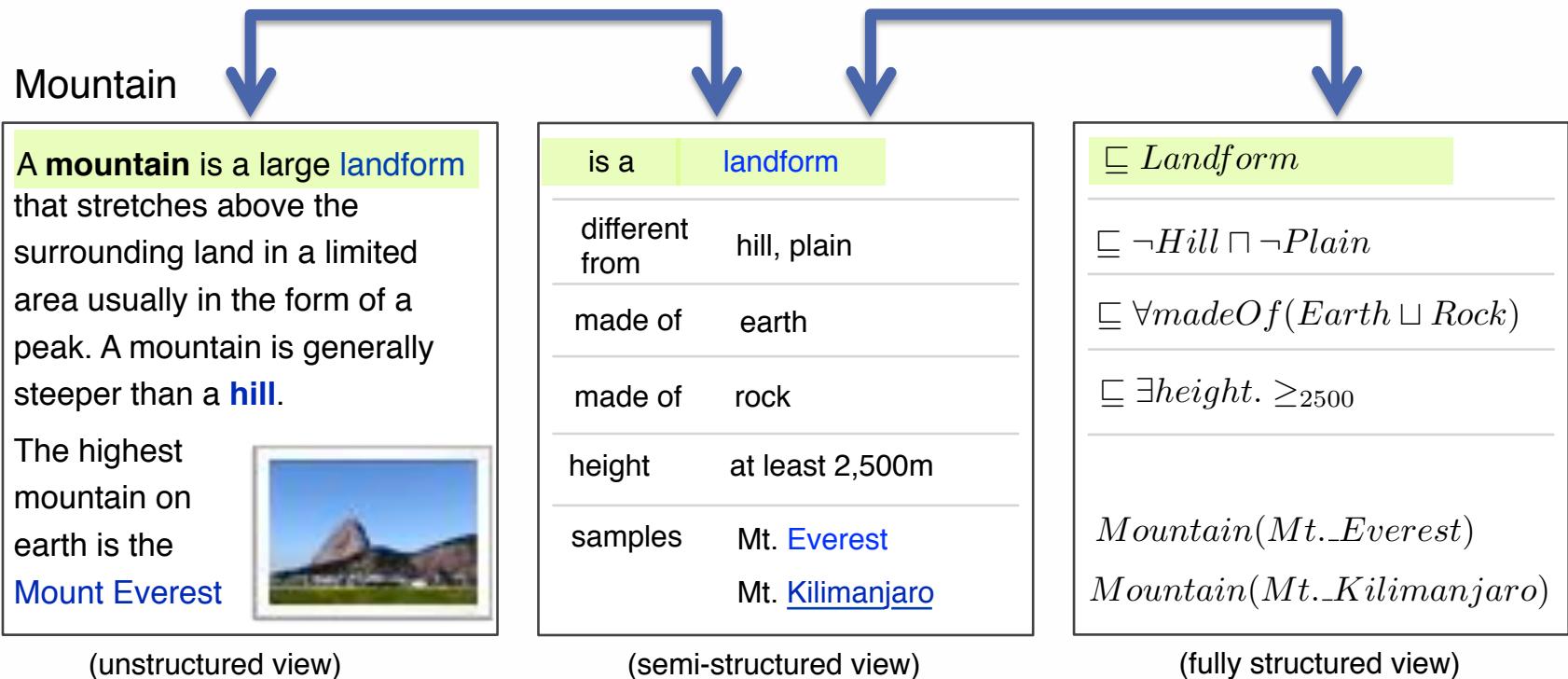
Fosters the **collaboration** between domain experts and knowledge engineers.

The research vision - architecture

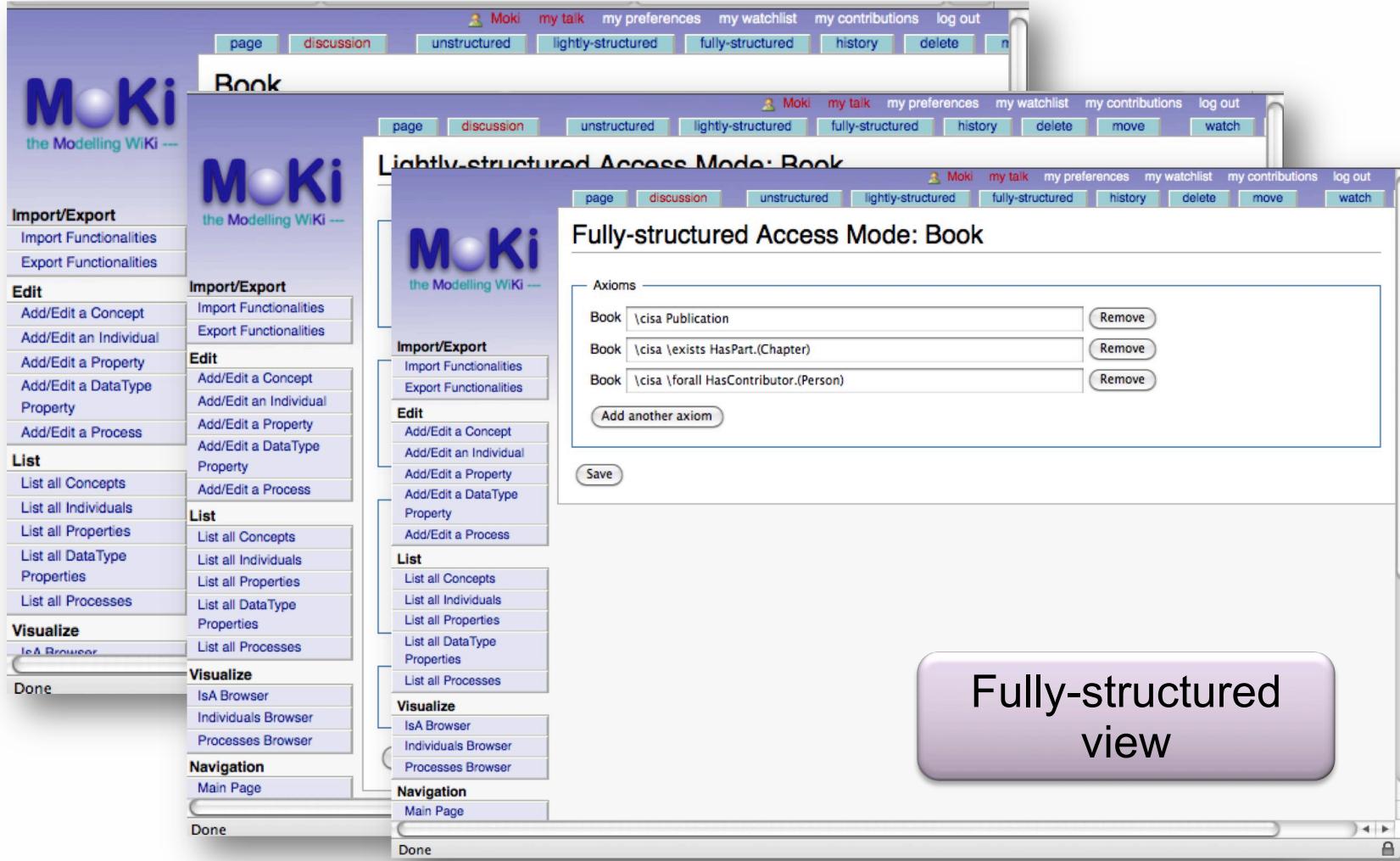


An architecture for collaborative conceptual modeling

Collaborative modeling in a wiki



Different views for different roles



The screenshot displays three views of the MOKi modelling wiki, each representing a different access mode:

- Unstructured Access Mode: Book** (Top Left): Shows a basic navigation bar with links for page, discussion, unstructured, lightly-structured, fully-structured, history, delete, and my talk.
- Lightly-structured Access Mode: Book** (Middle Left): Adds a "watch" link to the navigation bar.
- Fully-structured Access Mode: Book** (Bottom Right): Adds a "move" link to the navigation bar.

The main content area for the Fully-structured view shows a list of axioms for the concept "Book".

Axioms	
Book \cisa Publication	<input type="button" value="Remove"/>
Book \cisa \exists HasPart.(Chapter)	<input type="button" value="Remove"/>
Book \cisa \forallall HasContributor.(Person)	<input type="button" value="Remove"/>
<input type="button" value="Add another axiom"/>	
<input type="button" value="Save"/>	

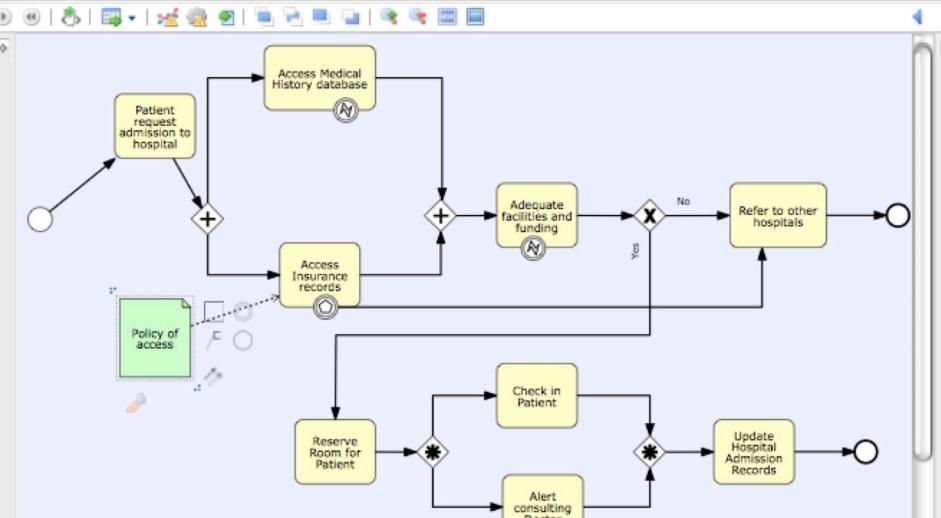
Fully-structured view

Different views for different roles

Hospital Administration

Lightly-structured Access Mode: Hospital Administration

Fully-structured Access Mode: Hospital Administration



```

graph LR
    A["Patient request admission to hospital"] --> B["Access Medical History database"]
    B -- Yes --> C["Access Insurance records"]
    C --> D["Reserve Room for Patient"]
    C --> E["Check in Patient"]
    D --> F["Alert consulting Doctor"]
    E --> F
    F --> G["Update Hospital Admission Records"]
    B -- No --> H["Refer to other hospitals"]
  
```

The interface shows three tabs for access modes: **Lightly-structured**, **Fully-structured**, and **Unstructured**. The **Fully-structured** tab is active, displaying the detailed process diagram.

Import/Export

- Import Functionalities
- Export Functionalities

Edit

- Add/Edit a Concept
- Add/Edit an Individual
- Add/Edit a Property
- Add/Edit a DataType
- Property
- Add/Edit a Process

List

- List all Concepts
- List all Individuals
- List all Properties
- List all DataType Properties
- List all Processes

Visualize

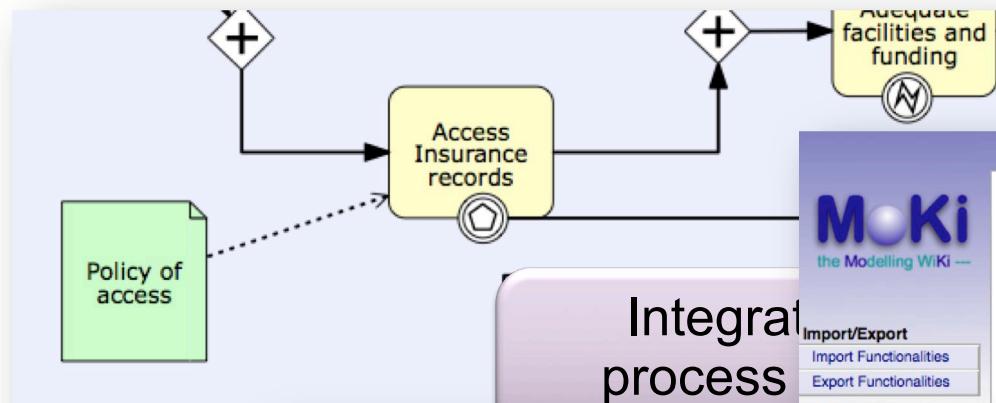
- IsA Browser
- Individuals Browser
- Processes Browser

Navigation

- Main Page

Done

Further features



Integration process

The diagram illustrates an integration process. A green box labeled "Policy of access" has a dashed arrow pointing to a yellow box labeled "Access Insurance records". This box has a solid arrow pointing to another yellow box labeled "Accruable facilities and funding". A plus sign (+) symbol is placed near the first two boxes, indicating they are inputs to the third.

MOKi
the Modelling WiKi --

special page

Browser IsA

Expand all | Collapse all | Expand selected sub-hierarchy | Collapse selected sub-hierarchy

- Thing
 - AcademicStaff
 - FBKReseracher
 - FacultyMember
 - AssistantProfessor
 - AssociateProfessor
 - ExchangeProfessor
 - FullProfessor
 - HonoraryProfessor
 - ProfessorEmeritus
 - ResearchScientist
 - VisitingProfessor
 - Lecturer

Import/Export | Import Functionalities | Export Functionalities | Edit

Extract new concepts from textual resources

(Powered by Kx - a Keyphrase eXtraction system)

Files

Upload a new file: Browse... Upload File

Show uploaded files | Remove all uploaded files

Configure and Run

Re-load Default Settings

Language: english | Domain:

Percentage of relevant concepts to return:

Take multiword expressions that occur at least:

- 2 times in a document
- 8 times in the corpus

Maximum length of multiword expressions:

Prefer key-concepts occurring early in the text:

Prefer specific key-phrases:

Extract relevant concepts

Graphical editing

Term extraction

MoKi Details

It is an extension of **MediaWiki** (e.g. Wikipedia) (GPLv2+)

Supports collaborative editing;

Only a web-browser is required on the client side;

Platform independent (needs at least Apache, MySQL, Php)

Basic versioning facilities.

Released Open Source on the 29th July 2010;

License: **GPL2** (due to reuse of other GPL2 code);

~210 downloads from the release;

~5 unique access per day (web-site).

Usages of MoKi

Previous Usages:

4 companies + 3 universities (APOSDE EU project)
build integrated model of a domain;
FAO (Organic.Edunet EU project)
build/revise ontology of organic agriculture;
Some summer schools and university courses
tool for conceptual modeling;

Current Usages:

FBK (eOnco project / eHealth)
“organizational” processes in real medical domain;
FBK (PESCaDO EU project)
build an environmental ontology
Italian company
modeling email marketing domain;

Trentino PA and Informatica Trentina (ProDe project)
model processes for analysis/revision and dematerialization.

The ProDe project

Italian interregional project;

Involves some regions and autonomous provinces;

Dematerialization:

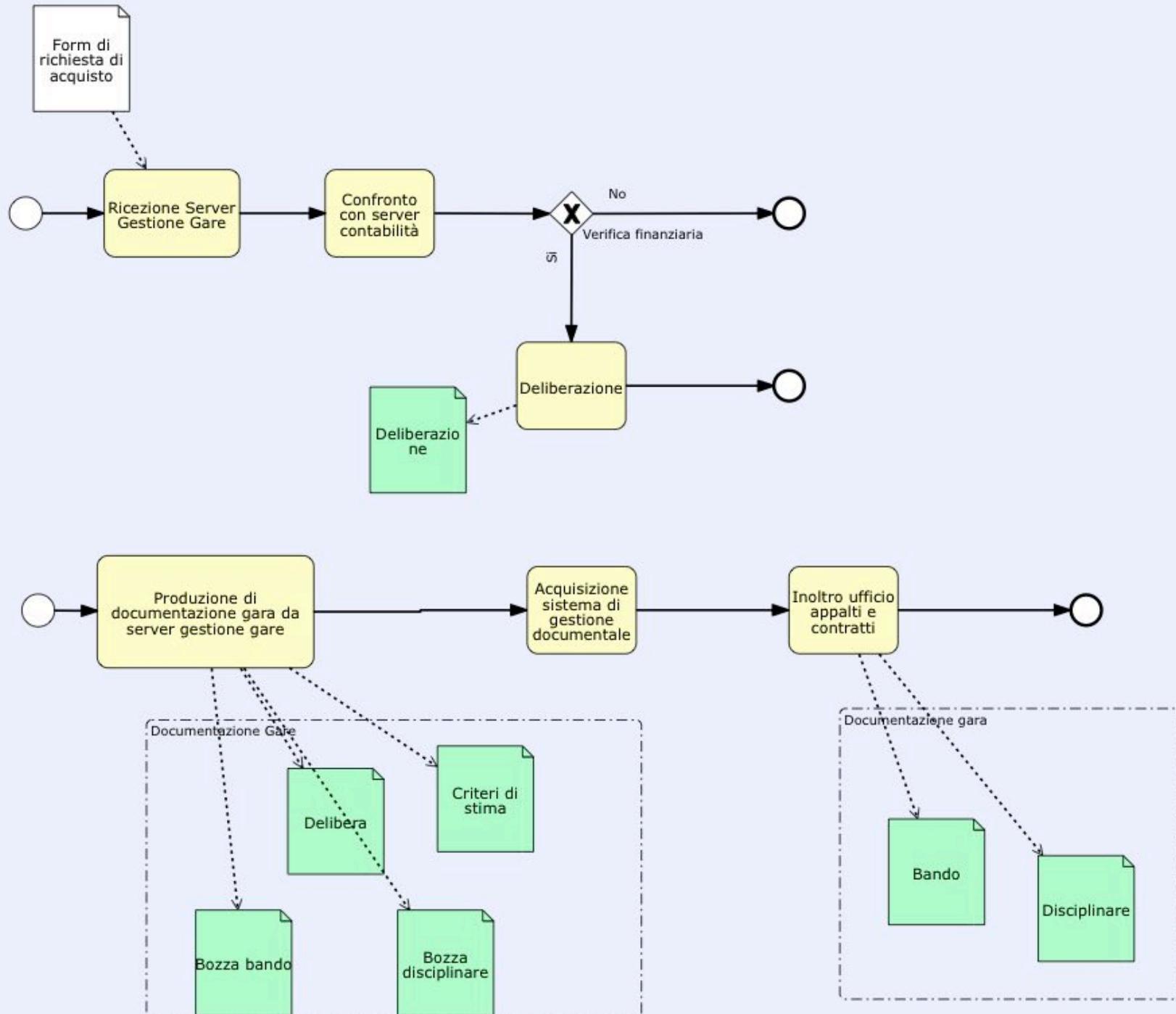
for a public administration agency, to be able to replace paper documents with digital versions

Why dematerializing?

To reduce expensive inefficiencies;

Goal:

Define **a reference model** for the dematerialization of public administrations;



The usage in the ProDe project

Currently used by 5 (out of 7) Italian regions in ProDe:
Puglia, Liguria 1, *Trentino*, Emilia Romagna, Liguria 2.

Decision to use MoKi based on:

- Ability to store wiki based and formal content;
- Ability to represent integrated processes and ontologies;
- Easy to use;
- Collaborative features;
- On-line repository of knowledge.

(First) Data on usage

Usage has started after an info day on MoKi on February 2nd.

Medium size models produced in around 2 weeks.

	Processes	Documents	Attributes	Document descriptions
Puglia	33	17	7	5
Liguria	38	36	2	35
Trentino	35	24	3	8
Emilia-Romagna	47	55	2	21
Liguria	0	26	0	0

MoKi & ProDe: Resources

MoKi WebSite: <http://moki.fbk.eu>

On-line demos, downloads, documentation, news, support...

ProDe WebSite: <http://www.progettoprode.it/>

Spotlights:

ComunicazioneFBK's YouTube Channel:

<http://www.youtube.com/user/ComunicazioneFBK>

- MoKi: <http://www.youtube.com/watch?v=S0AM6FZysu0>
- ProDe: <http://www.youtube.com/watch?v=v3xKXlY21-U>