



*Veneto's Research Centre  
for eHealth Innovation*

# ***Health Information Exchange (HIE) in practical use in the Veneto Region***

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# Veneto Region

- 4,9 M inhabitants (2013 data)
- 18.391 km<sup>2</sup> of land surface



## 9 Local Health Authorities (ex 21 LHAs)

- Healthcare assistance (Hospitals)
- Territorial assistance and social issues (GPs, outpatients' clinics, elderly care, in-home assistance, mental health, disability, drug addiction, ecc...)
- Prevention department

## 2 Hospital Trusts

- University education and research
- High-specialty services

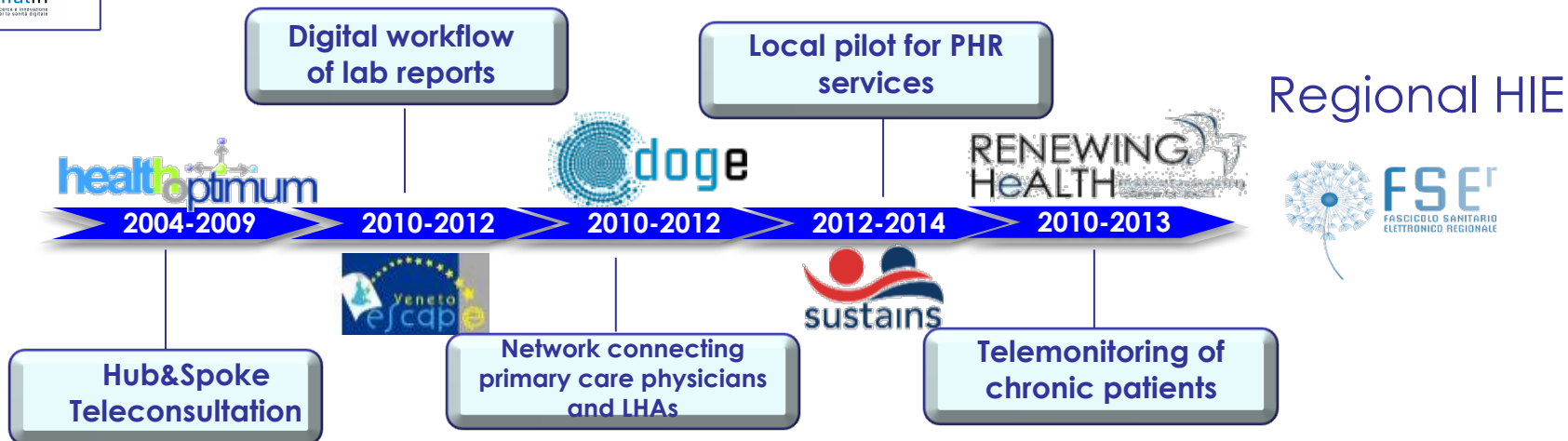
# The Consortium Arsenàl.IT: Veneto's Research Center for eHealth Innovation



Founded in 2005 as “Telemedicine Consortium”, currently groups all the 23 Local Health Authorities and hospital trusts (now 11) afferent to the Veneto Region.

Has succeeded in highlighting the critical issues of interoperability, standardization and organizational impact as key factors for driving Telemedicine applications to the mainstream of the care delivery process.

# eHealth projects in Veneto Region



**IHE** Integrating the Healthcare Enterprise

IHE Profile	Use
XDS	Sharing teleconselling docs, lab reports, ePrescription, eReferral, telehomemonitoring summaries
XDS-I	Sharing CT Images
XD-LAB	Lab report structure
EUA/XUA	User security
ATNA	Connection security, audit
XDW	Workflow management
XBeR-WD	eReferral workflow
XTHM-WD	Telehomemonitoring workflow



# The Regional HIE project in the Veneto Region

## Italian National Law about HIE:

- Privacy Authority, 16/07/2009: «Privacy guidelines for EHR»
- Ministry of Health, 11/11/2010: «National guidelines for EHR»
- Law 221/2012 and Law 98/2013: The National EHR became an Essential Level of Care (LEA) ;
- The regions, the ministry of health and the AgID have developed the guidelines for the presentation of project plans
- All regions have presented the project plans in June 2013
- The project plans were evaluated by Ministry of Health and AgID (National Agency for Innovation) and the evaluation process was concluded in April 2015



- **70.000** healthcare operators;
- **4000** GP/pediatricians, over **50** health districts,
- **1300** pharmacies etc..;
- **4,960,336** citizens;

# HIE Veneto Region – IHE Approach

Data Sharing

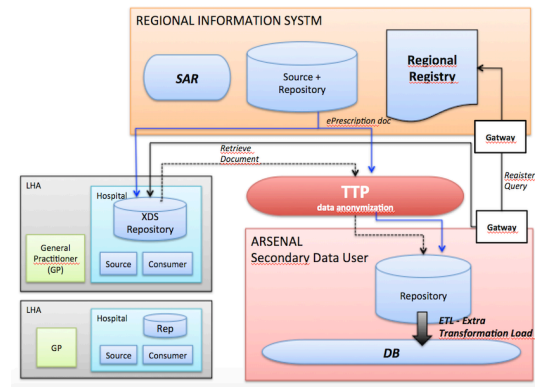
infrastructure

XDS, XUA, BPPC, ATNA,  
CT, DSUB

# HIE Veneto Region – IHE Approach

Data Sharing

infrastructure



XDS, XUA, BPPC, ATNA,  
CT, DSUB

# HIE Veneto Region – IHE Approach

Clinical Data Sharing

semantic

XDS-lab, PCC profiles

Data Sharing

infrastructure

XDS, XUA, BPPC, ATNA,  
CT, DSUB

# HIE Veneto Region – IHE Approach

Clinical Pathways

workflow

XDW, PCC WD profiles (XBeR-WD, XTB-WD, etc)

Clinical Data Sharing

semantic

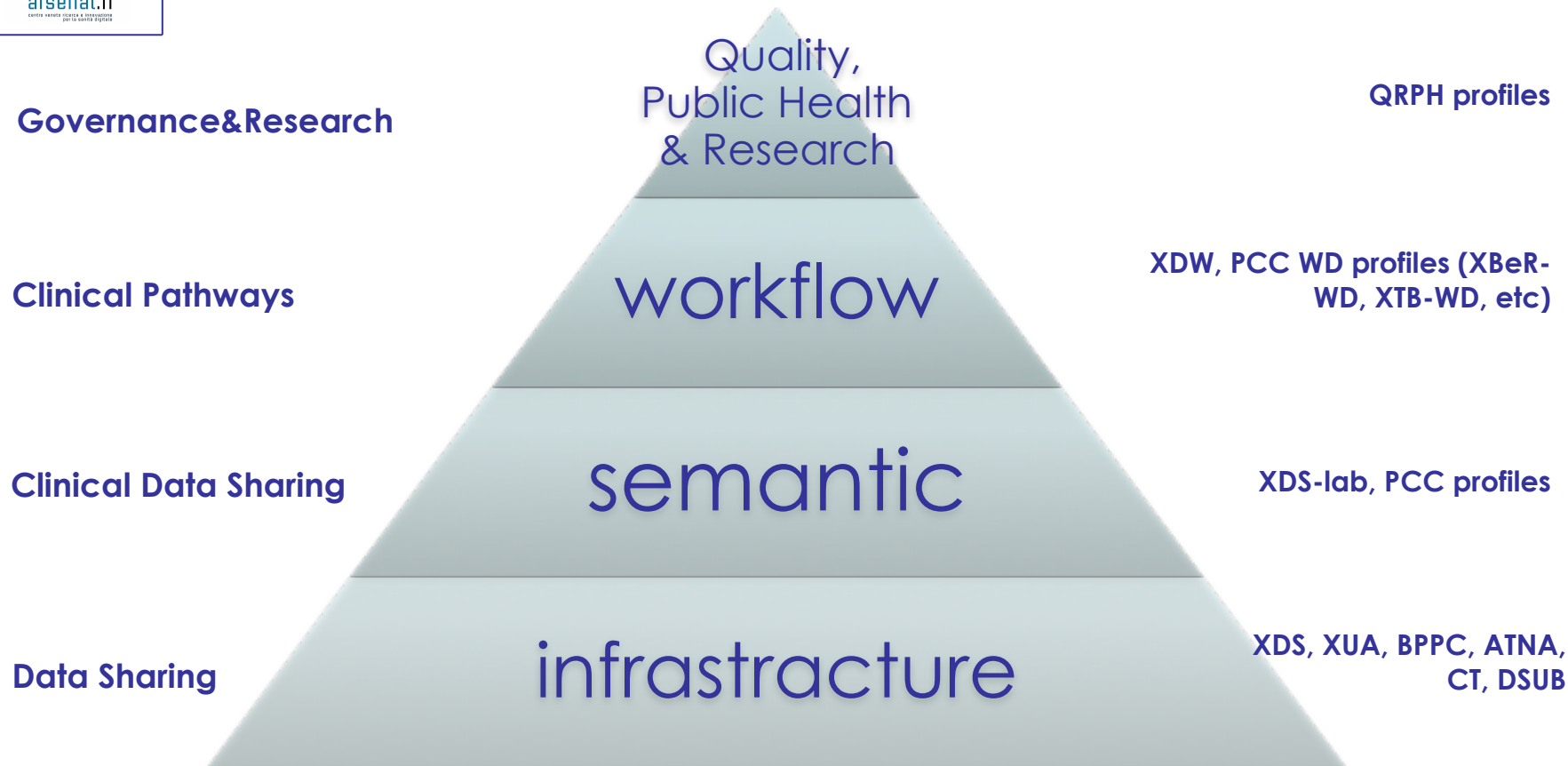
XDS-lab, PCC profiles

Data Sharing

infrastructure

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# HIE Veneto Region – IHE Approach



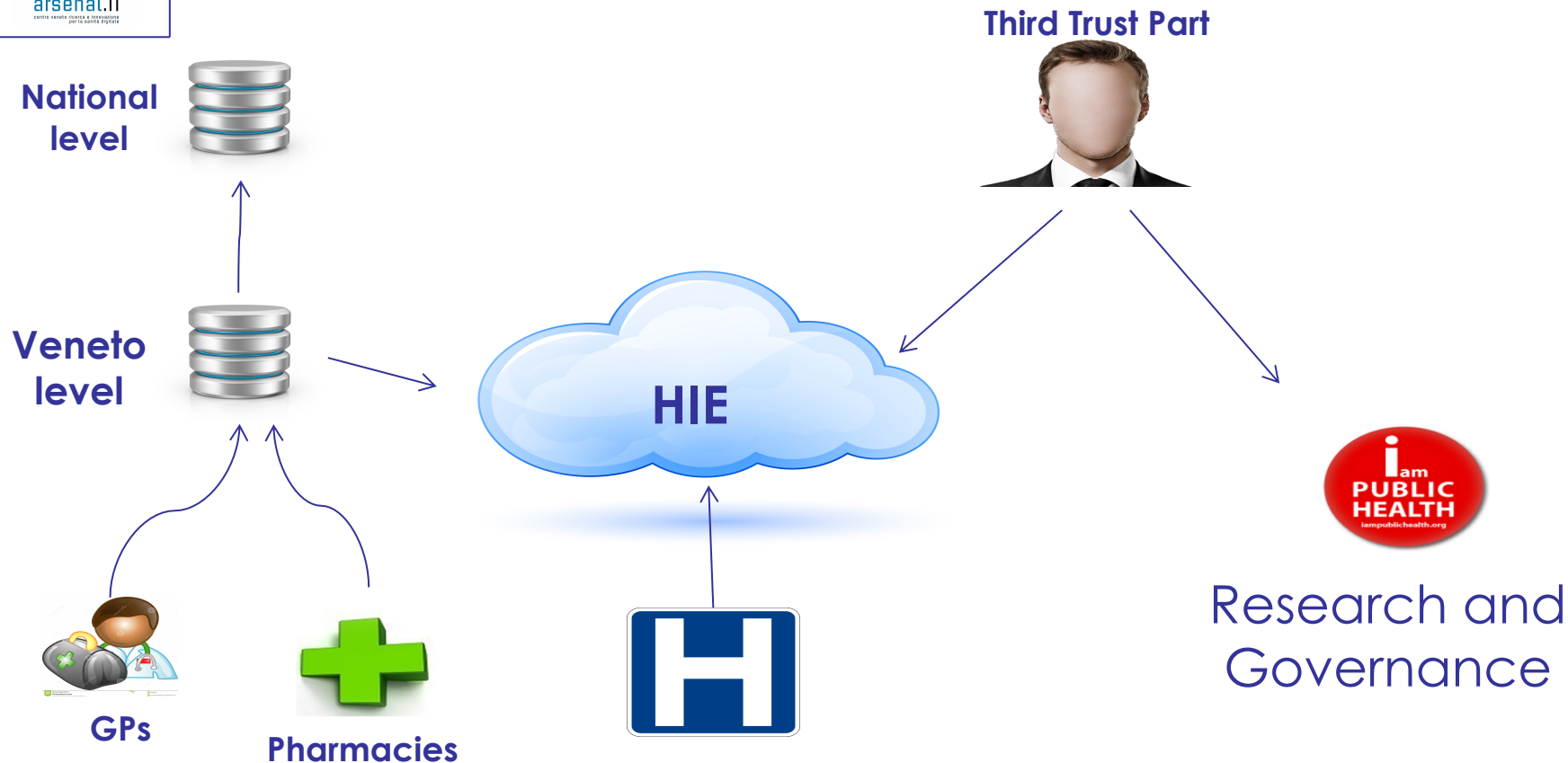
# HIE status of the art

- Complete the ePrescription and eDispensation (3.800 GPs, 4.300 Hospital physicians, 1.330 Pharmacies, 40M/year)
- Complete eReferral request (20 M/year)
- Started at 1° Dec 2015 the visit booking by GPs
- Start at 1° Nov 2016 CDA Lab Report sharing/Discharge Summary/ED reports/Radiology Reports

From 1° July first deployment of MHD

*Mobile app to support citizens in ePrescription (request new prescription to the GP) and eDispensation in Farmacies*

# The flow for Public Health & Research

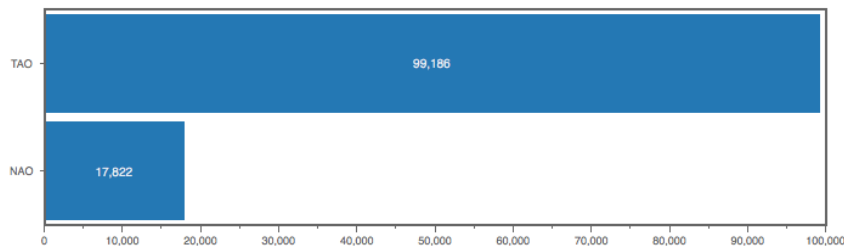




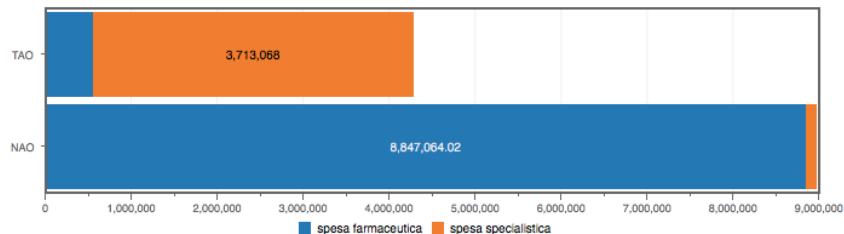
# QRPH examples

## OAT analysis: old drugs (walfarin) vs new drugs

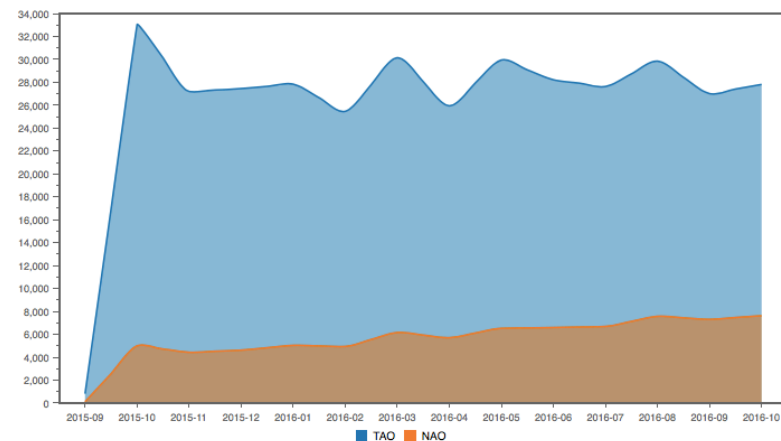
Numero pazienti a cui sono stati prescritti anticoagulanti orali nell'ultimo anno



Spesa totale a carico di SSN per anticoagulanti orali nell'ultimo anno



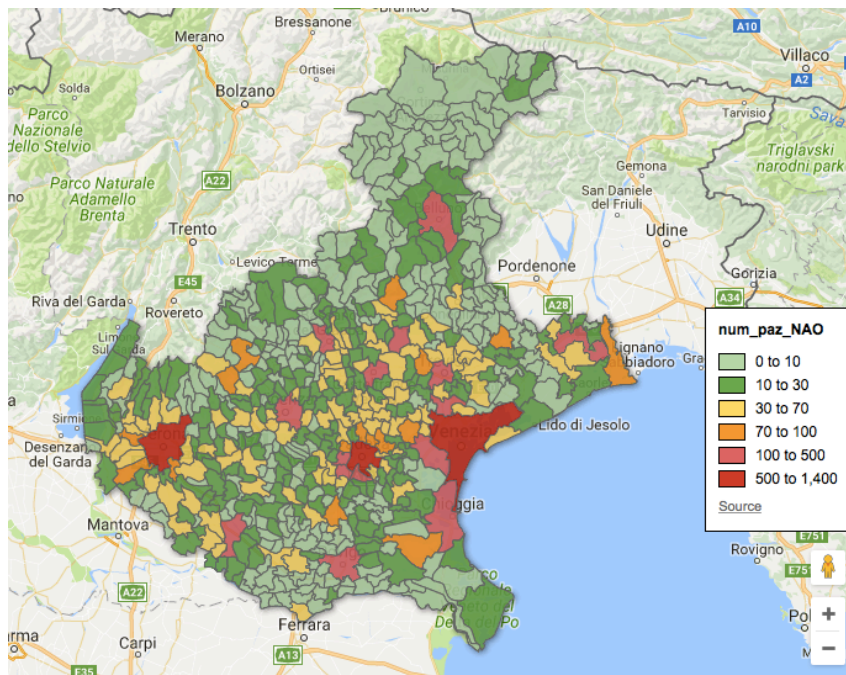
Andamento mensile del numero pazienti a cui sono stati prescritti anticoagulanti orali nell'ultimo anno



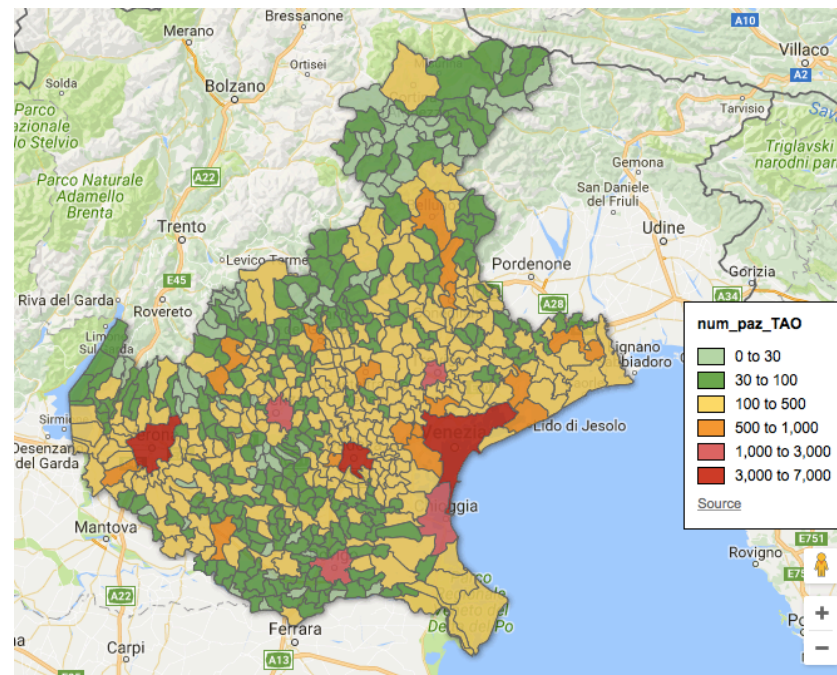
# QRPH examples

## Geo drug analysis

### Patients in new OA drugs



### Patients in old OAT



# Strategy for a regional HIE: Testing & tools approach

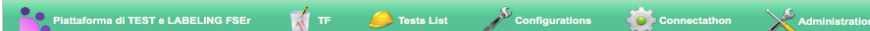
## Testing @ Consorzio Arsenal

### Access tools

Tool	Description
<a href="#">Gazelle Test Management</a>	The Gazelle Test Management Test Bed
<a href="#">EVSCient</a>	Access to Gazelle validation services
<a href="#">SchematronValidator</a>	Access to Gazelle Schematron Validator
<a href="#">Gazelle Proxy</a>	Access to Gazelle Proxy



### Piattaforma di TEST e LABELING FSEr - PreTest Labeling Dematerializzazione 2013/2014



### Piattaforma di TEST e LABELING FSEr

Welcome, csaccavini

#### Gazelle Technical Framework and Tests

The Gazelle Master Model application is used to manage data describing the components that comprise IHE Integration Profiles and the Gazelle test management system. The normal user functions such as

- Add a new domain
- Add a new profile to an existing domain
- Define new test cases

The managers responsible for Gazelle for IHE International are Eric Poiseau (INRIA) and Lynn Felhofer (IHE USA). If you are connected to a regional or private copy of this application, please

#### Sessione di TEST - Progetto di Dematerializzazione FSEr Edit

#### Benvenuti sulla Piattaforma di Test di Arsenal.IT !

Sono presenti due sessioni di lavoro:

-Sessione di TEST (Dematerializzazione Test)

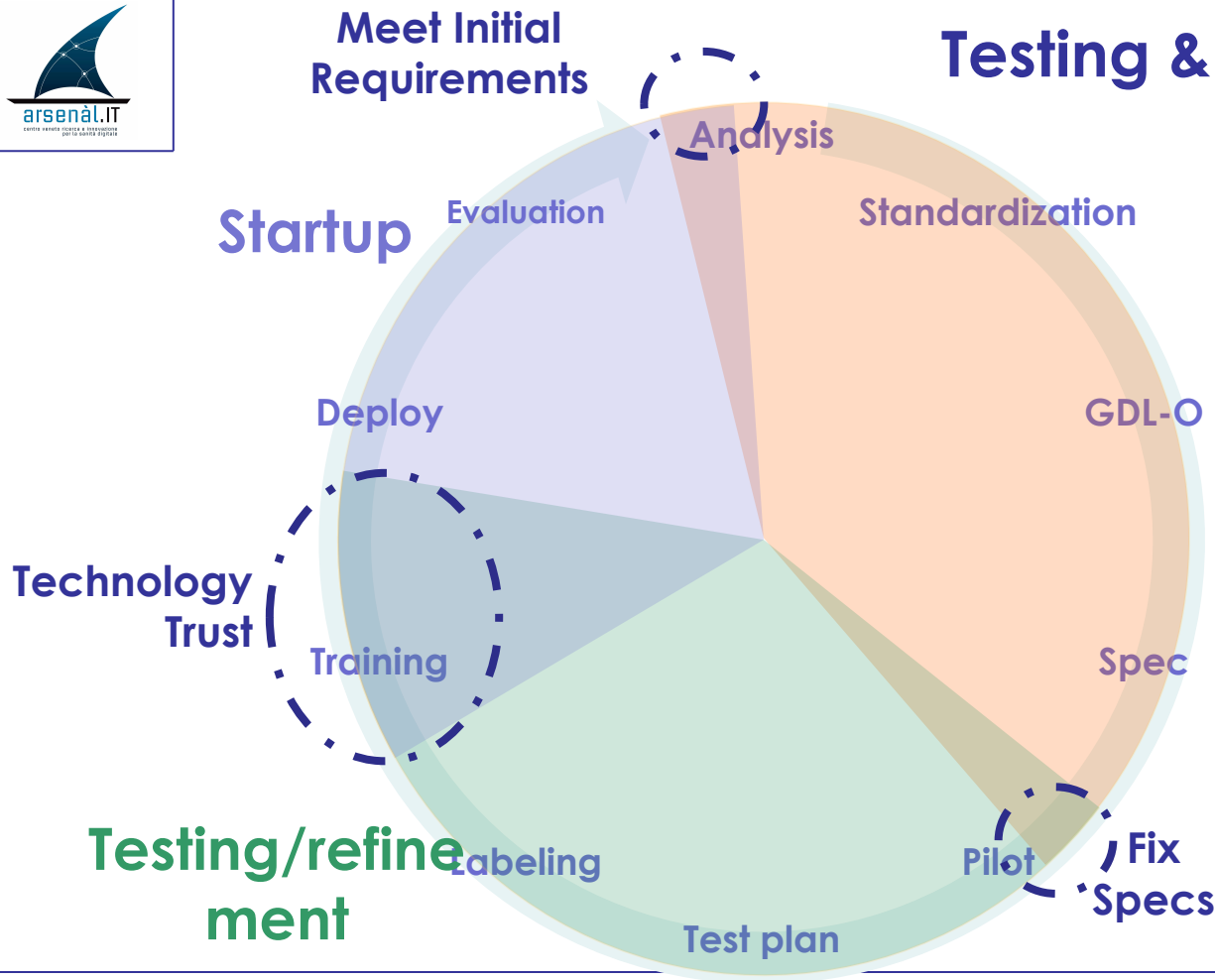
-Sessione di LABELING

Attualmente vi trovate nella sessione per i test dedicati al progetto di dematerializzazione della ricetta rossa per il Fascicolo Sanitario Elettronico regionale.

#### Elenco endpoint di Test

MEF-1: Creazione ricetta	<a href="http://sar-test.regione.veneto.it/demInvioPrescritto">http://sar-test.regione.veneto.it/demInvioPrescritto</a>
MEF-1 con asserzione	<a href="https://sar-test.regione.veneto.it/asserzioni/demInvioPrescritto">https://sar-test.regione.veneto.it/asserzioni/demInvioPrescritto</a>
MEF-2: Presa in Carico	<a href="http://sar-test.regione.veneto.it/demVisualizzaErogato">http://sar-test.regione.veneto.it/demVisualizzaErogato</a>
MEF-2: Rilascio	<a href="http://sar-test.regione.veneto.it/demVisualizzaErogato">http://sar-test.regione.veneto.it/demVisualizzaErogato</a>
MEF-2 con asserzione	<a href="https://sar-test.regione.veneto.it/asserzioni/demVisualizzaErogato">https://sar-test.regione.veneto.it/asserzioni/demVisualizzaErogato</a>
MEF-3: Erogato Totale	<a href="http://sar-test.regione.veneto.it/demInvioErogato">http://sar-test.regione.veneto.it/demInvioErogato</a>
MEF-3: Erogato Parziale	<a href="http://sar-test.regione.veneto.it/demInvioErogato">http://sar-test.regione.veneto.it/demInvioErogato</a>
MEF-3: Chiusura Errore	<a href="http://sar-test.regione.veneto.it/demInvioErogato">http://sar-test.regione.veneto.it/demInvioErogato</a>

# Testing & tools approach: Model



# Testing & Tools approach: Results

systems	tested	retired	total
GPs : ePrescription	13	1	14
GPs: BPPC Content Creator	10	0	10
GPs: Doc Retrieve	5	0	5
Pharmacies	9	1	10
CUP: Presa in carico, erogazione	9	0	9
CUP: booking	11	0	11
EHR	12	0	12
Doc Repository	22	0	22
Laboratory Report Content Creator	6	1	7
Notification	5	0	5
<b>total</b>			

**4 FTE for T&Tx**

# The challenge



**complete integration with EU Regions:  
eHealth CEF**

**complete integration with US → Trillium  
Bridge, Trillium-II**





# Thank you for your attention!

[www.consorzioarsenal.it](http://www.consorzioarsenal.it)

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@Consorz\_Arsenal



MRCLIC Veneto ESCAPE



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