



**ANNUAL MEETING 2017**  
Roma, 3 Luglio 2017 "Casa del Cinema"

**ACCESS  
PROVIDERS  
MEET  
CONTENT  
PROVIDERS**

# 2016 balance and project for 2017

Maurizio Goretti

*General Manager – NaMeX Roma*

ROMA Internet eXchange Point

**ONE X ENO**  
Time



# Benvenuti!

Siamo in tanti

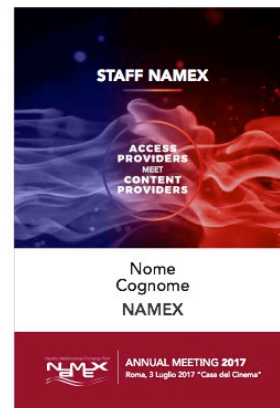
## Welcome to Rome at NaMeX Meeting 2017!

More than 220 registrations

More than 100 companies



# Badge Colors



# Thanks Sponsors

- Gold



- Silver



- Bronze



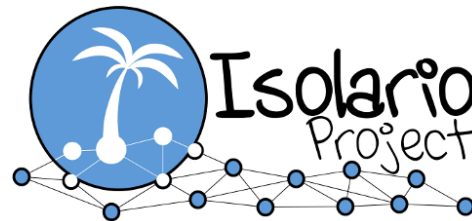


**Thanks**  
Collaborators



**RIPE NCC**

RIPE NETWORK COORDINATION CENTRE



**PeeringDB**

# NaMeX supports





10:00-10:30

**INTRODUCTION**

*First Floor*

10:30-11:00

**GUEST IXP**

**Katsuyasu Toyama**

*First Floor*

11:00-13:30

**CONTENT PROVIDERS  
MEET ACCESS PROVIDERS**

*First Floor*

13:30-15:00

**LUNCH**

*Ground Floor*

**DESSERT AND COFFEE**

*First Floor Terrace*

15:00-19:00

**ONE X ENO**

*Time*

*Ground Floor*

18:00-19:30

**NETWORKING  
COCKTAIL**

*Ground Floor*

# One to One Time

Meeting for Business @ NaMeX

ONE X ENO



## STEP 3

Se l'invito sarà accettato incontralo all'ora concordata al numero del tavolo di incontri assegnato



# Meet NaMeX Staff

Red Badge

## Administration

Maria Mocciaro



Tiziana Pappalardo



# Meet NaMeX Staff

Red Badge

## NOC

Francesco Ferreri



Flavio Luciani





# Meet NaMeX Staff

Red Badge

## Sales

Luca Davoli



## Event Manager

Claudia Cogoni



# Consiglio Direttivo NaMeX

## Blue Badge

- Riccardo de Sanctis – Presidente
- Renato Brunetti – Unidata, vice Presidente
- Antonio Baldassarra, Seeweb
- Silvano Fraticelli, MC-Link
- Domenico Jannelli, Akamai
- Alberto Maria Langellotti, TIM
- Danilo Lanzoni, WindTre
- Giuliano Peritore, Panservice
- Rosario Pingaro, Convergenze
- Carlo Sansone, Cineca

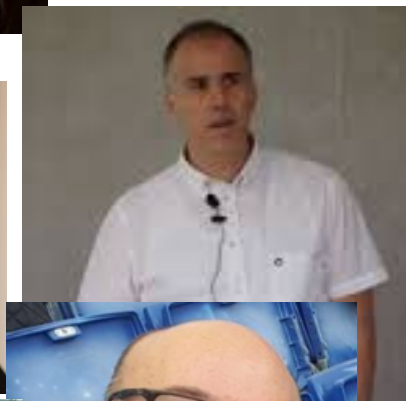
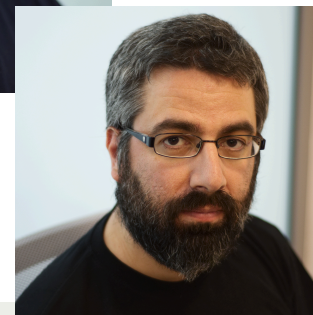
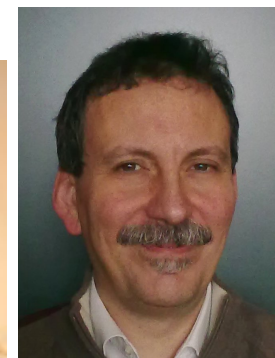
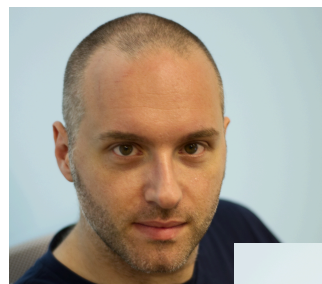




# Comitato Tecnico NaMeX

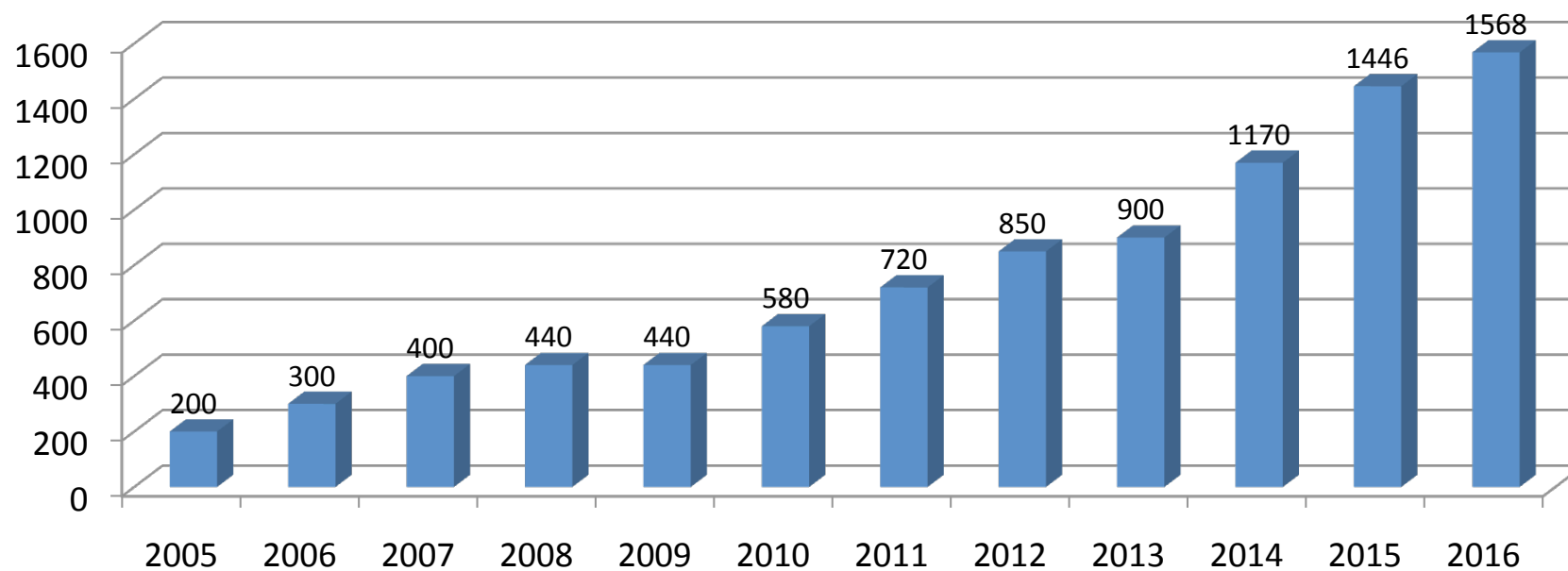
Yellow Badge

- Francesco Ferreri – Direttore Tecnico
- Massimo Carboni – GARR
- Giuseppe “Pino” Di Battista – Univ. Romatre
- Florence Lavroff - herself
- Flavio Luciani – NaMeX
- Augusto Paolo Mari – Gtech
- Luca Rea – FUB
- Giampaolo Rossini – Unidata
- Gianpaolo Scassellati – Veon
- Mauro Screti – Poste Italiane
- Antonio Soldati - TIM



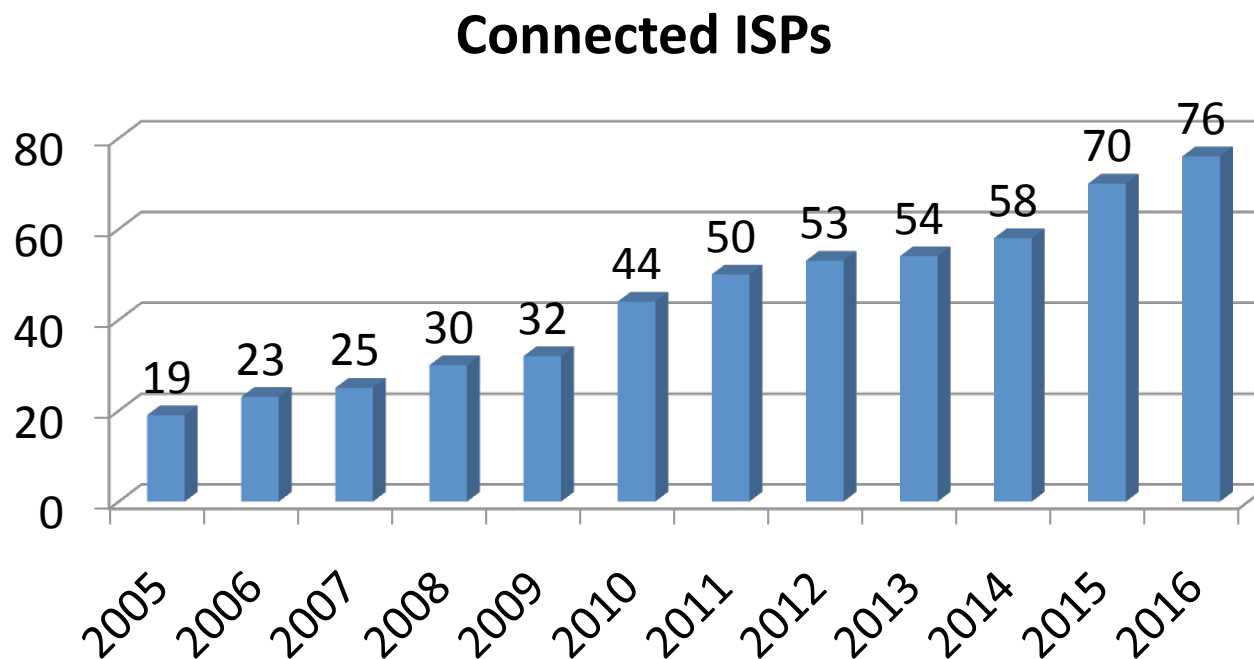
# Revenue 2016

- Revenue 2016 is growing
- 1,56 Mln Euro (+8%)



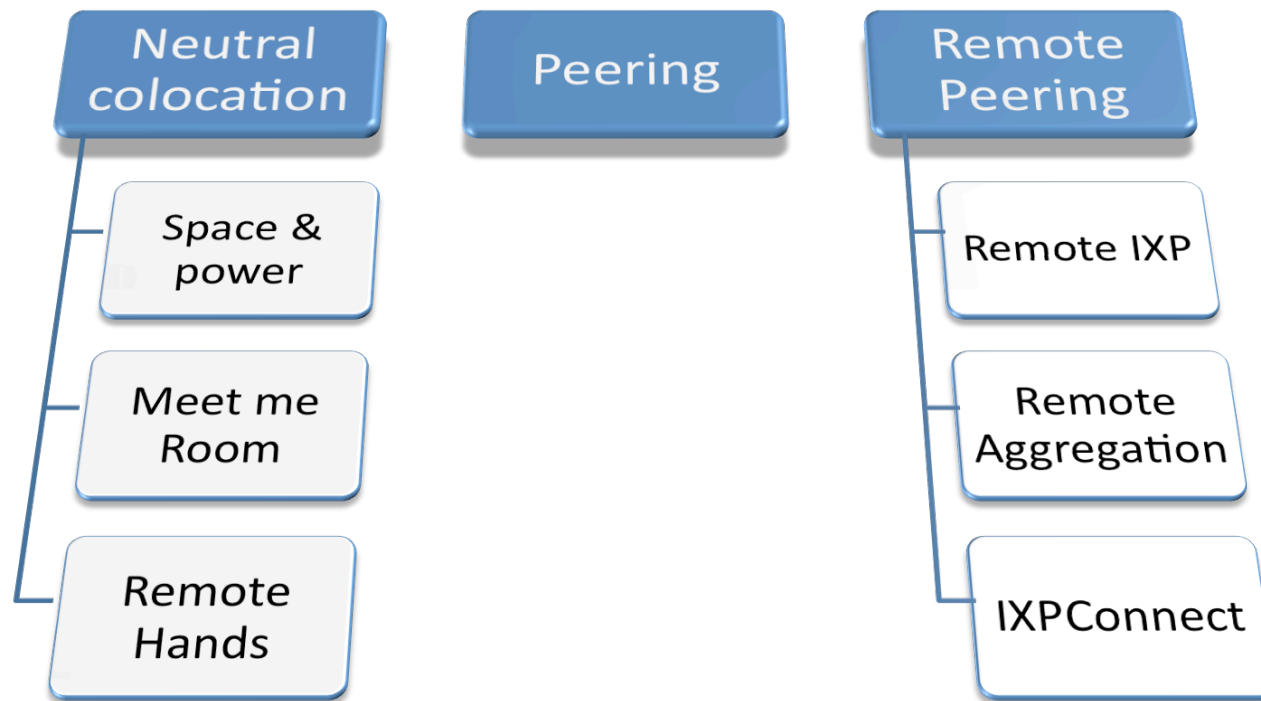
# Connected ISP

- Number of connected ISPs is growing (+8,5%)



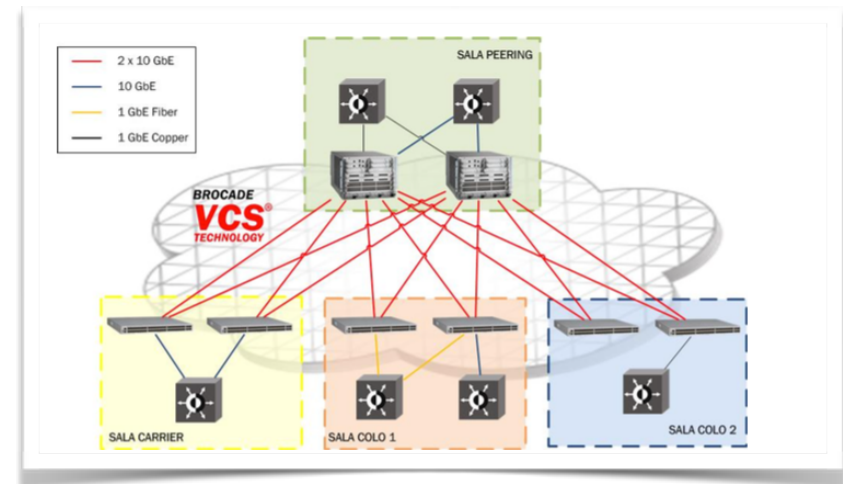


# Service overview

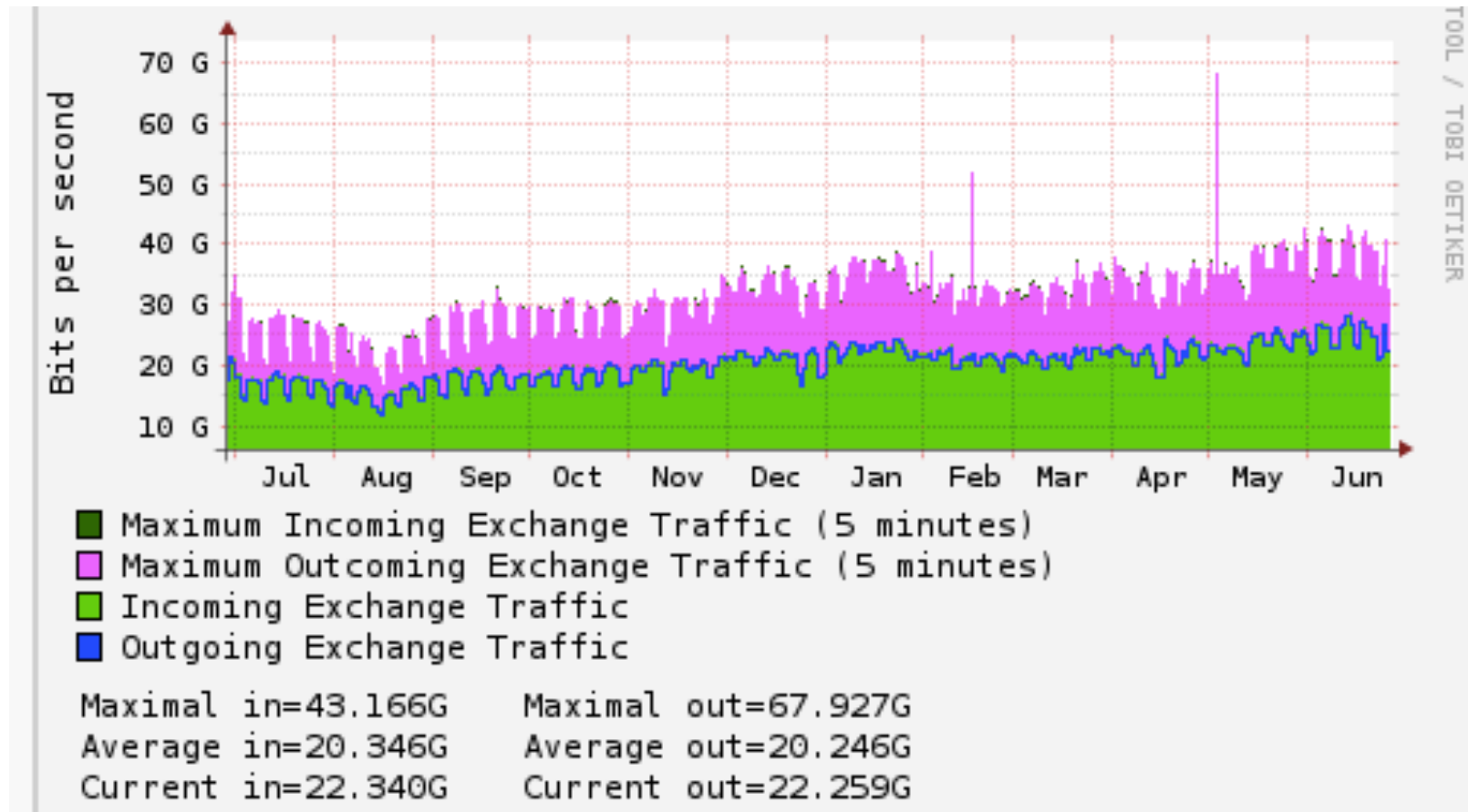


# Peering

- Brocade VDX series
  - Leaf-spine layout
  - Full redundancy (power, management, data control and data forwarding)
- 100M, 1G/10G connectivity - 100G ready (VDX8770)
  - 2 route server OpenBGPd/OpenBSD
  - Configuration is automated
  - Automatic input filter generation



# Peering





# Peering

## Incentives

Porta	2016 (Euro/Month)	2017 (Euro/Month)	Variation
100 Mbs	100	35	<u>- 65%</u>
1 Gbps	400	220	<u>- 45%</u>
10 Gbps	1250	850	<u>- 32%</u>
100 Gbps	5000	4300	<u>- 14%</u>

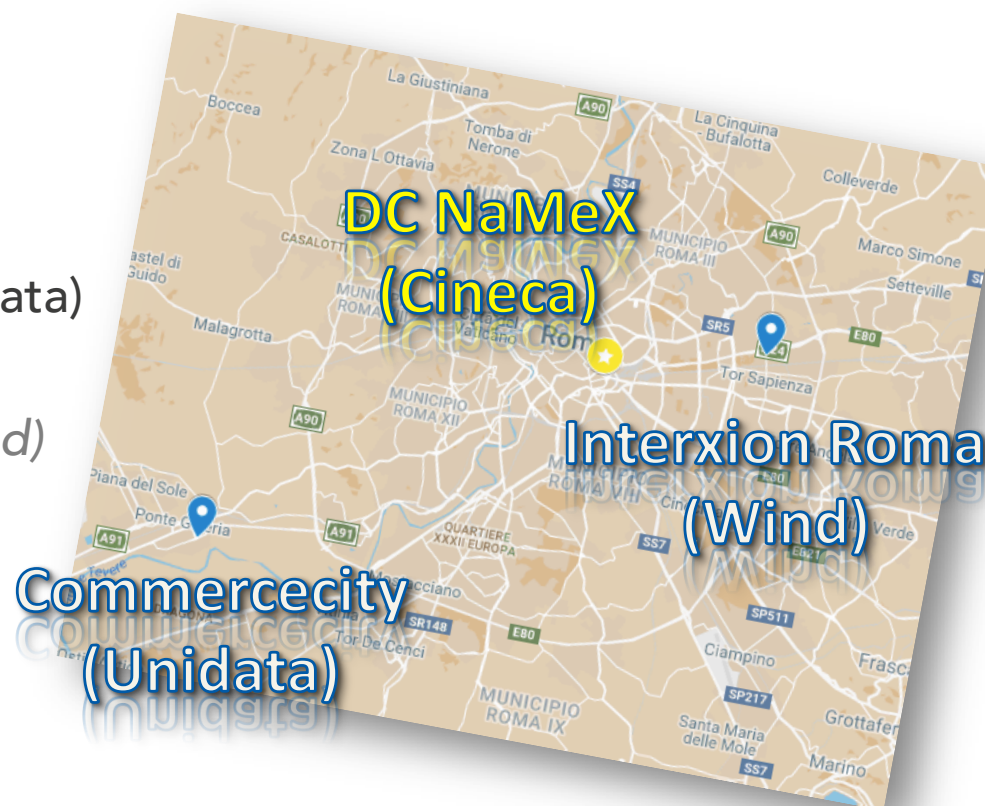
- New members : 3000 Euro NRF
- Better position in [IXP cost ranking](#)
- **Second port 50% discount**
- **Try (and buy)**
  - Prospect member: 6 month free of charge up to 10 Gbps
  - Active member: 6 month port upgrade free of charge

# Carrier Neutral Colocation

- NaMeX può essere utilizzato come One-ShopStop

- DC NaMeX Cineca

- 2 nuovi DC
  - Commercecity (Unidata)
  - Interxion Roma (Wind)
- Collegati DF e DWDM



# Space & Power

## ONE-EIGHTH RACK

**220€/mo**

200W POWER BUDGET

5RU space available in standard 19" 42RU, including redundant power supply up to 200W. Recurring fee (1 month).

## QUARTER RACK

**425€/mo**

250W POWER BUDGET

10RU space available in standard 19" 42RU, including redundant power supply up to 250W. Recurring fee (1 month).

## HALF RACK

**650€/mo**

500W POWER BUDGET

20RU space available in standard 19" 42RU, including redundant power supply up to 500W. Recurring fee (1 month).

## FULL RACK

**1.100€/mo**

1KW POWER BUDGET

Full rack, standard 19" 42RU including redundant power supply up to 1kW. Recurring fee (1 month).

## BARE FOOTPRINT

**925€/mo**

1KW POWER BUDGET

Bare footprint including redundant power supply up to 1kW. Recurring fee (1 month).

## POWER UPGRADE

**275€/mo**

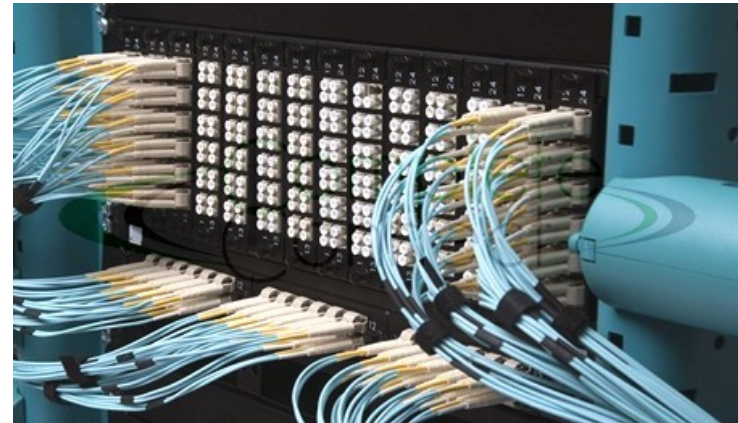
+1 KW POWER BUDGET

Upgrade to power budget. Recurring fee (1 month).



# Meet me Room

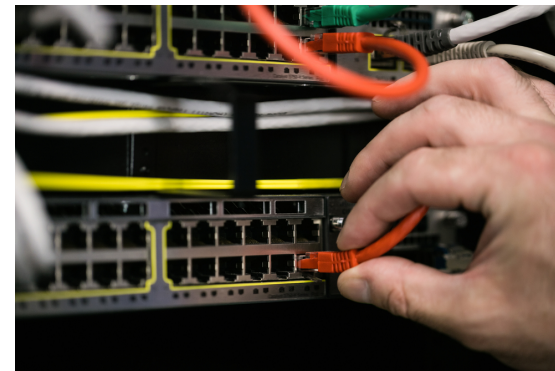
- New meet me room infrastructure
  - MPO Cabling technology
  - Nearly plug and play
  - Rapid deployment
  - MMR terminals available in each room
- Special Offer 2017!



CROSS CONNECT
<b>€10/mo</b>
Single cross-connect in meet-me room

# Remote Hands

- On-site support on the following activities:
  - Hardware installation/upgrade (no configuration)
  - Basic hardware troubleshooting
    - Remote eyes
    - Reboot/reset
    - Interface loops
  - Cabling troubleshooting
    - Dust removal / plug reset
    - Acquisition of equipment and know-how on measurements and diagnostics (OTDR/power meter/fiber certification) might be needed!
  - MMR cross-connects moving from RH activity to standard provisioned service



# Remote IXP

- NAMEX customers can share a virtual transport link to connect to partner IXPs in Europe

- AMS-IX, Amsterdam



- established since 2010
- 10 members connecting from NAMEX
- 808 connected ASNs (28 already at NAMEX)
- 683 ASNs available through Route Server (~193k IPv4 prefixes)

- LINX, London



- First connected networks: Convergenze (AS39120), SED Multitel (AS35574)
- 791 connected ASNs (15 already at NAMEX)
- 587 ASNs available through Route Server (~150k IPv4 prefixes)

- Remote peering makes ~1300 unique ASNs visible at NAMEX
- Looking for more partners

# Remote IXP

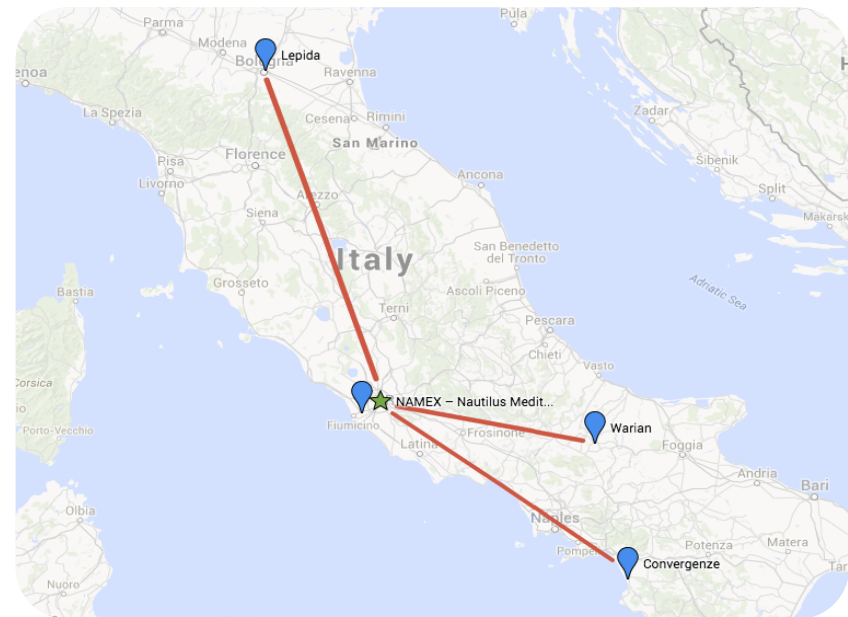
VLAN	2016 (Euro/month)	2017 (Euro/month)	Variation
250 Mbps	420	350	<u>- 16 %</u>
500 Mbps	600	500	<u>- 16 %</u>
1 Gbps	1000	850	<u>- 15 %</u>

- Backhaul to both AMS-IX or LINX included



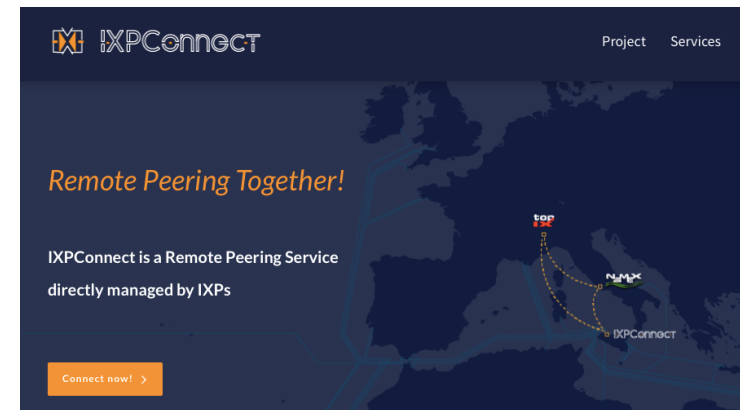
# Remote Aggregation

- Remote groups @NaMeX  
A partner aggregates customers and provides physical link to NAMEX:
- Current partners: Lepida, Convergenze, Unidata, Warian
- 8 active remote customers



# IXP Connect

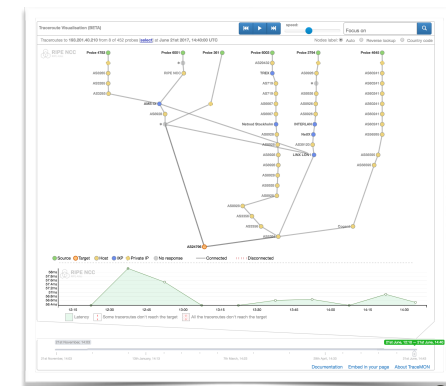
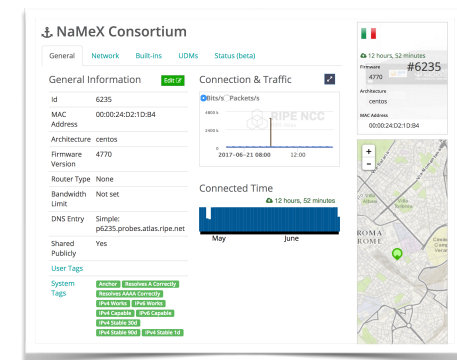
- Open initiative by a federation of italian IXPs: aim is to help local and foreign operators better connect to national networks
- Remote aggregation towards multiple IXPs
- Shared transport and peering LANs extension
- Aggregation points throughout Italy
  - Palermo, SicilyHub
  - Roma, NAMEX
  - Torino, TOP-IX



# RIPE Anchor



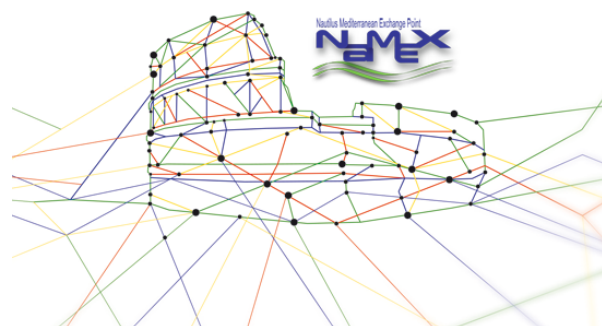
- Since November 2016 we host a RIPE Anchor (it-rom-as24796)
- RIPE Atlas anchors provide valuable information about the local and regional connectivity and reachability of the Internet.
- A TraceMON tool widget has been embedded into NAMEX website
- TraceMON Provides information for monitoring and investigating reachability and performances of one or more targets in a network.



# Neutral IXP in Albania

Collaboration between NaMeX and Albanian NREN

- NaMeX and RASH, the academic network of Albania, signed a letter of intent to study the feasibility of a neutral exchange point (IXP) in Tirana.
- Albania is a growing country with a rich ISP ecosystem, but local traffic often travels through foreign countries.
- NaMeX will provide its experience to support RASH in the creation of the first neutral IXP in Albania.





# NaMeX new office

## Meeting room for members

- NaMeX has finished to renovating his new offices
- A meeting room is available on request from the NaMeX members in the center of the city
- Send request to [info@namex.it](mailto:info@namex.it)



# Peering DB

- Network operators need a common place where to look for information about peering points
- PeeringDB is the de-facto standard for storing this kind of information
- But ...
- Information about ISP presence at an IXP is managed by the ISP itself
- Information is scattered between Exchanges and Facilities



# Peering DB

NaMeX support PeeringDB

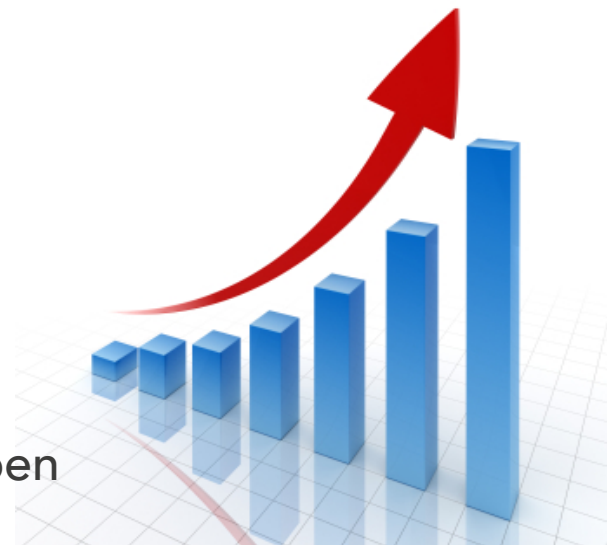
- Only ~50% of NAMEX members have properly filled in the information about their presence at NAMEX
- 2 objects:
  - NaMeX Rome IXP (IXP Object)
  - DC NaMeX Cineca (Facility)
- As happened with RIPE database, we need to stress the importance of maintaining proper information into PeeringDB!
- Please update!
- We've got a dedicated desk for PeeringDB
- Ask Arnold Nipper!



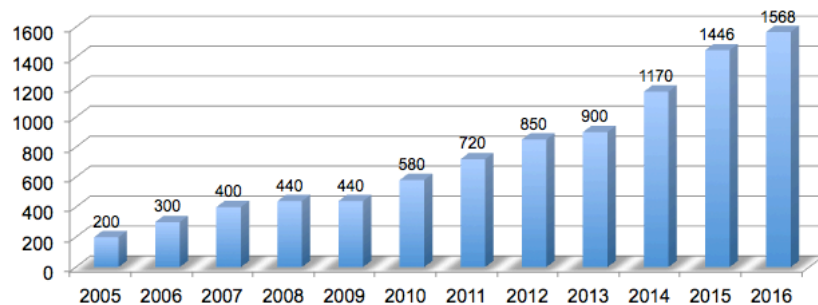
# Rome as Internet Hub

## Potenzialità

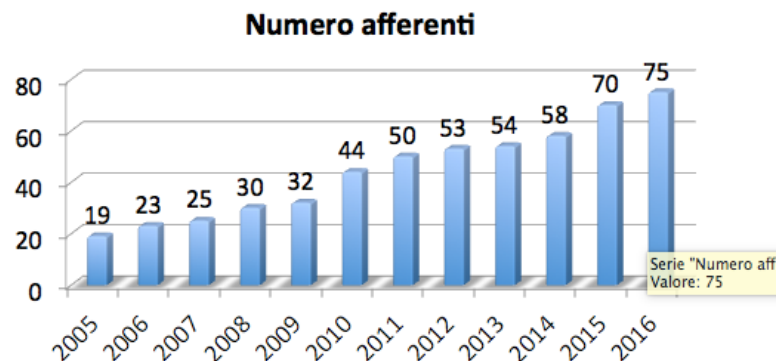
- Today NaMeX-Rome is a growing IXP
- But this growth might increase in the near future
- There are several allies that show this might happen



- Balance sheet 2016 is growing



- Number of connected ISPs is growing





# Italy country shape

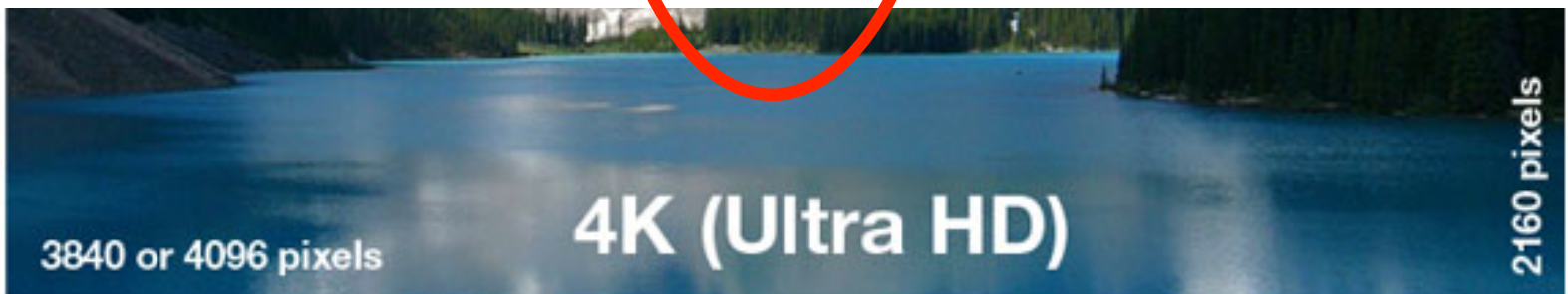


# More HR contents



Format	Resolution	Color Depth	FPS	Bandwidth per Stream	10GbE Ports	8Gb FC Ports	40/56Gb Ports
4K DPX	4096x2160	10-bit	24	6.4 Gb/s	1	1	1
4K-Full DPX	4096x3112	10-bit	24	9.2 Gb/s	1	2	1
4K-Full EXR	4096x3112	16-bit	24	14.7 Gb/s	2	2	1
4K-Full EXR	4096x3112	16-bit	60	36.7 Gb/s	4	5	1
8K DPX	7680x4320	10-bit	24	23.4 Gb/s	3	4	1
8K EXR	7680x4320	16-bit	24	28.2 Gb/s	3-4	4	1

*Bandwidth and network ports required for Uncompressed 4K & 8K video*



# Increasing HR conts popularity

- The increased popularity of IP High Resolution videos from TV and mobile devices



NETFLIX

You Tube 4K



# Increasing Internet access Speed

- Italian strategy for High-Speed Broadband



- Connectivity should increase at least of 1 order of magnitude in 3 years (2020)

- Minimum of 100 Mbps for up to 85% of the Italian population
- At least 30 Mbps downloads for all
- 100 Mbps for office and public building
- High speed broadband in industrial area

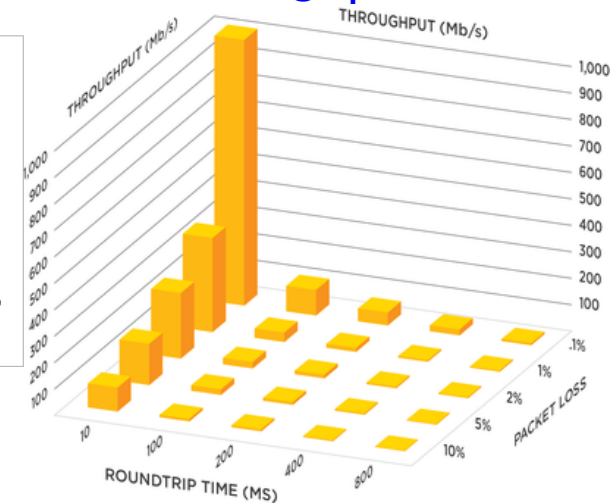
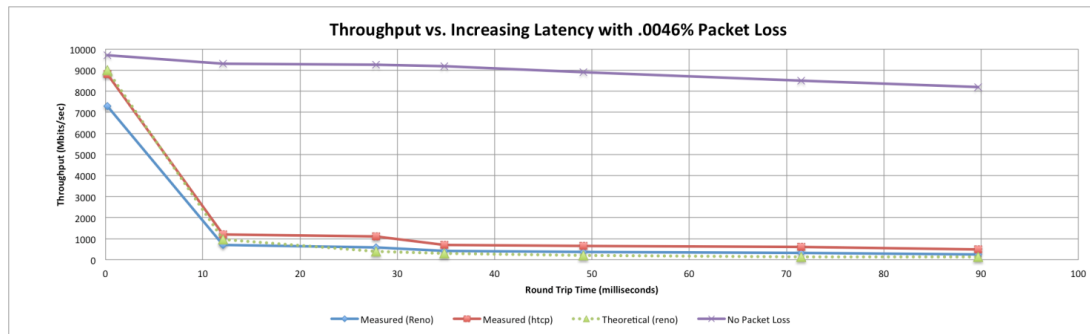




# Speed of light and TCP/IP

## Bottleneck

- Speed of light on FO : 200.000 Km/sec
- You need 5 micro-sec for 1 Km
- Italy is about 1500 km - > 15 ms RTT
- "TCP/IP has a inherent throughput bottleneck that becomes obvious and severe with increased packet loss and latency ... Adding more bandwidth does not change effective throughput "



# Rome as hub for south Italy

Content might meet Italian Access in Roma

- To have an efficient delivery of HR contents to End Users this should be less than 10 ms RTT
- In the case of Italy this means this means you can't serve the whole country only from Milan
- Roma should be the solution
- 800 km far to the edge
- Less than 10 ms RTT



# Ideal hub to serve South Italy

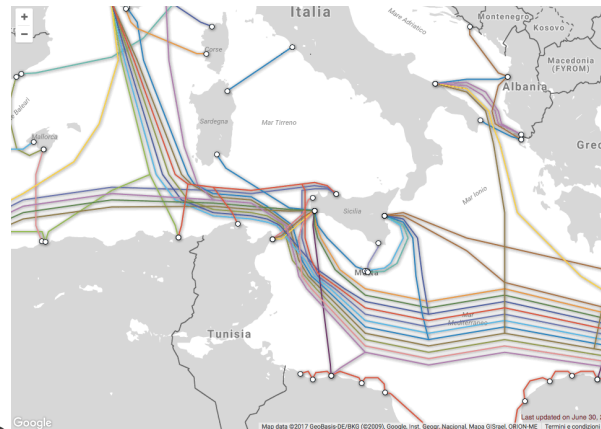
## for HR contents

- Italian Access Providers are well infrastructures in **Roma**.
- Most of them (TIM, WIND) say their network is completely equivalent/symmetric between Rome and Milan
- Last but not least in **Roma** a well developed IXP already exists and this is NaMeX
- Looks like the ideal place where **Contents** should meet **italian Access provider** to serve center and south Italy

# What about Sicily?

## Mediterranean submarine cable hub

- At last something happens in Sicilian sub cables environment
  - Sparkle Sicily Hub (Open)
  - Open Hub Med (Neutral)



- Roma should become a good compromise to bridge Europe to submarine cable because it's better infrastructured than Sicily and closer to Sicily than Milan.



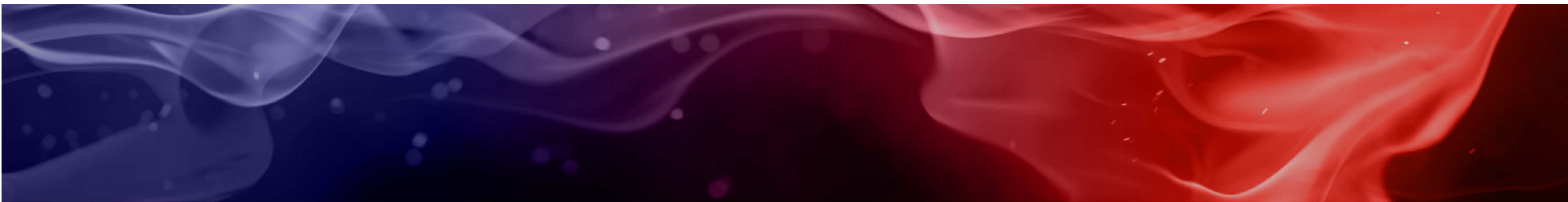
# And now the X hour

- Lots of challenges and opportunity have already happened and will be in the next future
- Our geographical position, Roma, might have a bigger importance in the future as a factor of growth
- NaMeX acronym means: “Mediterranean Exchange Point” and actual logo reflect this.
- So we decided to change one of the instrument that represent us, the current LOGO, to show our changes and our strategy and stress Roma centrality

Nautilus Mediterranean Exchange Point

**NAMEX**





# NAMEX

ROMA IXP



# Grazie e buon Meeting!

Maurizio Goretti

*General Manager – NaMeX Roma*