



Gabriele Zereik



D'agostino D., Roverelli L., Danovaro E., Clematis A., Galizia A.

EasyGateway

Dressing Apache Airavata service
with automatically user-generated
interfaces

Outline

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EasyGateway

1. Why?
2. What is?
3. Architecture

2

Using EasyGateway

3

Submission to Airavata

Outline

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1

EasyGateway

1. Why?
2. What is?
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Using EasyGateway

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Submission to Airavata

EasyGateway – Why?

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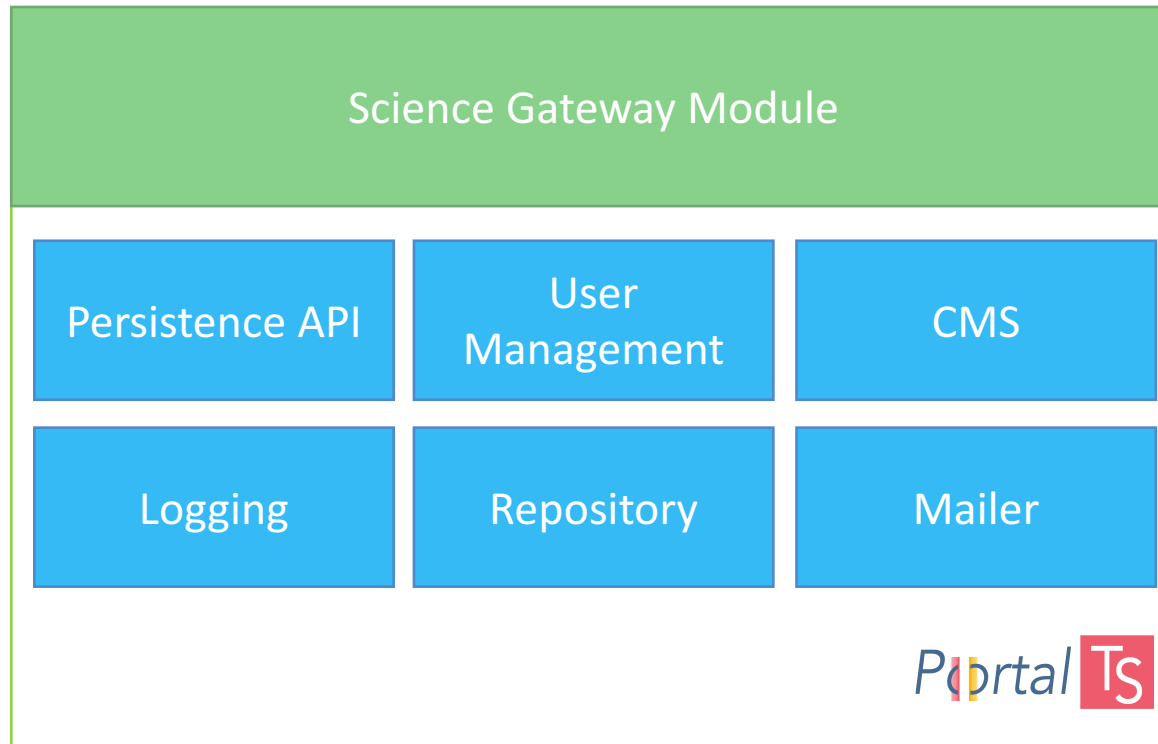
- Accelerate Science Gateways front-end development
 1. Based on real-world experience in developing Science Gateways*
- Provide a set of high level features
 1. Automatic generation of configuration interfaces
 2. Configuration parameters validation
 3. Result and configuration sharing
 4. Accessibility rights management

* D'Agostino, D., Danovaro, E., Clematis, A., Roverelli, L., Zereik, G., Parodi, A., & Galizia, A. (2015). Lessons learned implementing a science gateway for hydro-meteorological research. *Concurrency and Computation: Practice and Experience*.

* D'Agostino D, Roverelli L, Zereik G, De Luca A, Salvaterra R, Belfiore A, Lisini G, Novara G, Tiengo A. (2016) A microservice-based portal for X-ray transient and variable sources.

EasyGateway – What is?

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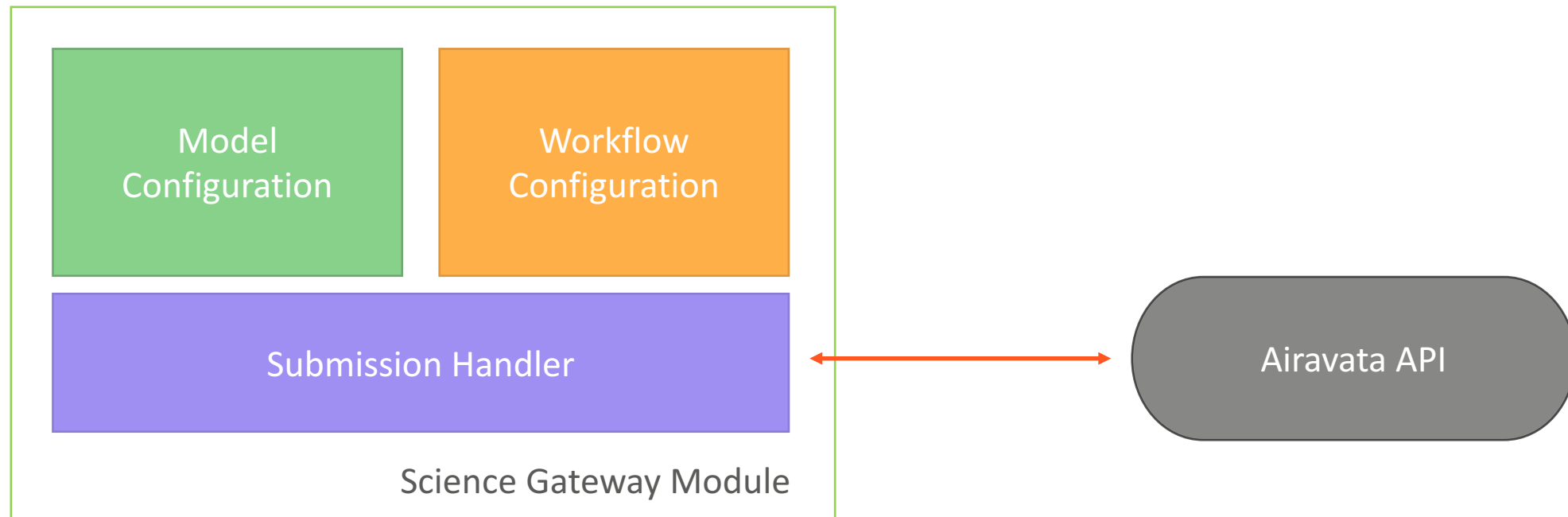
Based on *Portal* **TS** *

- General purpose Web portal
- Modular
- Science Gateway Module

*<http://www.portalts.it>

EasyGateway – Architecture

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Outline

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EasyGateway

1. Why?
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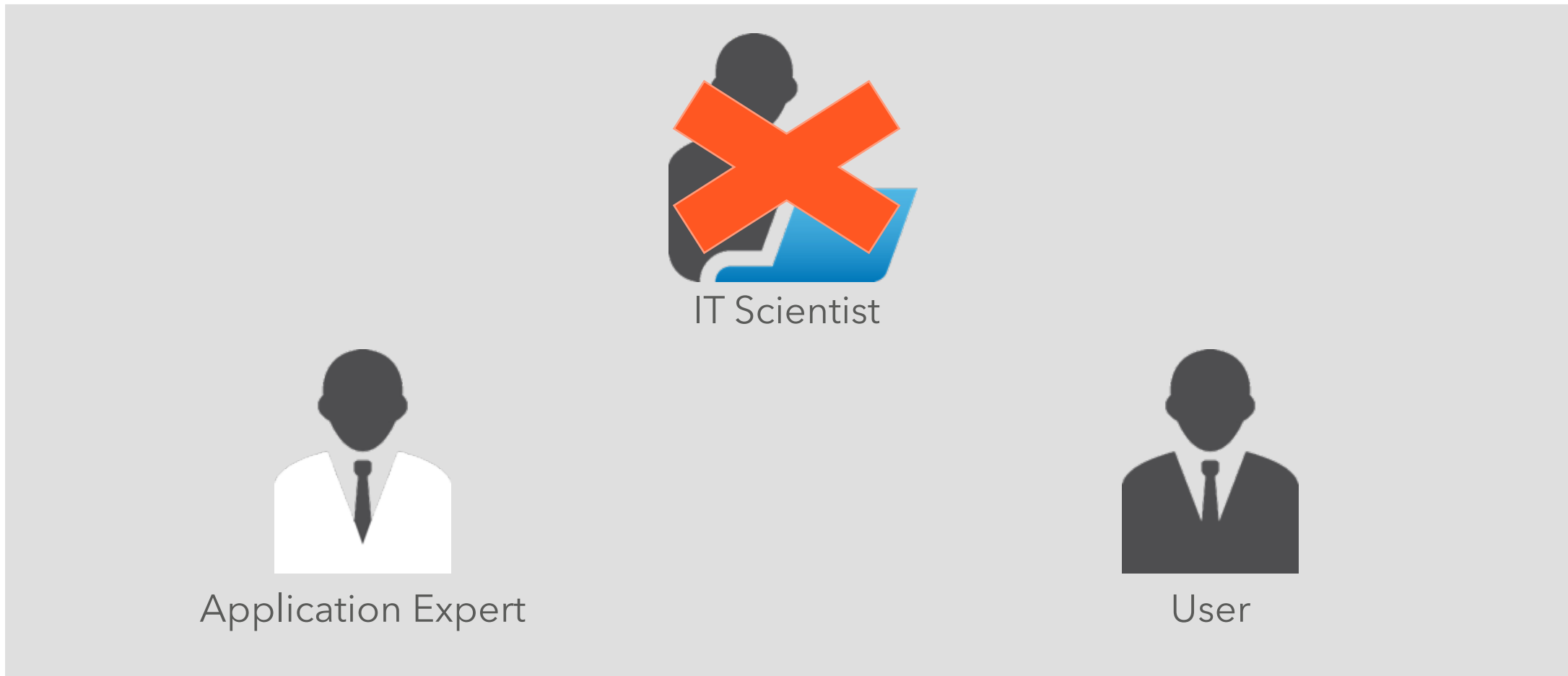
Using EasyGateway

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Submission to Airavata

Using EasyGateway – Users

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Using EasyGateway – Users

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Application Expert

- Class definition
- Application definition
- Parameters configuration
- Parameters validation

Grid spacing value must be greater than Parental Grid Ratio value

Meteo Apps

Hydro Apps

Grid Spacing

(Integer)

WRF

Cosmo

Parental Grid Ratio

(Integer)

Debug

(Select [True, False])

Using EasyGateway – Users

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User

- Workflow configuration
- Workflow execution
- Results collection
- Sharing

Using EasyGateway – Type Definition



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Home App Definition Type Definition Workflow Configuration Results Administration Logout

Application Types

Type	Actions
Meteo	Edit Delete
Ensemble	Edit Delete
Hydro	Edit Delete

[First](#) [1](#) [Last](#)

[Add application type](#)

Workflow connection rules

Meteo	Hydro	Delete
Meteo	Ensemble	Delete
Ensemble	Hydro	Delete

Meteo

Hydro

[Add rule](#)

Using EasyGateway – Application Definition



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Time

EASY GATEWAY Home Models Configuration Model Types Workflow configuration Results Administration Signup Logout Login

Simulation Models

Name	Type	Actions
RainFARM	Ensemble	Edit Delete
Wrf-arw	Meteo	Edit Delete

First < 1 > Last

[Add Model](#)

☐ Scientist

[Models list](#) [Save](#)

Using EasyGateway – Parameters Definition



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Simulation Models

Basin boundaries parameter configuration

Type

Namelist name

Generic fields

Domains required

Markers required

Editable

Specific fields

Only nested domains

Allow markers out domains

User can draw domains

User can draw markers

Maximum number of domains

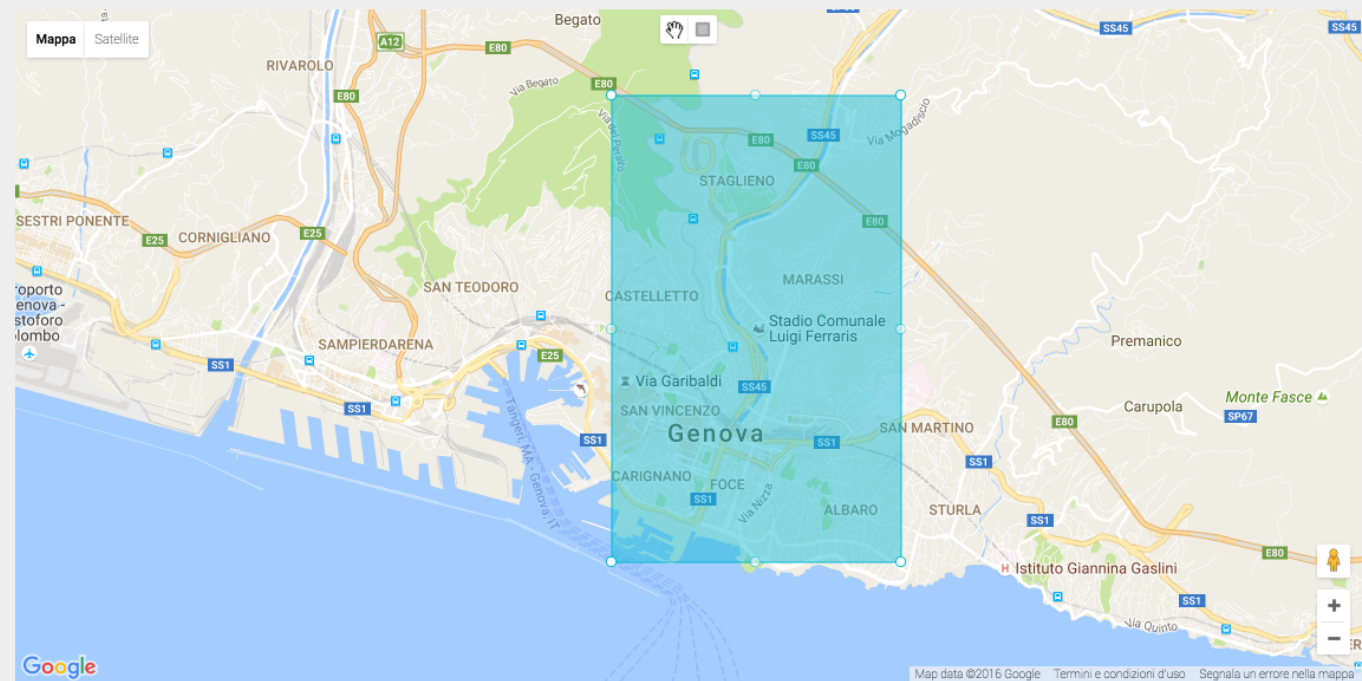
Maximum number of markers

Category

Hint

Draw a rectangular region to define a basin.

Default value



Domain number 1 - South-West: (44.3922, 8.9311) North-East: (44.4406, 8.9732)

[Back](#)

Using EasyGateway – Validation Definition



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EASY GATEWAY Home App Definition Type Definition Workflow Configuration Results Administration Logout

Application Types

Start Date validation expression

Start Date

>

End Date

Add Condition

Start Date value must be earlier than End Date vlaue

Delete

Start Date

<

Static Value

Add Condition

Static Value

01/01/1970

00:00

Start Date must be greater than 01/01/1970

Delete

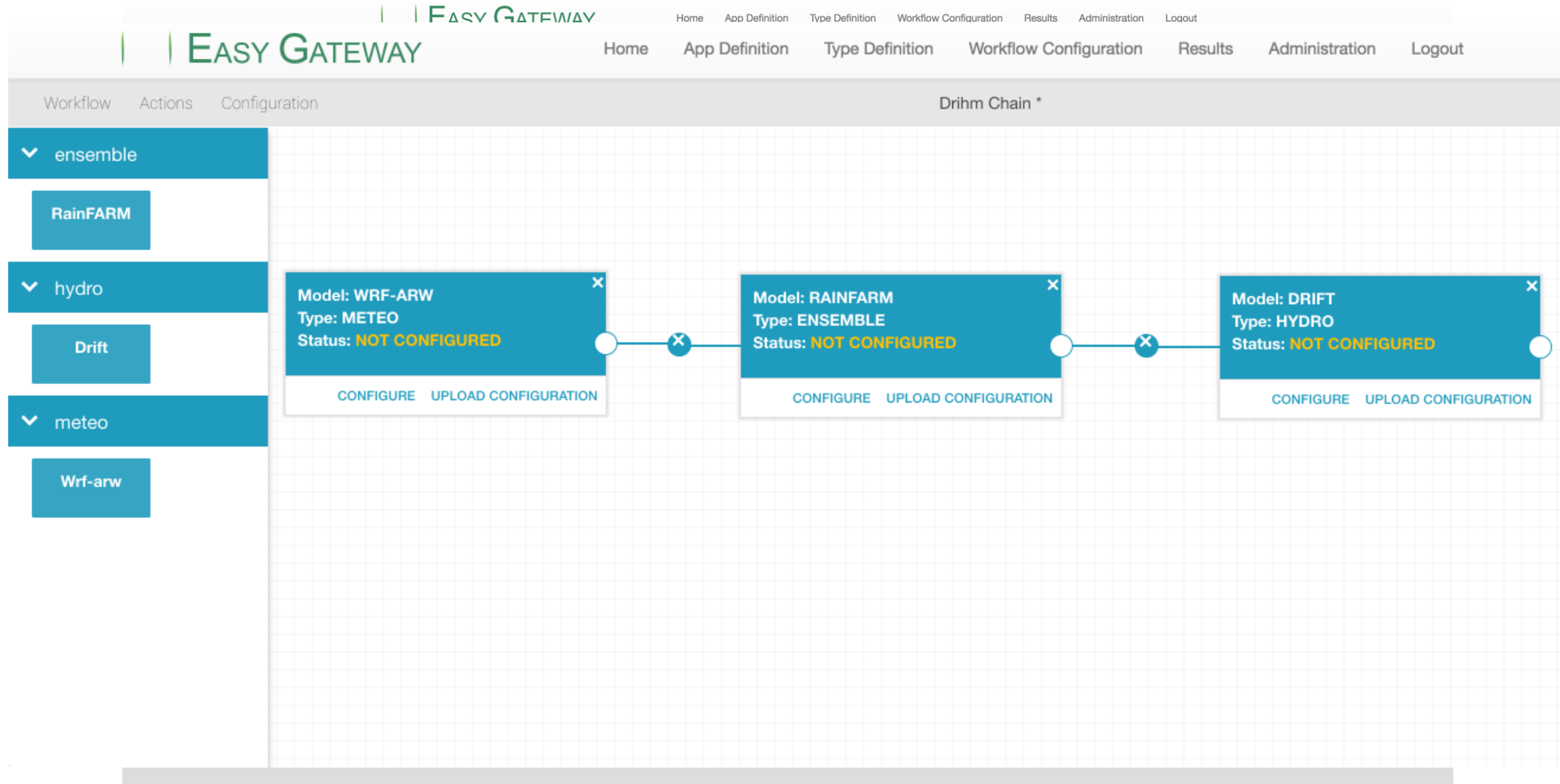
Add expression

Back

Using EasyGateway – Workflow Configuration



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Using EasyGateway – Workflow Execution



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The screenshot displays the EasyGateway web application interface. The top navigation bar includes links for Home, Model Configuration, Model Types, Workflow configuration, Results, Administration, Logout, and Login. Below this, a secondary navigation bar shows Home, App Definition, Type Definition, Workflow Configuration, Results, Administration, and Logout. The main content area is titled "Untitled *" and features a grid background. On the left, a sidebar menu is open, showing options like Share..., Open..., Save, Save as..., and a dropdown for "meteo" which includes "Wrf-arw". A modal window in the center displays the configuration for a model named "DRIFT", which is of type "HYDRO" and has a status of "CONFIGURED". The modal also includes buttons for "CONFIGURE" and "UPLOAD CONFIGURATION".

Using EasyGateway – Sharing



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EASY GATEWAY Home App Definition Type Definition Workflow Configuration Results Administration Logout

Workflow Actions Configuration Drihm Chain

ensemble
RainFARM

hydro
Drift

meteo
Wrf-arw

Model: WRF-ARW
Type: METEO
Status: NOT CONFIGURED

Model: RAINFARM
Type: ENSEMBLE
Status: NOT CONFIGURED

Model: DRIFT
Type: HYDRO
Status: NOT CONFIGURED

Share as .. Drihm Chain 11/30

Description
A complete hydro-meteo simulation 33/150

Share with:

- ☒ Anyone
- ☐ Registered
- ☐ Admin
- ☐ Scientist

CANCEL SHARE

Using EasyGateway – Results Collection



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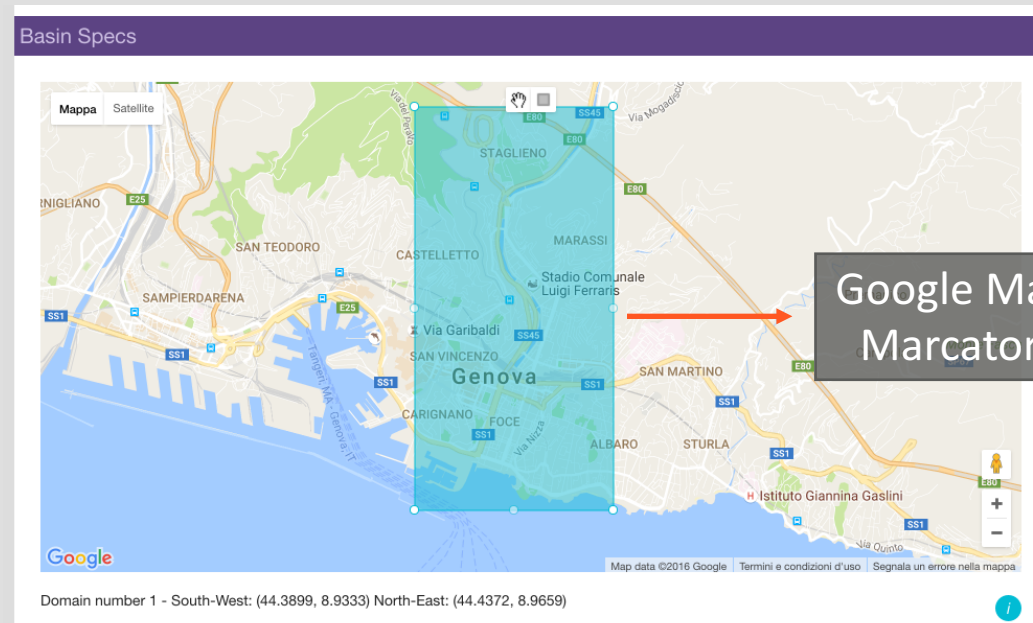
The screenshot displays the EasyGateway web application interface. The top navigation bar includes links for Home, App Definition, Type Definition, Workflow Configuration, Results, Administration, and Logout. The left sidebar shows 'My workflows' and 'Shared' sections. The main content area is titled 'MY WORKFLOWS' and features a tabbed interface with 'RUNNING' and 'ENDED' tabs. The 'RUNNING' tab is active, showing a table of workflow results. The table has columns for NAME, DATE, STATUS, and Author. A workflow named 'Drift' is listed with a date of '04 October 2016 14:14' and a status of 'RUNNING', authored by 'Gabriele'. To the right of the table, there are 'DETAILS' and 'SHARE' buttons. The 'SHARE' button is highlighted with a red circle. Below the table, there is a pagination control showing 'First', '<', '1', '>', and 'Last'.

NAME	DATE	STATUS	Author
Drift	04 October 2016 14:14	RUNNING	Gabriele

First < 1 > Last

Using EasyGateway – Users

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WRF: Rotated Lat-Long

Outline

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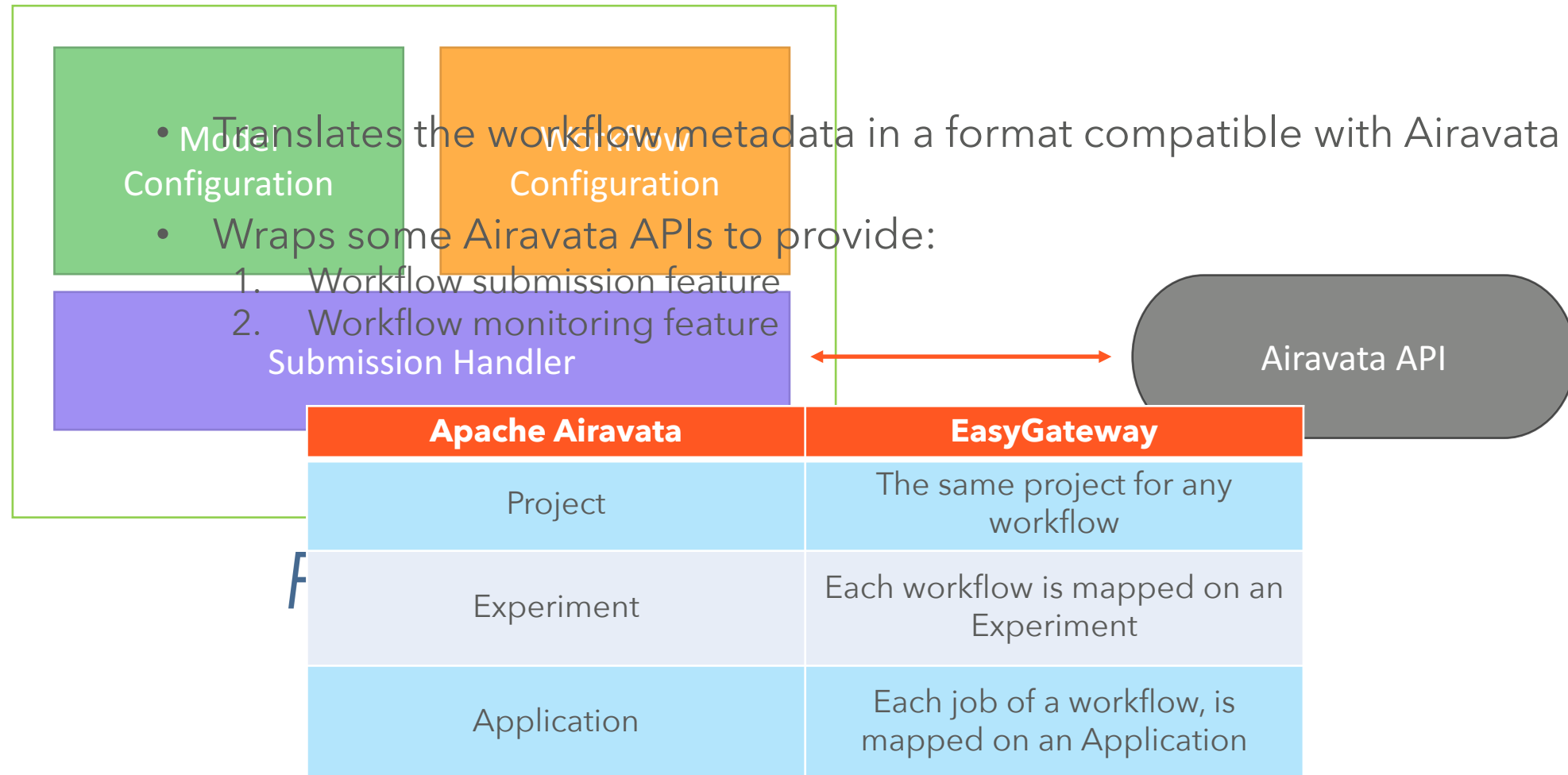
Using EasyGateway

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Submission to Airavata

Submission to Airavata

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Conclusion

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EasyGateway

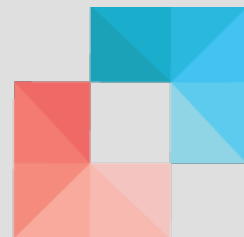
- Modular
- Extensible

Airavata dress

- Enhanced user interfaces
- Results and configurations sharing
- Accessibility rights management
- Configuration post-processing

Future

- Workflows submission to Airavata
- User accounting on resources



APACHE
AIRAVATA

Soon available on easygateway.it

Questions?