THE ITALIAN RESEARCH & EDUCATION NETWORK | Consortium GARR

Innovating Colosseo

La nave Argo

Sabrina Tomassini
sabrina.tomassini@garr.it

Edoardo Angelucci, Alex Barchiesi, Andrea De Tommasi, Bruno Nati, Mirella Serlorenzi, Sabrina Tomassini, Cristiano Valli, Giancarlo Viola, Carlo Volpe

Prague, 14 June 2016

TNC16

Outline

- Collaboration with the Special Superintendency of Rome Archaeological Area
- Innovating Colosseo - La nave Argo
- The backstage – *technical issues*
- See what we staged ...
- Feedback from our partners
- Our future steps

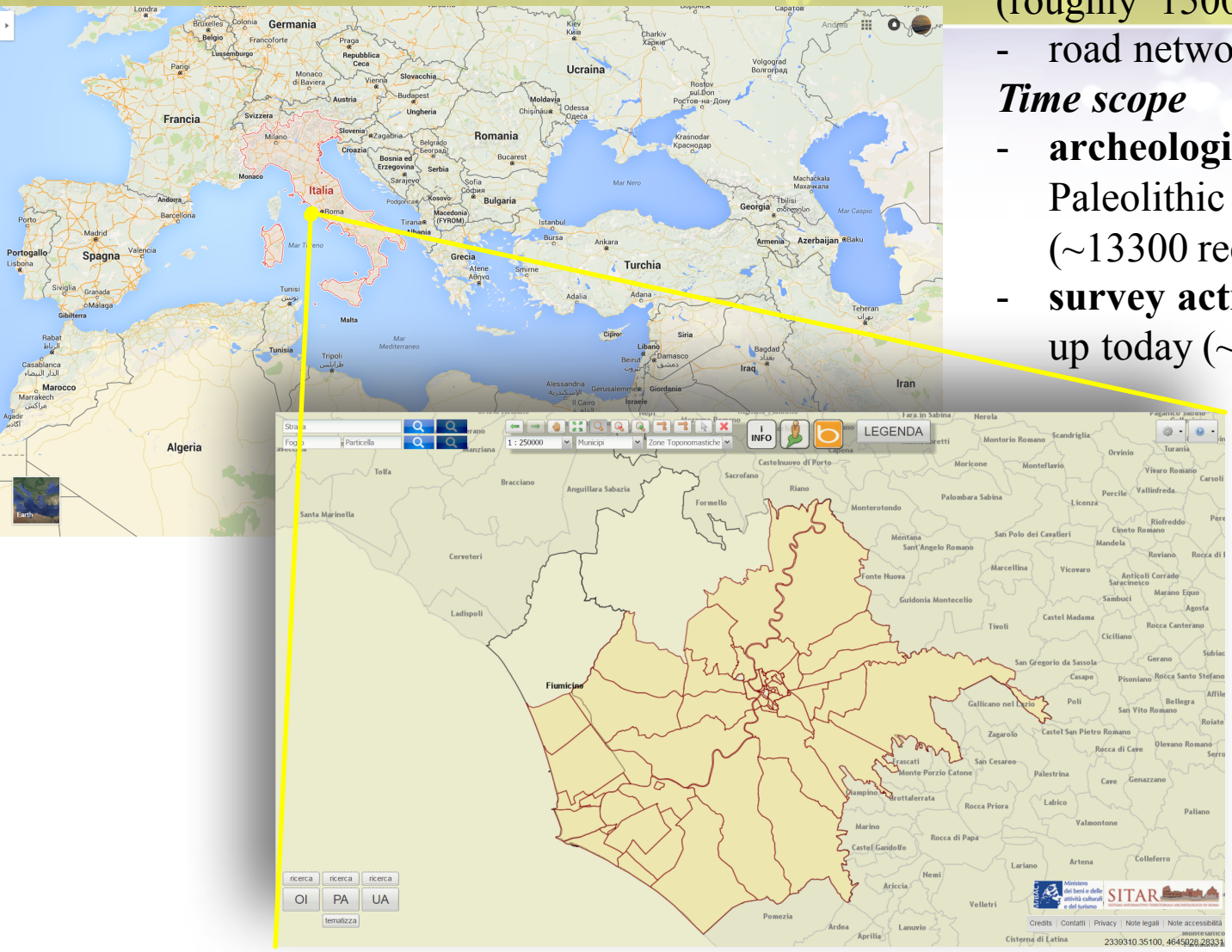
ArcheoSITAR project

Spatial coverage:

- city of Rome & Fiumicino (roughly 1500 km^2)
- road network (5500 km)

Time scope

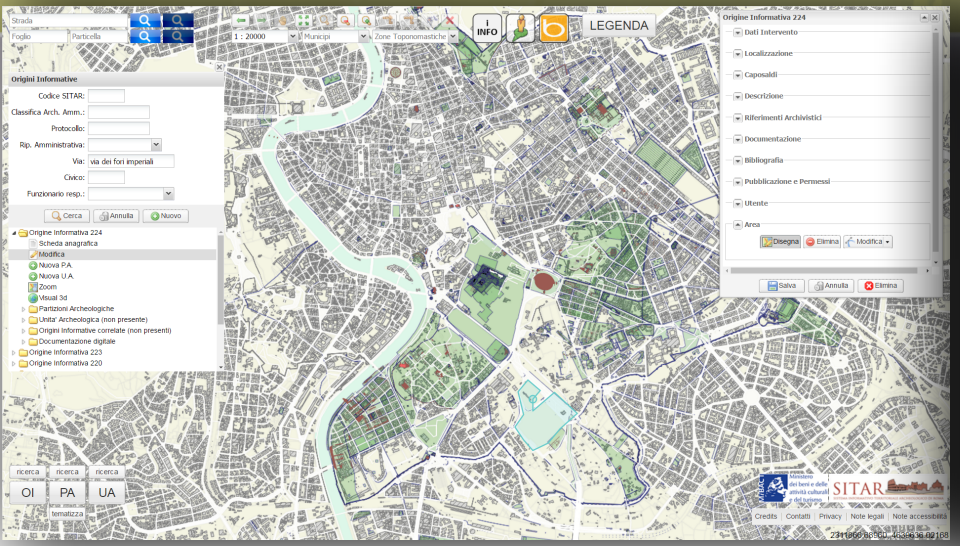
- **archeological data** from Paleolithic to the modern age (~13300 records)
- **survey activitity** logs from 1860 up today (~4300 records)



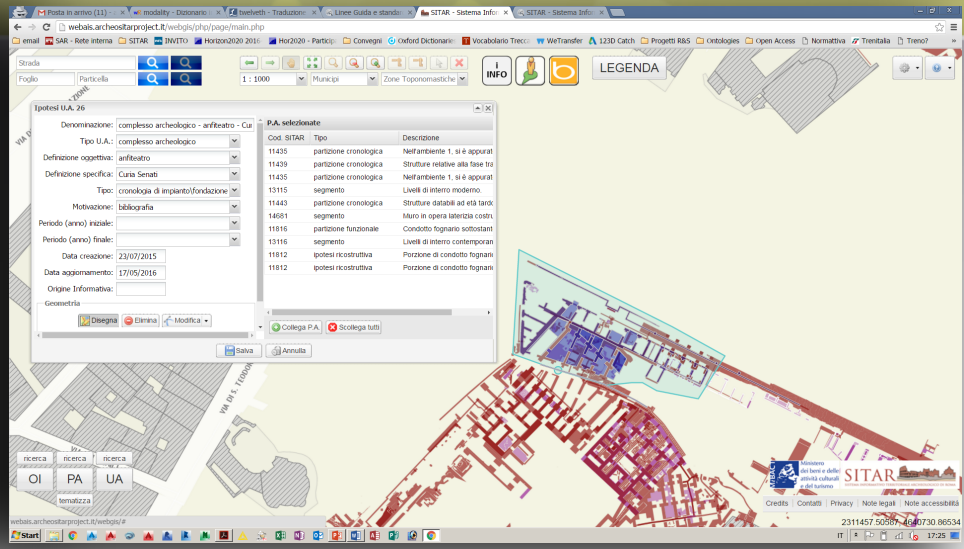
GARR collaboration with the Special Superintendency of Rome Archaeological Area

- SITAR is a WebAIS (Archaeological Information System)
- It is used for territorial planning, for the study and reconstruction of the ancient city of Rome

ArcheoSITAR project: the Archaeological web

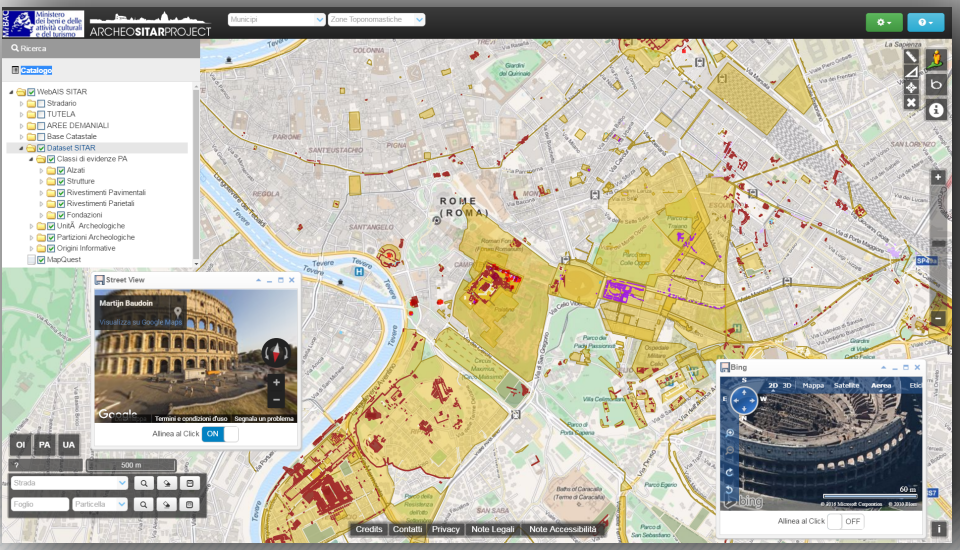


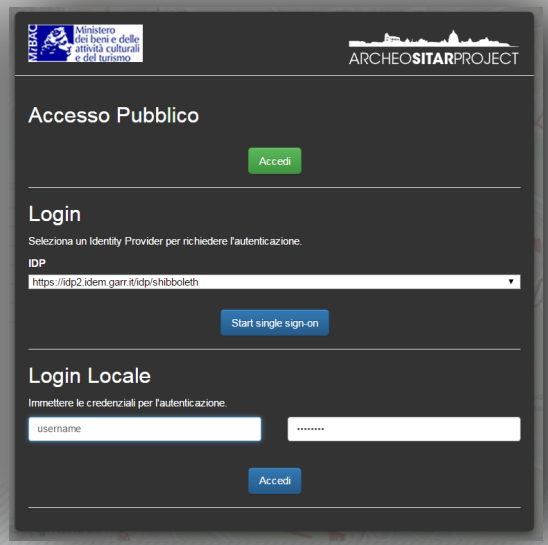
the current webGIS



the Archaeological Unit hypotesis 2.0 procedure

the new webAIS





3 access modalities:

<- public access (no credentials)

<- login via IDEM

<- local login

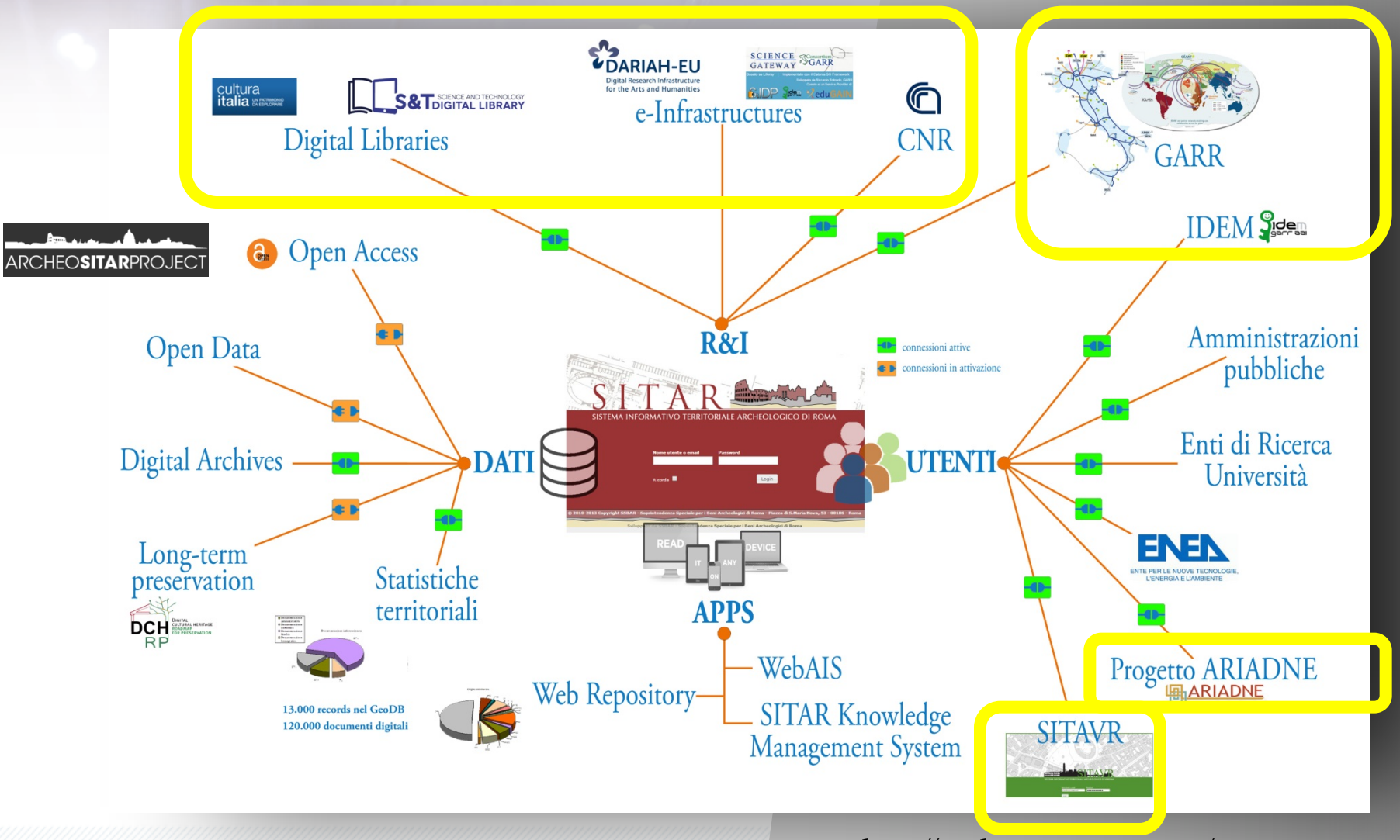
Consortium GARR

http://www.archeositarproject.it/

GARR collaboration with the Special Superintendency of Rome Archaeological Area

- It is also used to standardize an enormous amount of information and make it publicly accessible
- SITAR deployment is a clear example of technological research applied to archaeology and to knowledge sharing

A larger community

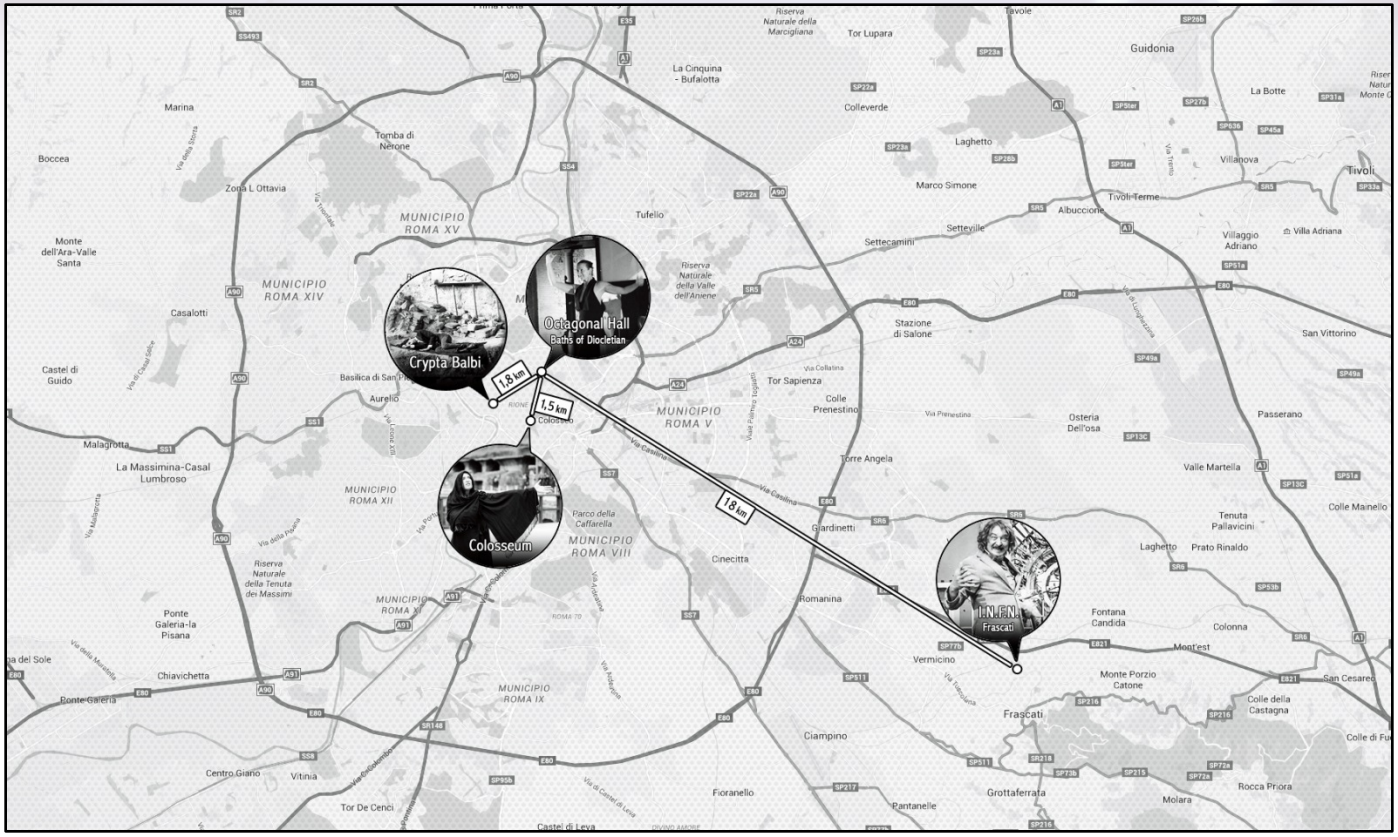


http://archeositarproject.it/

The digital infrastructure

- Direct **fibre-optic connections** of SITAR WebAIS to GARR backbone PoPs, with high capacity links towards national and international networks
- **Virtual servers** residing on physical machines owned and operated by GARR, which will host SITAR web applications
- **Repositories** for SITAR **GeoDB** and the admnistrative and scientific digital documents of the Superintendency
- GARR services: **backup** and **data restore** with a specifically developed software

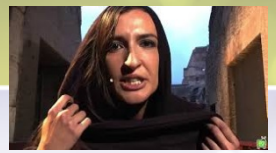
The geographic setup of *Innovating Colosseo*



The event "Innovating Colosseo, Culture and research on ultrabroadband network" was the occasion to celebrate the opening of the new GARR high-bandwidth connection with the Colosseum, Roman Forum, Palatine Hill and the different branches of the Roman National Museum (Crypta Balbi, Palazzo Altemps, Palazzo Massimo and the Baths of Diocletian).

Some of these locations were selected to become part of the distributed stage of this musical and theatrical performance

Innovating Colosseo - La nave Argo
a distr-Active work



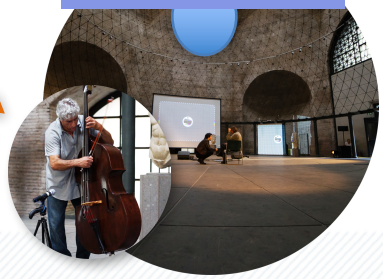
INFN Frascati National Laboratories

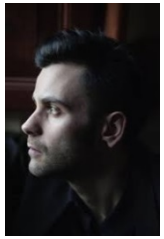
COLOSSEO

CRYPTA BALBI

STREAMING

LOLA





OCTAGONAL HALL – DIOCLETIAN'S BATHS

Consortium GARR

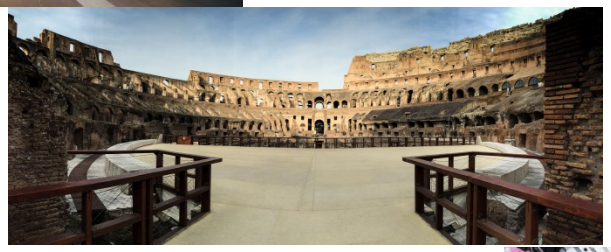
Innovating Colosseo - La nave Argo

https://www.youtube.com/watch?v=0787vluSbj8

The backstage – *technical issues*

Baths of Diocletian - Octagonal Hall subnet	Colosseo subnet	INFN Frascati National Laboratories subnet	Crypta Balbi subnet
192.167.10.0/26	192.167.10.64/26	192.167.10.128/26	192.167.10.192/26

- Direct fibre-optic link from sites to GARR access ports (2 PoPs, RM2 and Frascati)
- L3 transport for LOLA and audio-video signals, no routing equipments at the end-points
- Uplink capacity 10Gbps to LNF Frascati, 1 Gbps to other sites
- Streaming server in GARR premise (colocation with PoP RM2)

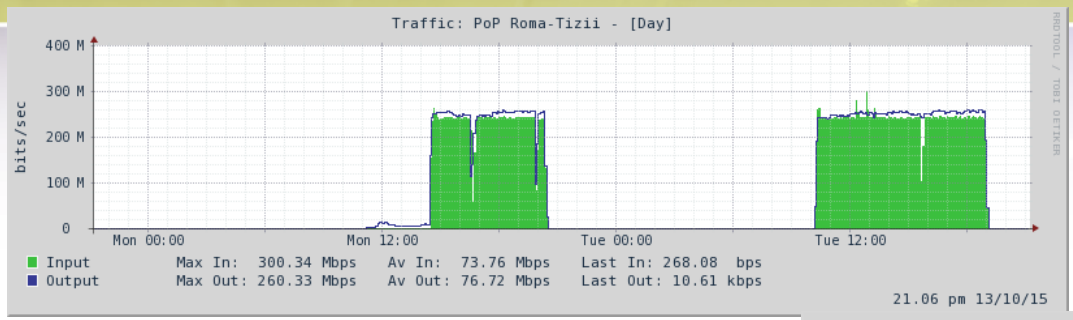


- No firewall and no application filters at the end points
- Low latency on the networks
- Transparent and highly adaptable network

Innovating Colosseo – Issues and solutions

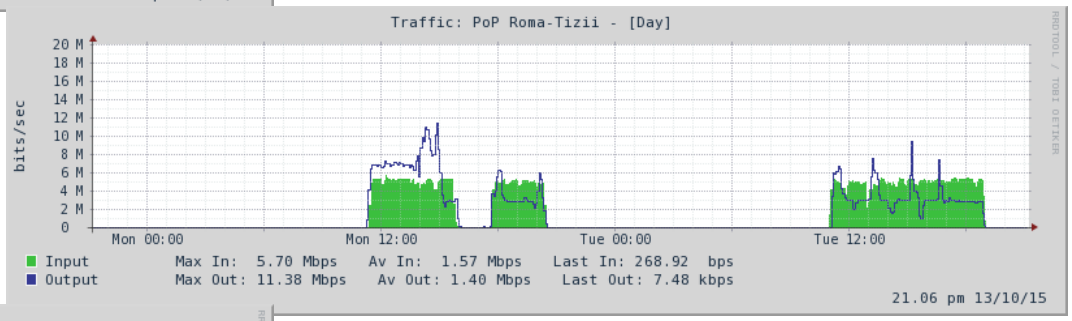
Issue	Solution
Latency	Network and hardware setup: make it as simple as possible with 2 routing node, no firewall, no application filters (server hardening)
Integration between LOLA with video streaming	Capture audio signal from LOLA and video signal from traditional video shooting
Audio fine-tuning: difficult locations for eco and audio feedback loops	Test handmade solutions: switch off the microphone in order to limit the effect of audio feedback and limit the number of overlapping voices
Logistic: opening time and touristic flow in the Colosseum, high energy physics experiment working time	Find a common language among the different players
Test and fix in time!	Teamwork !

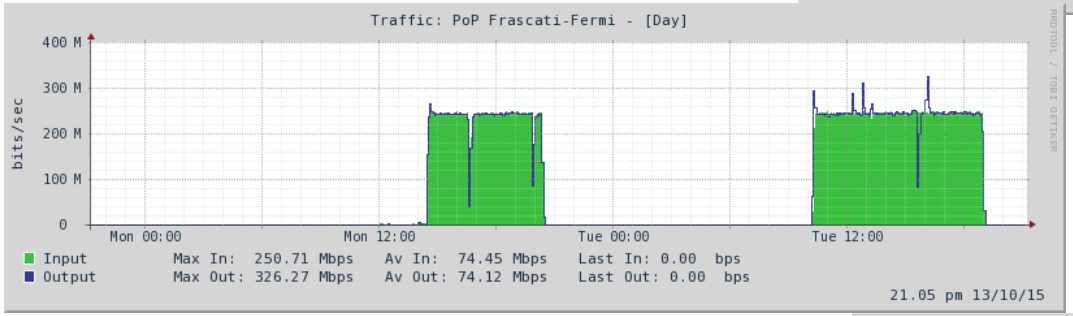
The backstage – *technical issues*



Octagonal Hall – Baths of Diocletian

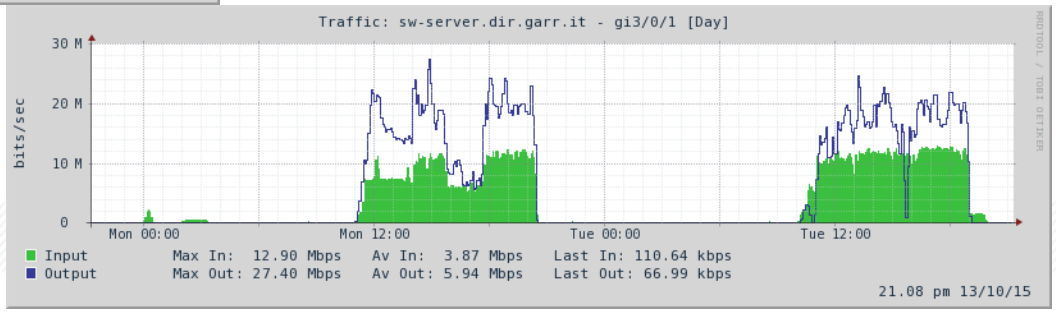
Colosseum





Frascati National Laboratories (INFN)

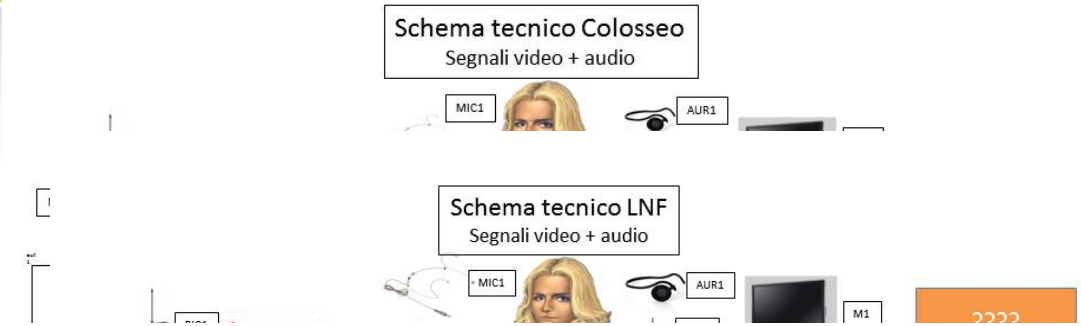
Streaming server (GARR)

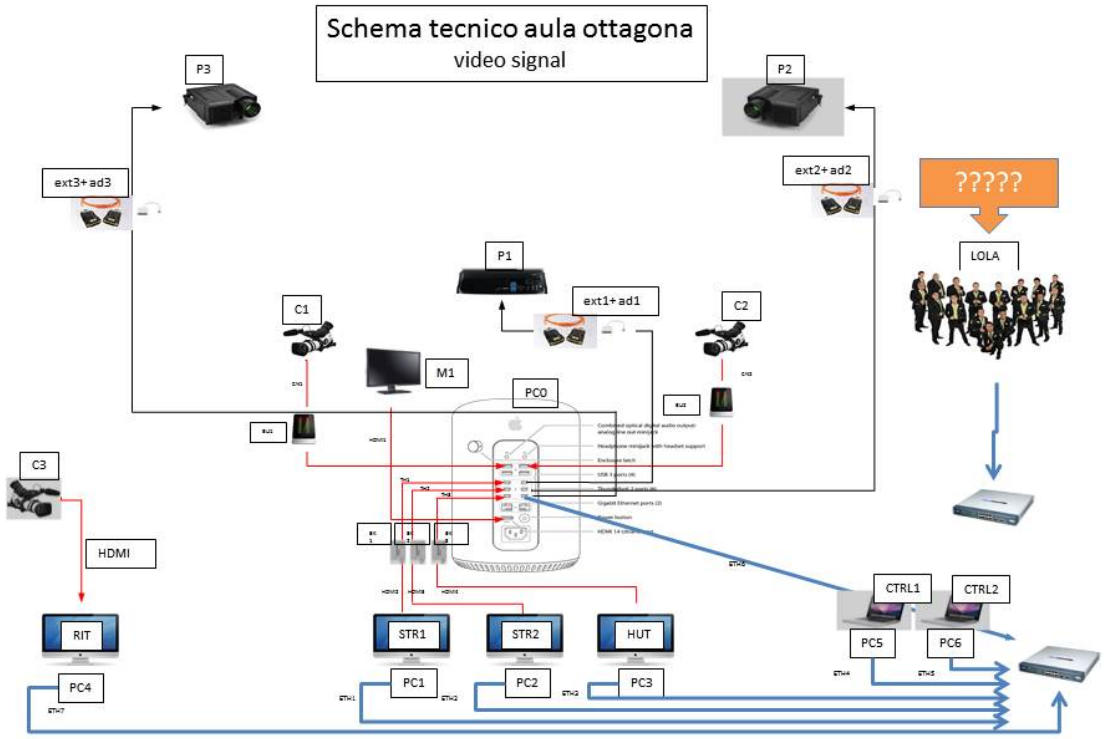


Technical aspects

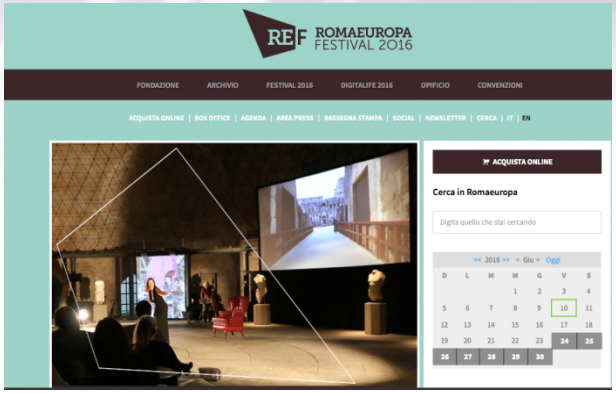
Just a few numbers:

- *3 projectors*
- *5 cameras*
- *3 projection screens*
- *10 PCs*
- *Microphones, mixer, speakers,*
- *6 (actors and musician*
- *13 technical staff*





La nave Argo – Feedback from our partners



Director CORSETTI:

- After this successful experience, Corsetti is working with GARR at a second performance scheduled for the Romaeuropa Festival (November, Rome) http://romaeuropa.net/festival-2016/il-ratto-di-europa

- In the future we hope to export this experience beyond Italian national borders and to collaborate with other NRENs and other cultural institutes (museums, theatres, academies,…)

Superintendency of Rome:

- Foster the collaboration within the international NREN community
- Promote and disseminate scientific data coming from the archeological heritage

Our goals for the future

- To collaborate with other NRENs in promoting this kind of experience and illustrating the potentiality of NRENs network technology and expertise
- To be able to replicate this experience, to enlarge the audience and the interest of people, who want to experiment new forms of art
- Make this combination of technologies more user friendly
- To develop a pure optical transport system for audio/video signals (no IP!)

With the collaboration of:

Istituto Nazionale di Fisica Nucleare – Laboratori Nazionali di Frascati

Special Superintendency of Rome Archaeological Area

Il Gruppo GARR-Netcast - Marco D'Ambrosio (Università degli Studi di Cassino e del Lazio Meridionale), Sandro Tumini (Università Politecnica delle Marche)

La Nave Argo Giorgio Barberio Corsetti, Igor Renzetti (Immagini e video)

….. and our staff

Thank you for your attention!

REFERENCES

Innovating Colosseo

(video, interviews, press review, documents)

http://www.garr.it/innovating-colosseo

LOLA Project

http://www.conservatorio.trieste.it/art/lola-project/

SITAR Project

http://www.archeositarproject.it/