Update on ANIX

Maurizio Goretti

Namex CEO

ANIX Meeting 2022

NAMEX
ROMA INTERNET EXCHANGE POINT

Namex staff here

The Rome Internet Exchange Point
A short history

It all started in 1995 in a (neutral) data center of a University Consortium in Rome – 4 ISP

Different names same people

On a voluntary basis until 2001

NaMeX (Nautilus Mediterranean Exchange Point) was created in 2001 as a non-profit ISP consortium

The new logo made in 2017 to showcase the city in which we operate

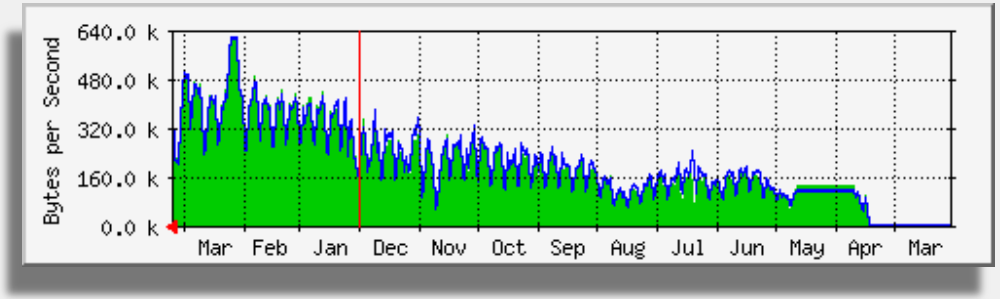
Namex at a glance

- Namex is a **member based** consortium **owned by members**
- Any member has **same share**
- 160 members – 210 ASes connected
- **Not for profit**
- **Neutral**

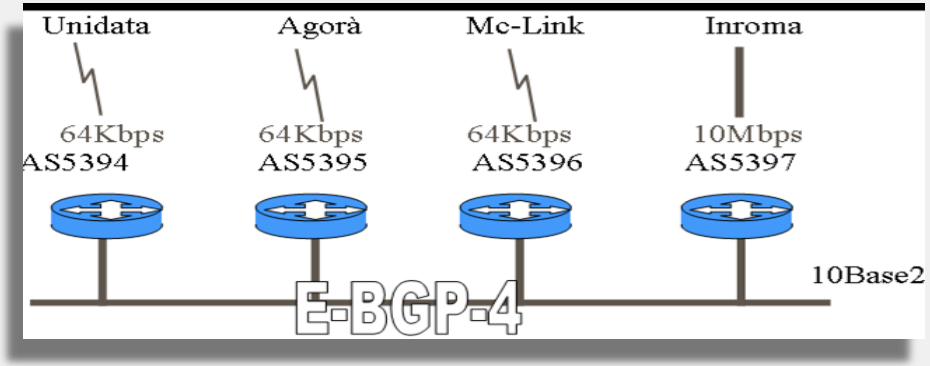
NAMEX ROMA IXP

Namex at a glance

- March 1995 – 4 ISPs asked, together, one AS to RIPE
- They received 4 contiguous ASs
  5394 * 5395 * 5396 * 5397
- 64 Kbps leased lines



- No switch, just RG58 black coaxial cable! (10 Base2)
  Every time new member entered the IXP … IXPs stops!



2022 - 210 Networks Connected

CONTENT PROVIDERS

NETFLIX
amazon
Akamai
Google
Microsoft
CLOUDFLARE
Meta
aruba.it
fastly

INTERNATIONAL CARRIERS

cogent
HURRICANE ELECTRIC INTERNET SERVICES
colt
EXA
Arelion
中国电信 CHINA TELECOM
vodafone

ITALIAN ISPS

linkem | TISCALI
eolo
TIM
WINDTRE
RETELIT
ITGATE The best way to carry IP
Convergenze
Fiber Telecom THE NETWORK PARTNER
Fontel
CDLAN
FASTWEB
UNIDATA
IRIDEOS
iliad

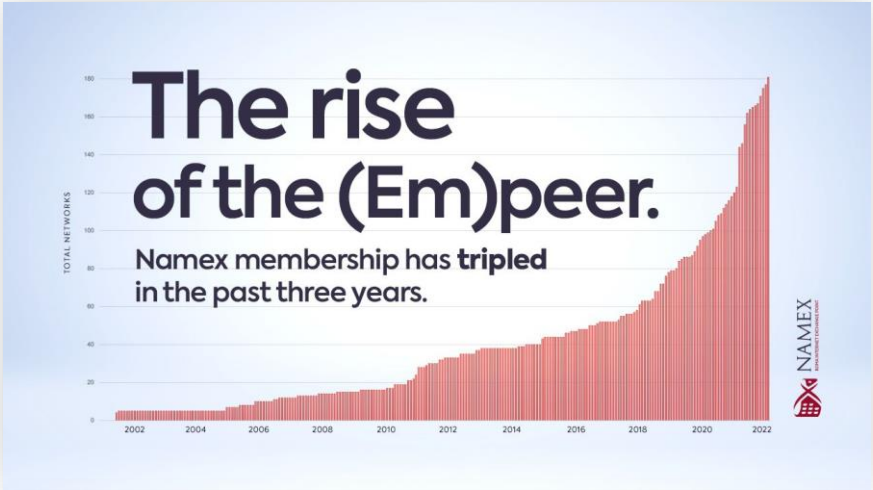
INSTITUTIONS, AGENCIES, RESEARCH

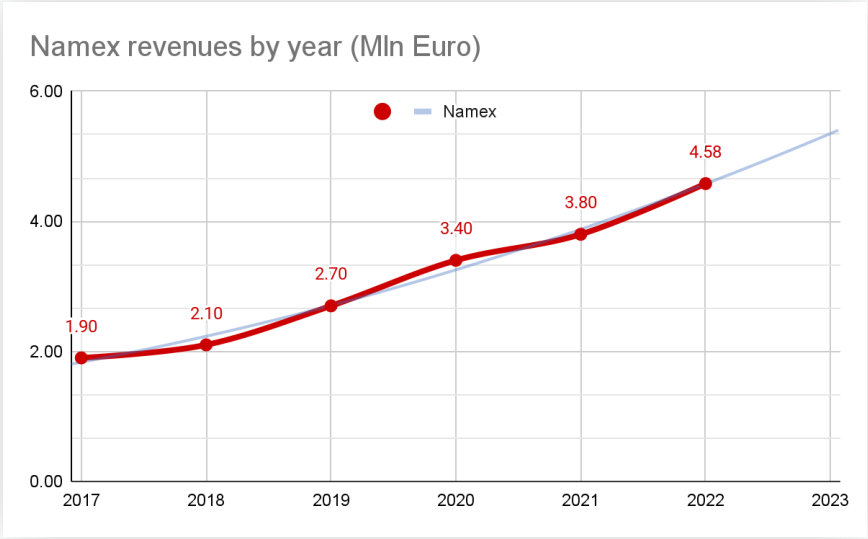
FUB Fondazione Ugo Bordoni Ricerca e Innovazione

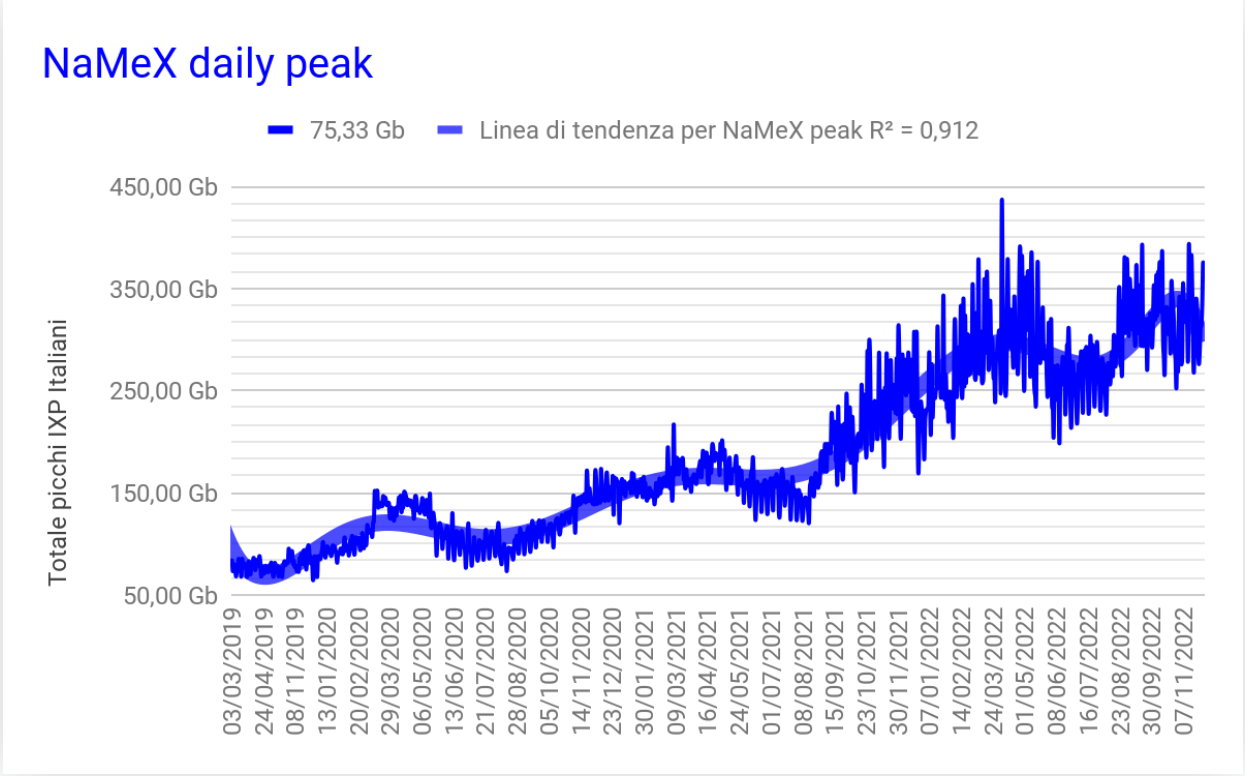
Internet Office of the Holy See

enel
Consortium GARR
Terna

The Roman Em(peer)







Interconnection in Rome is growing

- Rome is increasingly important for the interconnection of Content Providers and Access Providers
- The content needs to be close to the final users
- Italy is long and narrow (more than 10 ms) and Content Providers need to be in Rome to cover Central and Southern Italy

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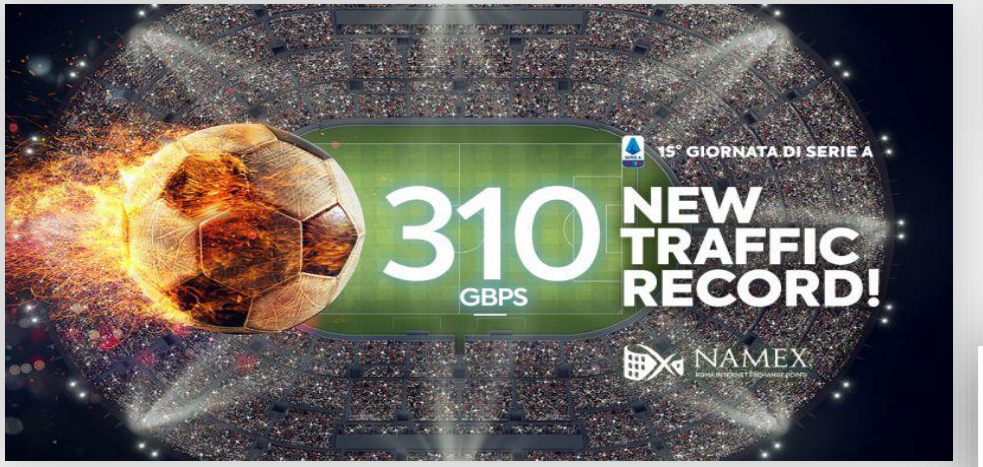
ROMA IXP

Killer application for peering

Serie A boosted traffic

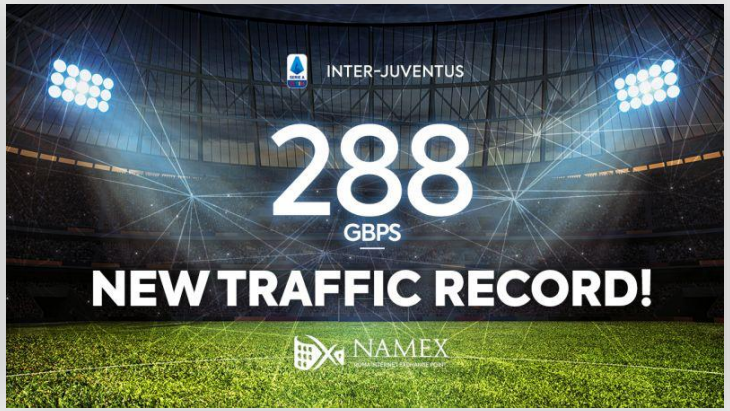


DAZN

amazon prime video

SERIE A

UEFA CHAMPIONS LEAGUE



NAMEX ROMA IXP

Services catalogue

NEUTRAL COLOCATION

- Space & power
- Meet me
- Remote hands

PEERING

REMOTE PEERING

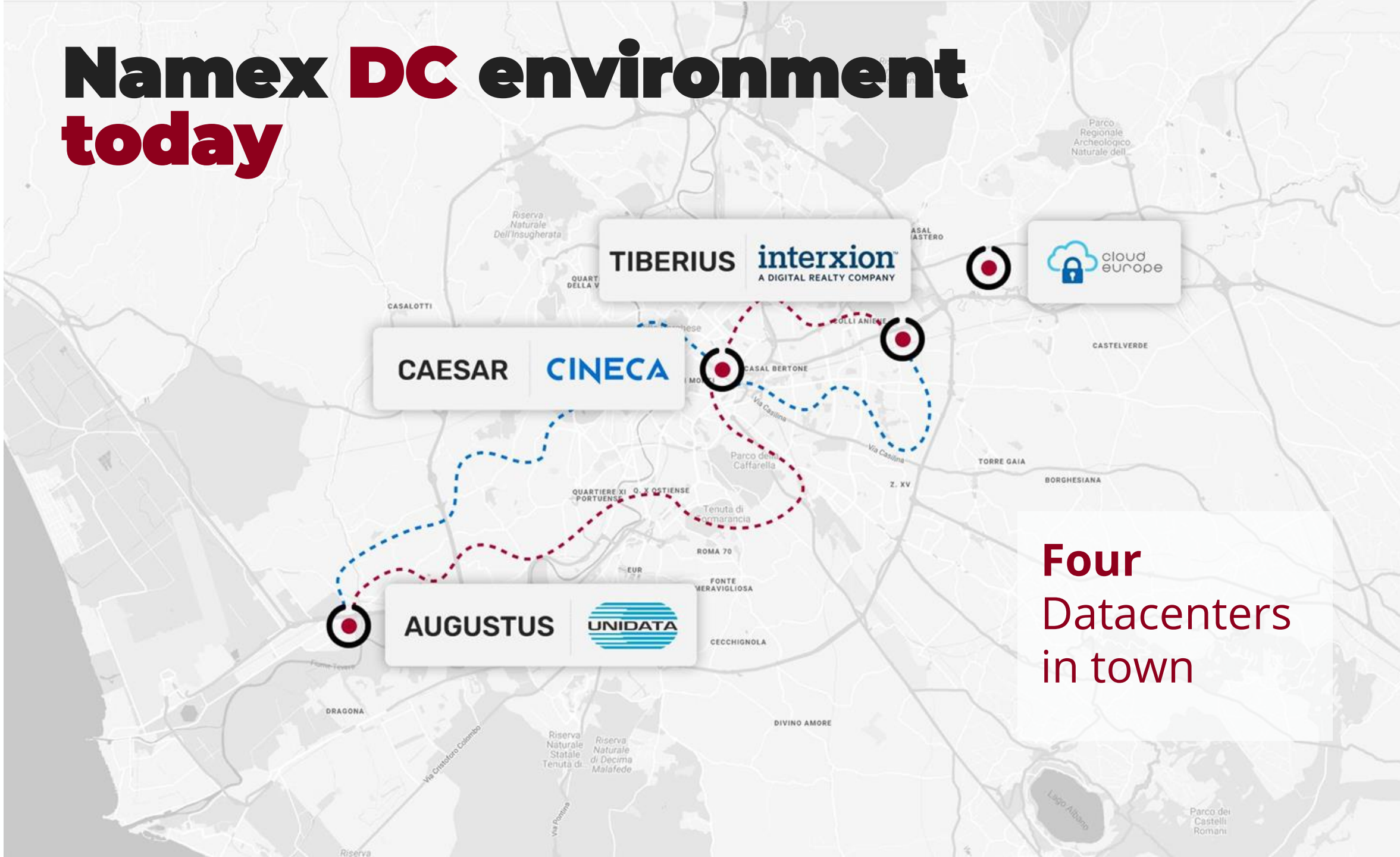
- Remote IXP

- Remote Aggregation

160
Racks in colocation

1000+
Private Network Interconnections (PNI)

Namex DC environment today



Four
Datacenters
in town

Namex DC environment tomorrow

Three more Datacenters in Rome

Aruba Hypercloud

Tecnopolo

30.000 sqm – 30 MWatt

March 2023

Interxion ROM1

Trigoria - Campus Biomedico

16.000 sqm – 32 MWatt

October 2024

Unicenter

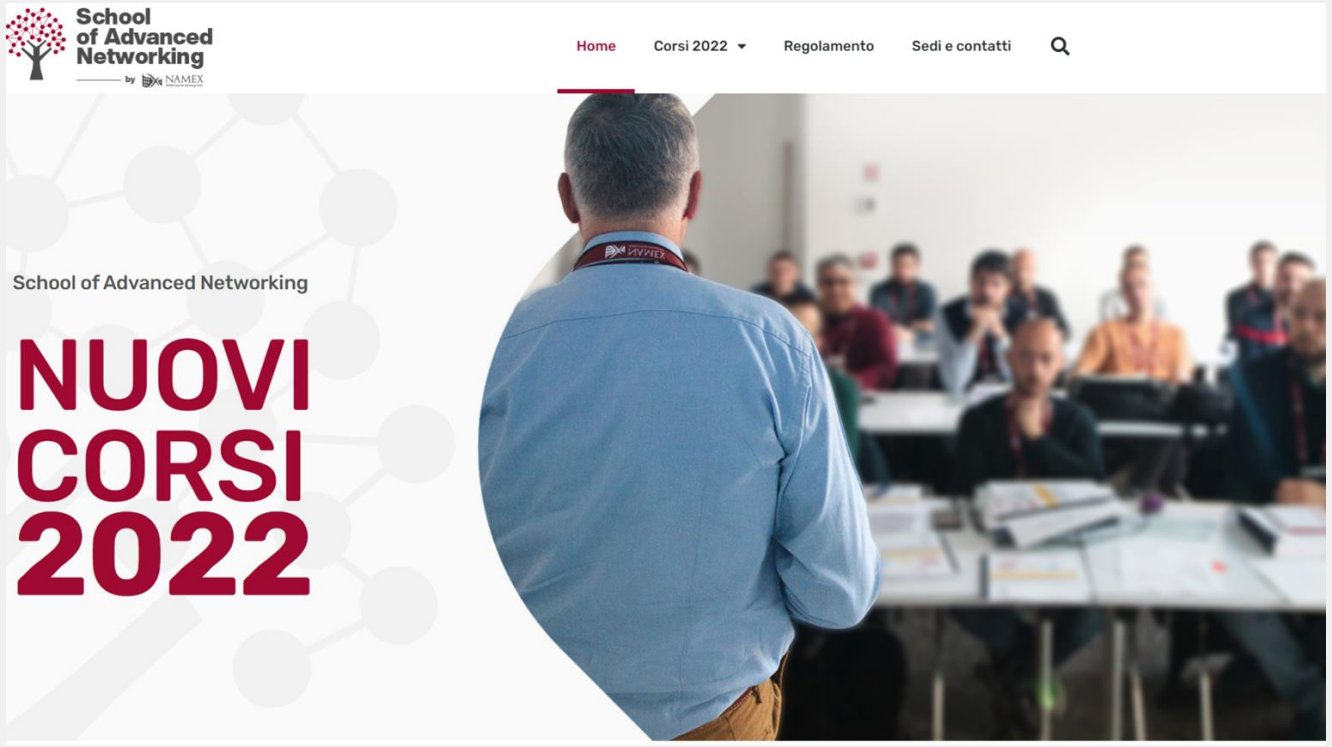
Nuova Fiera di Roma

36.800 sqm – 37 MWatt

2024

School of Advanced Networking

TRAINING FOR ISPS MADE BY ISPS



In 2022:

- **More than 180 people** trained
- **8 FREE Trainings**
  3 days (15/30 attendees)
- **87 ISPs** attending
- More than **50 certificates** (Open Badge) issued after the end-of-training exam

Community builder

Rome June 2023

NAM Annual event

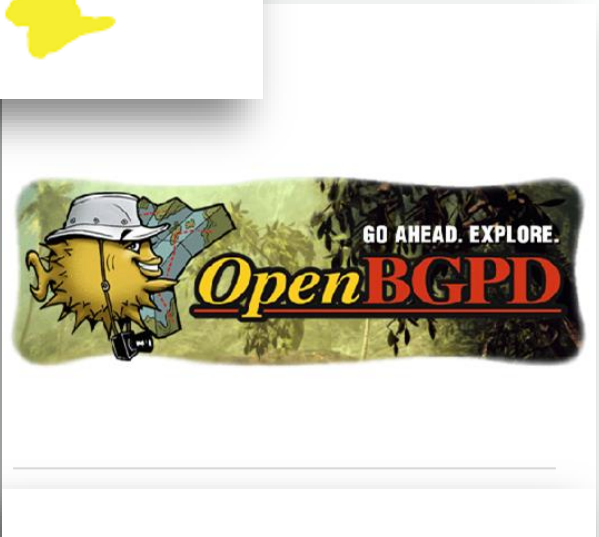
- One of the largest Italian ISP events
- Unmissable since 2004
- More than 300 attendees
- Renowned speakers
- One-to-One meetings

ONE TO ONE Time

Namex supports

Namex is glad to support several projects for the good of Internet's community

- **ANIX**
  The Albanian Neutral Internet Exchange
- **OpenBGPD**
  Emergent Route server project
- **BIRD**
  Leader Router server project
- **IXP Manager**
  IXP member portal project



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Namex Bari is born.

A new Namex Internet exchange point for the South.

bari.namex.it →

Namex Napoli is born.

The second Namex regional IXP.

Regional IXP(s)

Why do we open regional IXPs

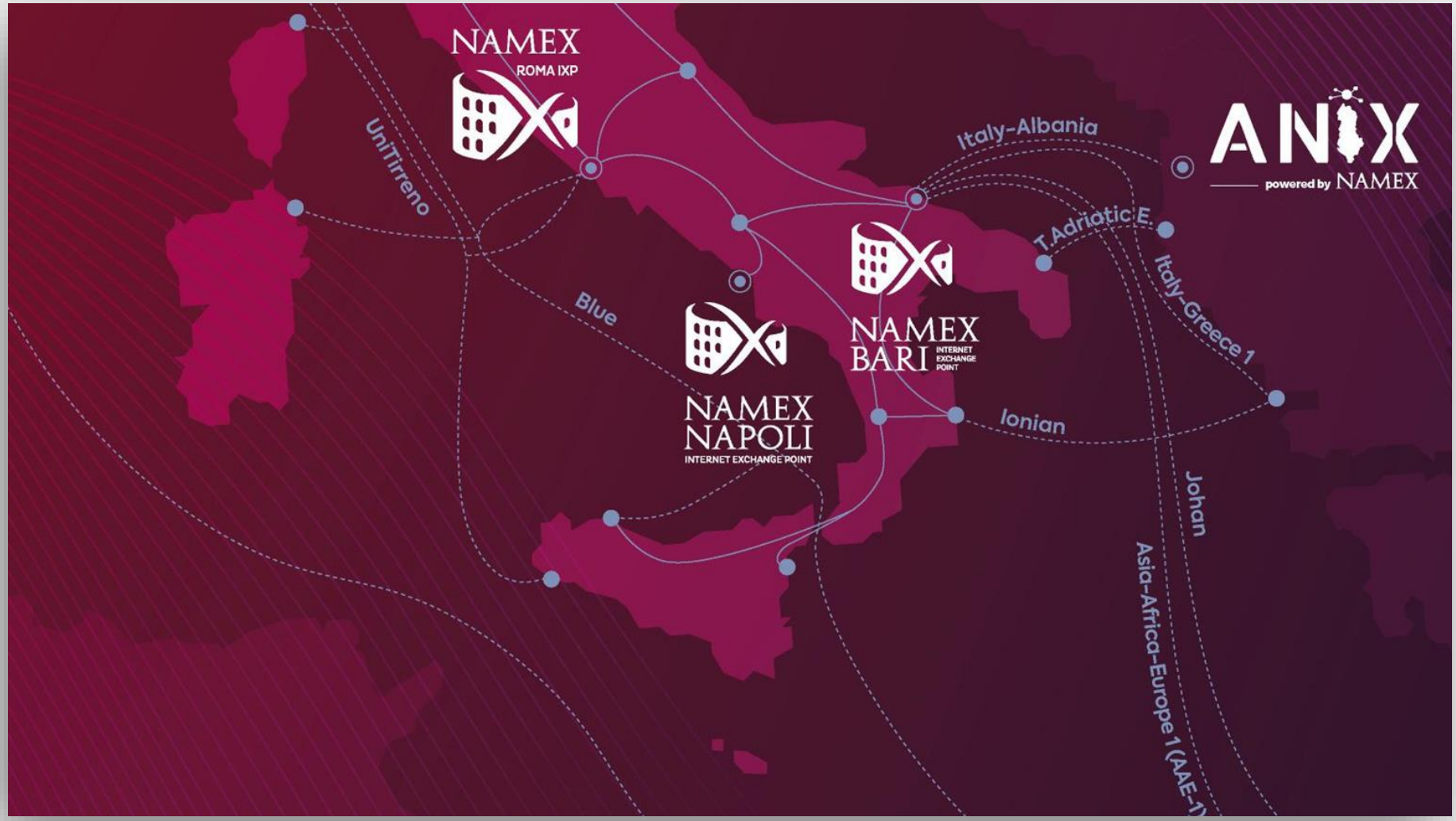
- Peering moves towards the edge
- Carrier neutral DCs for local ISPs
- OTT caches for smaller ISPs
- Marketplace for wholesale ISPs
- National and international ISP POPs

NAMEX BARI INTERNET EXCHANGE POINT

NAMEX NAPOLI INTERNET EXCHANGE POINT

Namex at a glance today

Namex today


NAMEX
ROMA IXP
UniTirreno
Blue
NAMEX
NAPOLI
INTERNET EXCHANGE POINT
NAMEX
BARI
INTERNET EXCHANGE POINT
Italy-Albania
ANIX
powered by NAMEX
T.Adriatic E.
Italy-Greece 1
Ionian
Johan
Asia-Africa-Europe 1 (AAE-1)

NAMEX
ROMA IXP

COOPERATION AND DEVELOPMENT

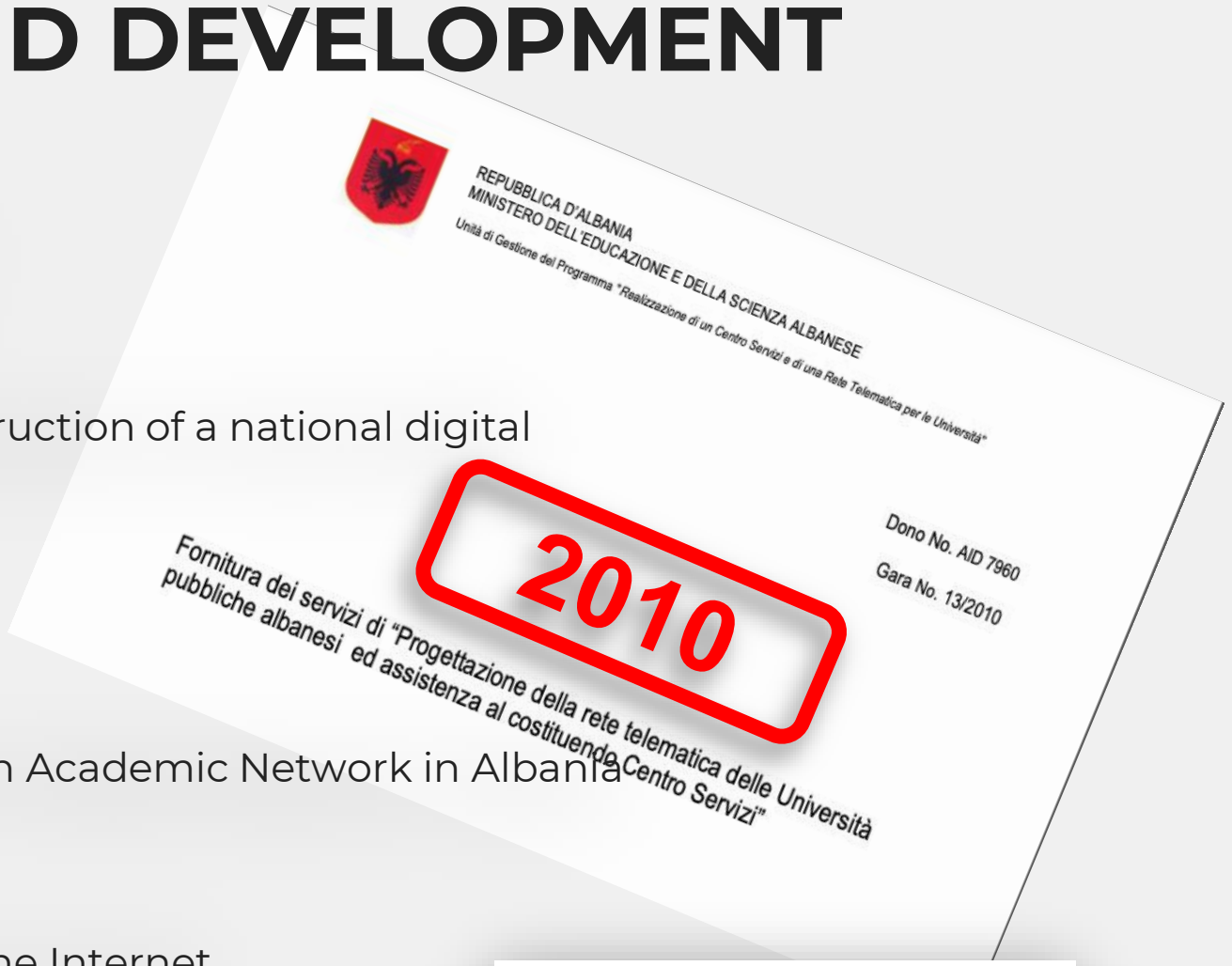
The Italian government decided to finance cooperation and development in Albania

One of those initiatives was financing construction of a national digital research network.

This is where we came in.

There had been several initiatives to build an Academic Network in Albania (ANA) throughout the years

Each university had its own connection to the Internet

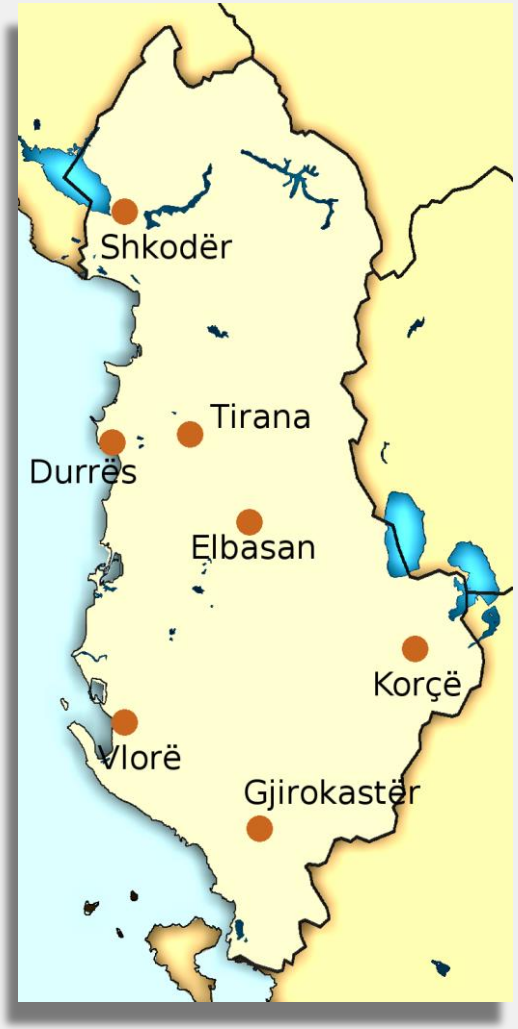


AGENZIA ITALIANA PER LA COOPERAZIONE ALLO SVILUPPO

Presidenza del Consiglio dei Ministri

CASPUR
Consorzio interuniversitario per le Applicazioni di Supercalcolo Per Università e Ricerca

THE ALBANIAN ACADEMIC NETWORK



The network had to connect 11 public universities in 7 cities

3 research centers

Ministry of Education

2012

Albanian NREN had to be connected to GEANT through Italian NREN GARR

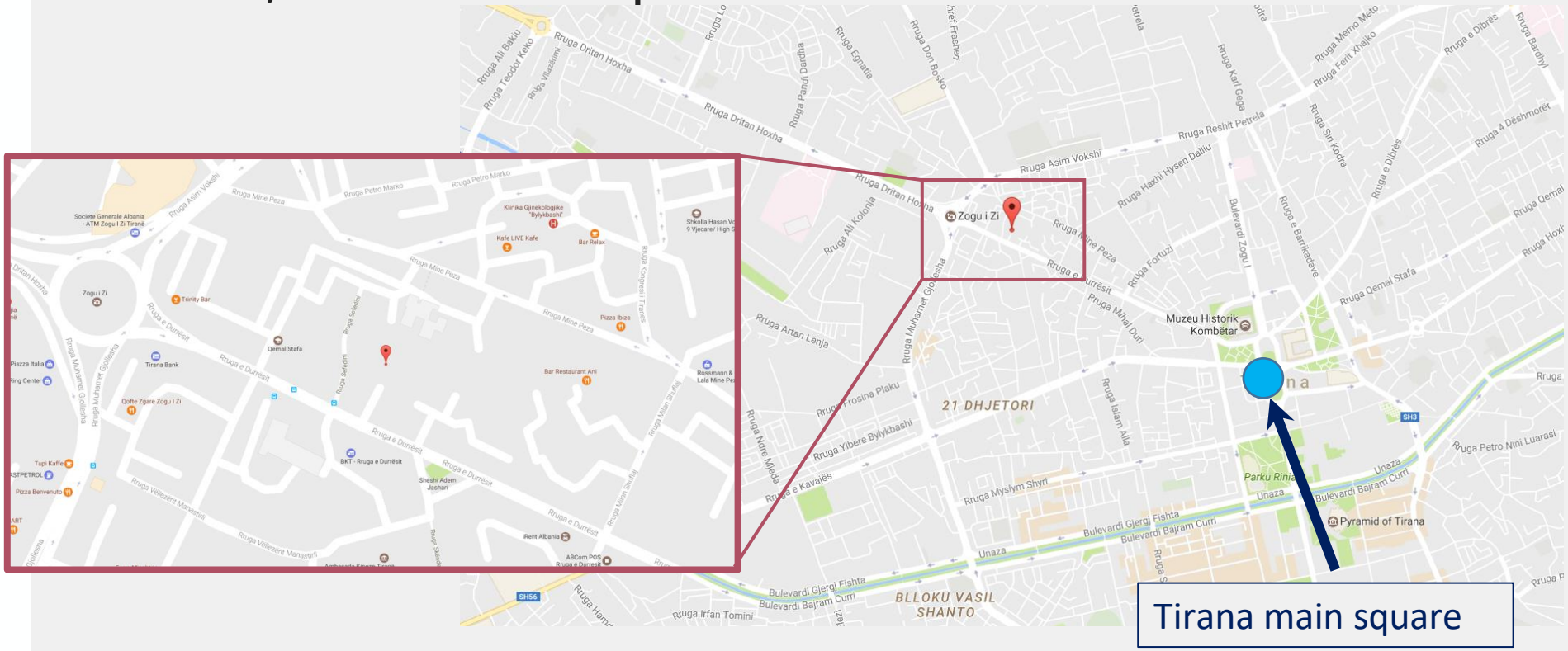
RASH was finally founded in 2012

RASH
RRJETI AKADEMIK SHQIPTAR

DATA CENTER

2016

RASH has its own DataCenter in downtown Tirana, Albania's capital.



BACK TO THE ROOTS

NREN mission was accomplished

RASH
RRJETI AKADEMIK SHQIPTAR

But we're IXP guys ...

What was the Albanian ISP Interconnection like?

Before ANIX Existed: 2017

Albania:

- **ISP-rich environment (51 ASNs)**
- **No neutral IXP** (one non-neutral IX managed by the incumbent)

Where does local Albanian traffic go?

- Shkodër to Tirana: 70 km
- Traceroute:
  - Athens
  - London
  - Amsterdam
  - Hamburg
  - Prague
  - Bratislava
  - Budapest
  - Belgrade
  - Podgorica
- RTT: 108.7 ms

(Made with RIPE Atlas)

RIPE SEE6, 12 June 2017, Budva

RASH
RRJETI AKADEMIK SHQIPTAR

NAMEX ROMA IXP

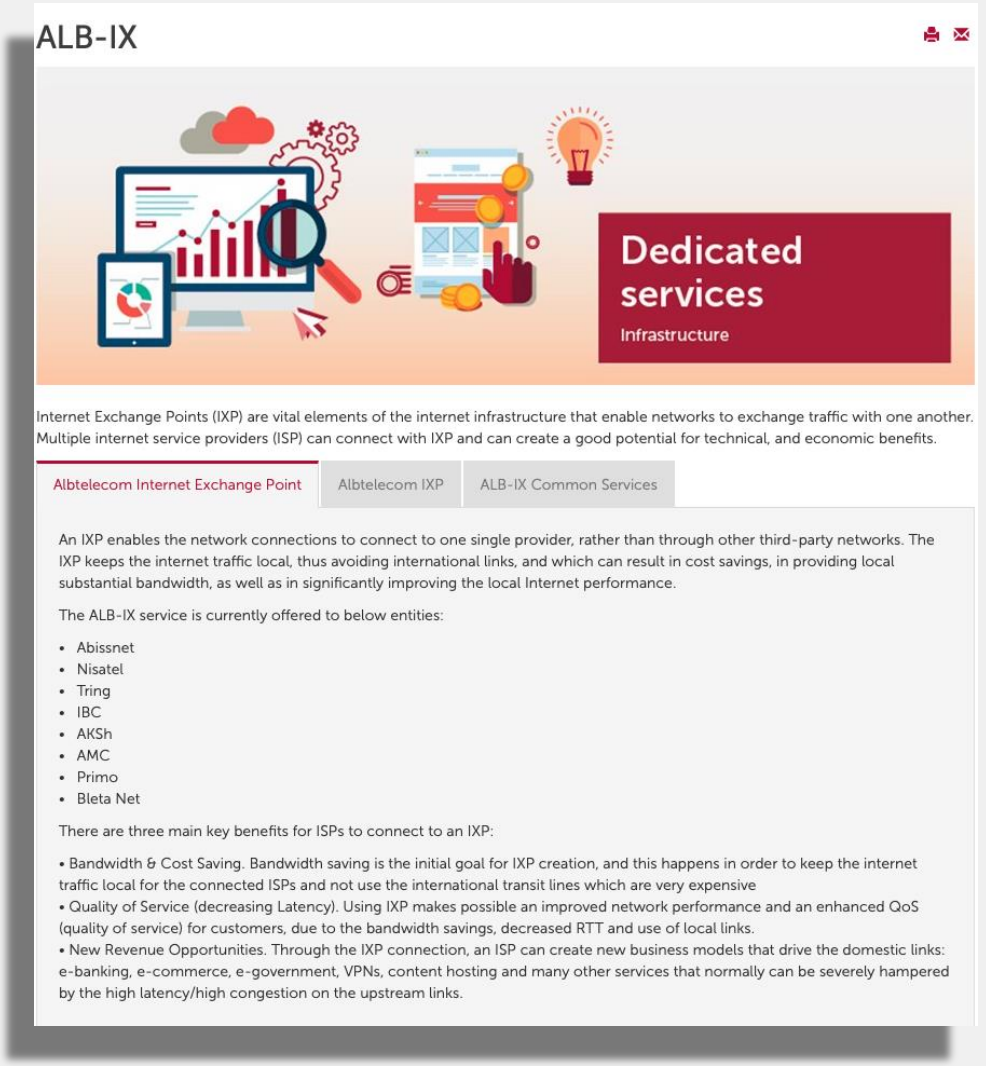
HOW TO INTERCONNECT IN ALBANIA?

One existing “IXP”: ALB-IX (established in 2011)

A service of ALBtelecom (the incumbent) - 8 customers

Main drawback: lack of trust of ISPs in the incumbent

- Competitor
- Non-neutral



ALNOF

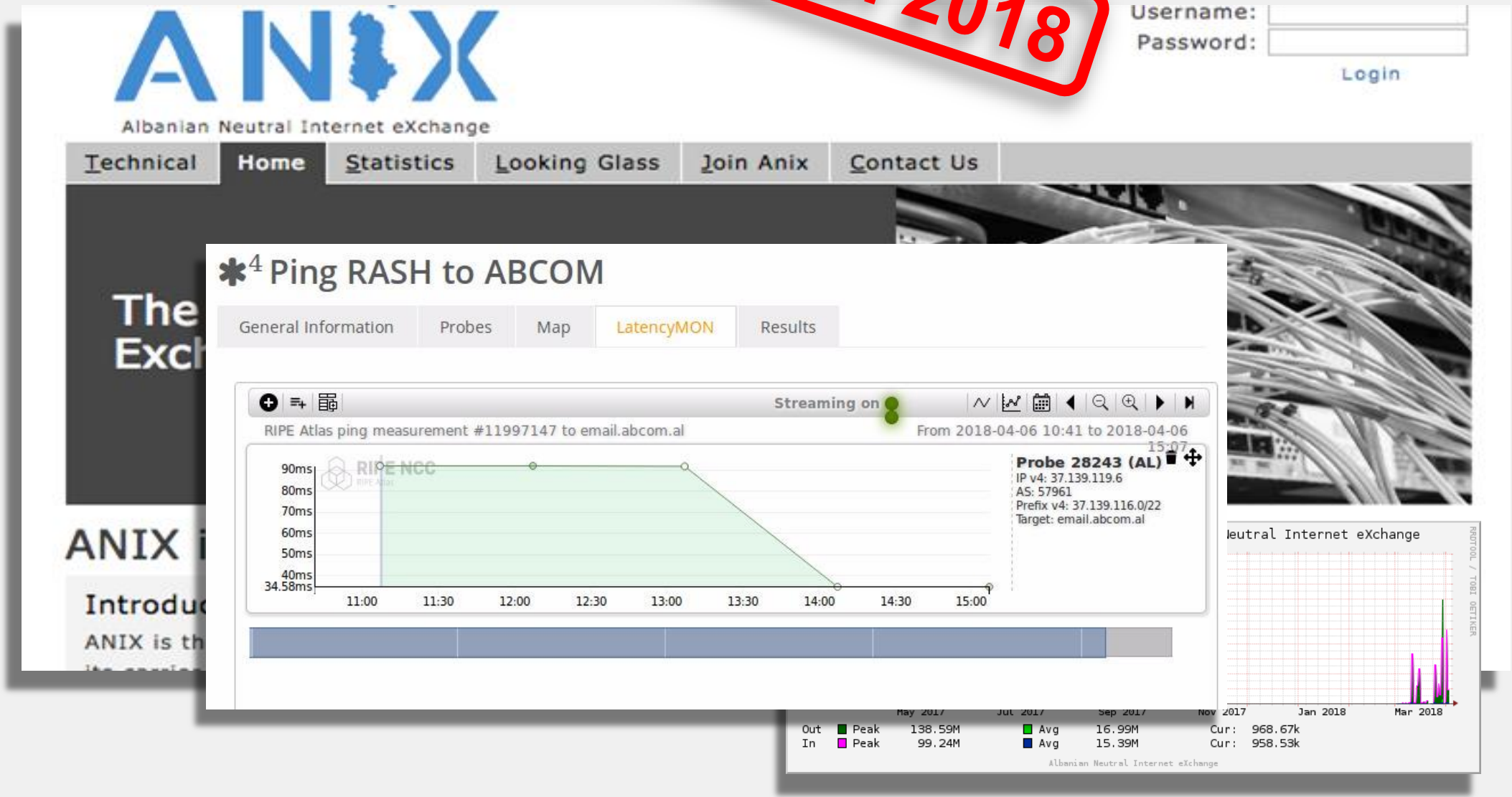
November 2017

More that 100 attendees

50 Albanian ISPs and agencies

ANIX is alive!

March 2018



First Content Provider

December 2020

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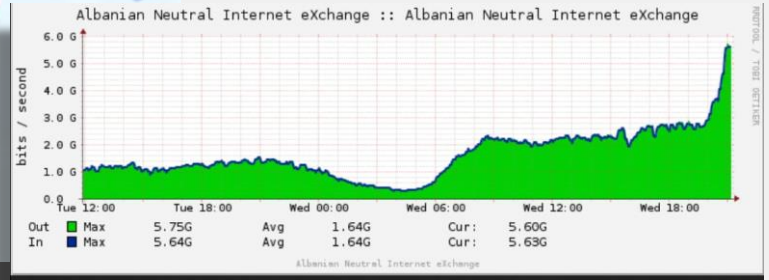
ROMA Internet eXchange Point

25 ANNIVERSARY

Facebook is active and is peering at **ANIX**, the Albanian IXP **powered by Namex!**

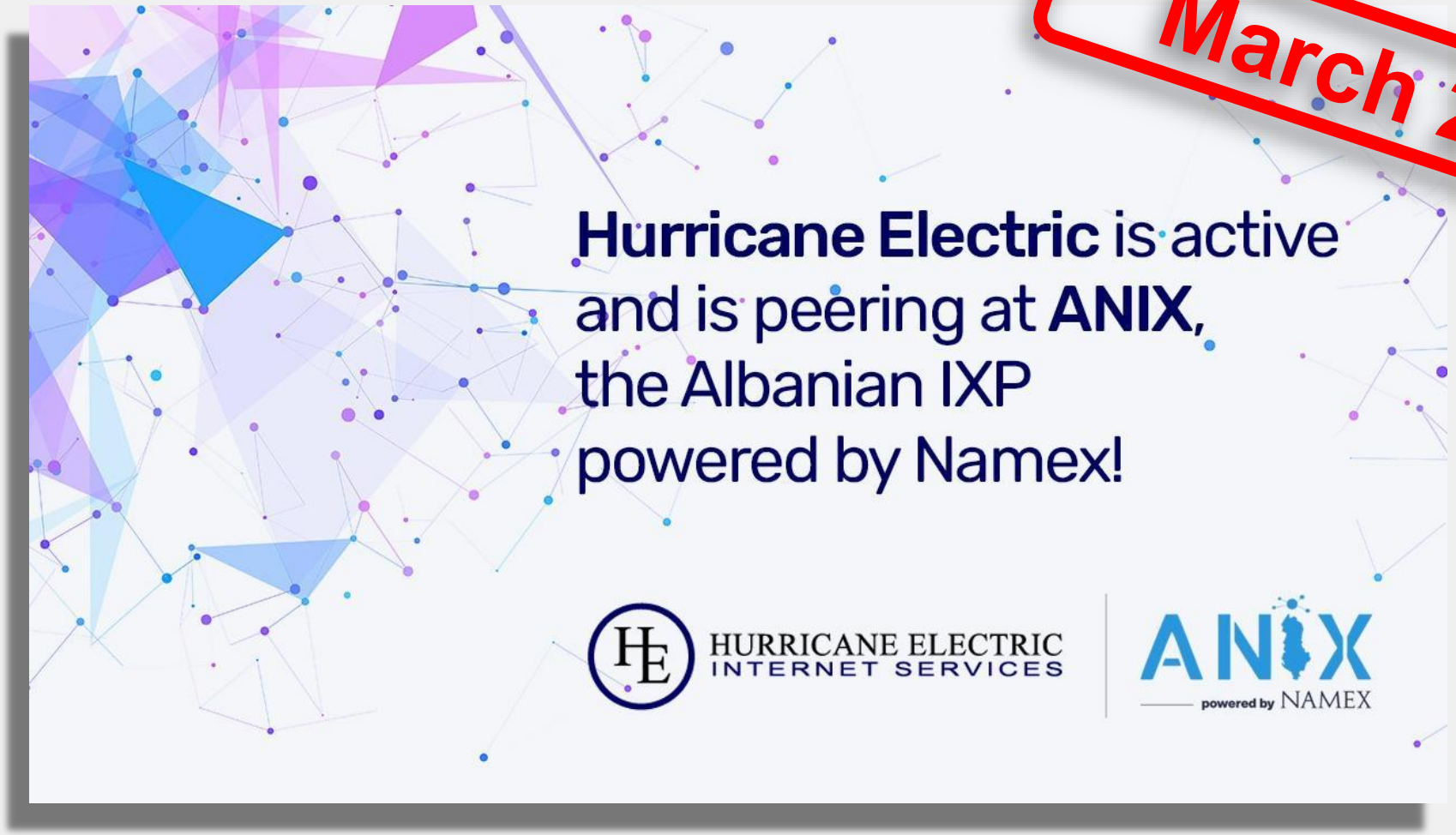
ANIX



Traffic milestone

February 2022

First International Transit provider



2017

2018

2019

2020

2021

2022

From 0 to 18(+1) members in 4 years

14 Albanian networks

5 international players

Traffic peak of 26 Gbps

Powered by Namex

Housed at RASH (NREN)

With the support of:

Internet Society

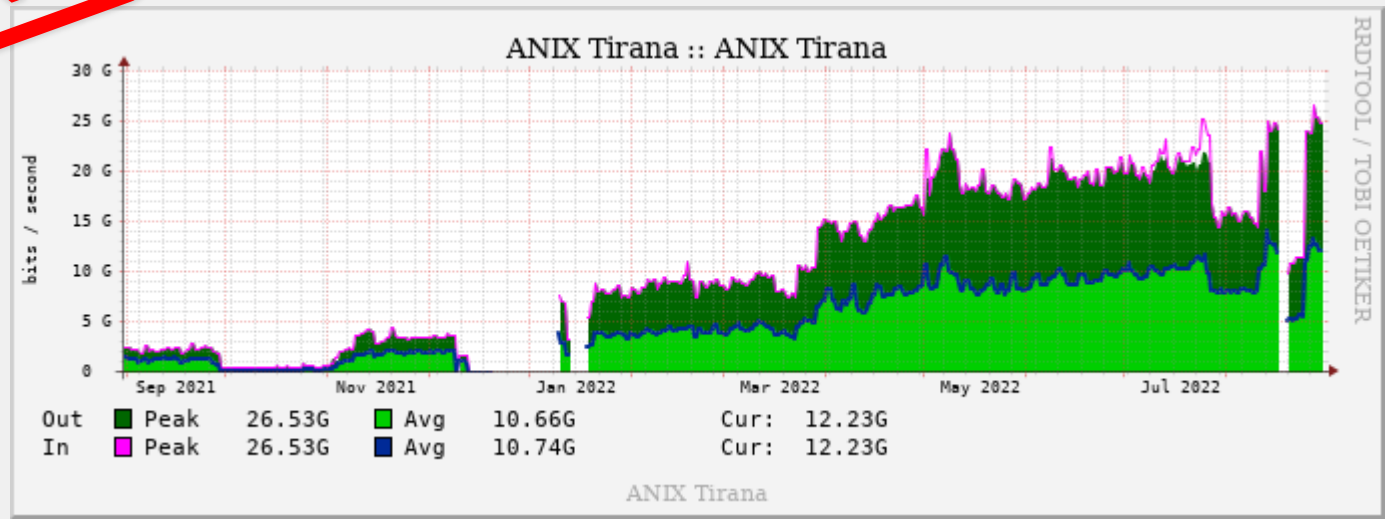
NAMEX ROMA INTERNET EXCHANGE POINT

RASH ALBANIAN ACADEMIC NETWORK

RIPE NCC RIPE NETWORK COORDINATION CENTRE

PRO-BONO

ANIX Development



NETFLIX

Today

ANIX Today

- Neutral IXP
- Albanian ISP Hub
- Carrier Neutral Datacenter
- Content Providers
- International Transit Provider

- Useful!
- A promising future!

NAMEX ROMA IXP

International Gateway

- ANIX has the opportunity of becoming an important International Internet Hub

- New Submarine Cable Players
  - TAE by Exa
  - Italy-Albania by TIS & AlbTelecom
  - Italy-Greece 1 by WIS
  - Ionian by Islalink

EXA

Time for a new course

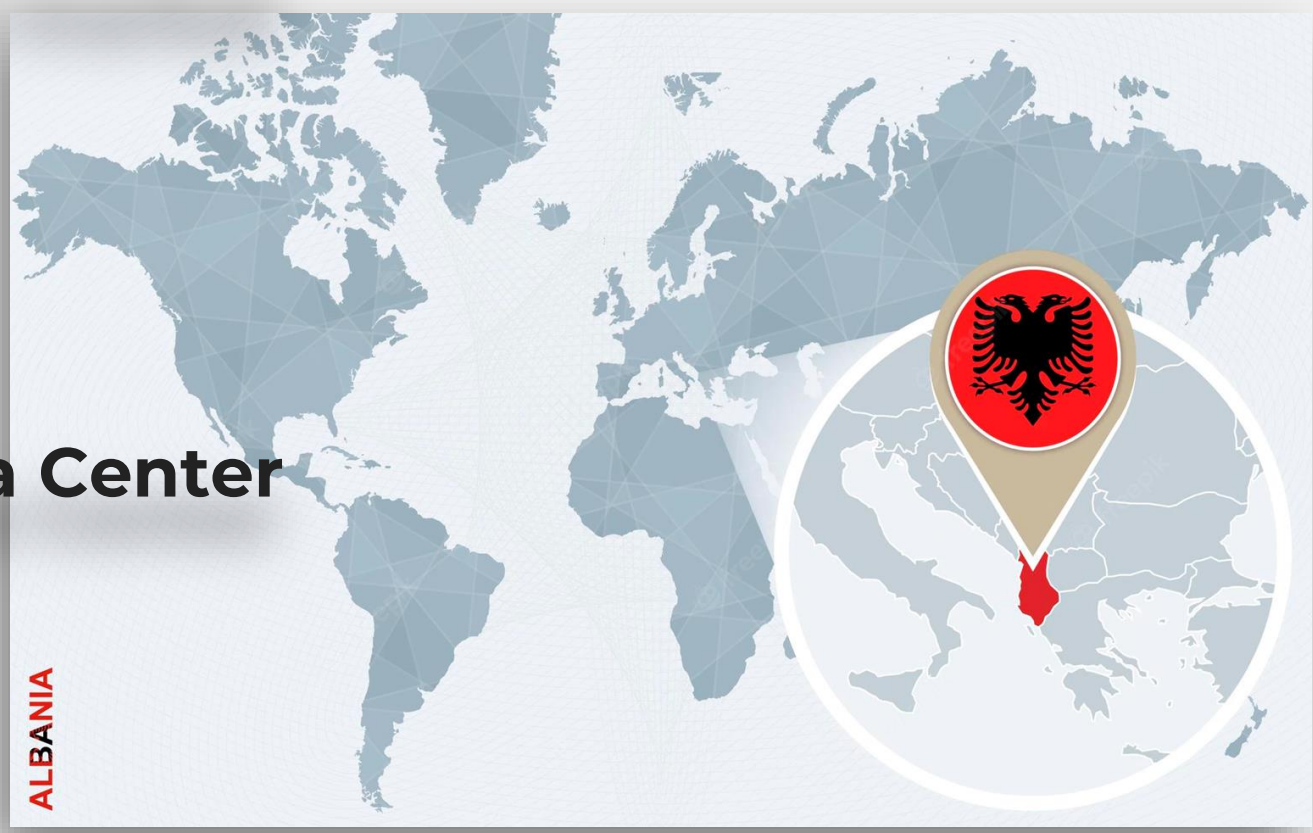
- ANIX has become too important to keep on being "voluntary based" and pro-bono.
- It must be sustainable to be able to grow

- ANIX will be managed by RASH and "Powered by Namex"
- Namex will also be a reseller of ANIX services

NAMEX
ROMA IXP

Opportunity for Albania

- Albania can be an International hub with opportunities for local market
- But it needs:
  - Neutral IXP
  - Open Market
  - Carrier Neutral Data Center
  - ISP Community



NAMEX
ROMA IXP

ANIX: The Only Neutral Internet Exchange in Albania

Thank you!

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RASH
ALBANIAN ACADEMIC NETWORK