

## **The President's Highlights**

- Alessandro Talotta -

In the significant year of 2023, MIX experienced substantial growth, based on solid economic and financial parameters. The Board of Directors demonstrated professionalism in addressing strategic issues through extensive and harmonious discussions. The Auditors ensured supervision and active participation in board meetings. Thanks to the support of all stakeholders, new and crucial industrial investments for the development of innovative technological areas were approved, marking an important milestone for MIX and expanding the technological space at the Caldera Campus.

2023 was also a year of consolidation for energy procurement, with the implementation of the PPA contract. The marketing and communication department increased MIX presence at national and international events, achieving also a record number of participants at the year-end event. Additionally, during the year, customized services for clients were introduced with remarkable success.

The technology department, in addition to enhancing customer service, continued to work on providing cutting-edge resources and technologies, maintaining a high level of knowhow. MIX continues on the path of growth and investment, keeping its customers at the center of its production processes. The company looks to the future with confidence, aware of the challenges and opportunities that lie ahead.



#### **IDENTIKIT**

- · Leading Italian IXP, founded in 2000, long standing history of service
- · Highest concentration of connected networks in Italy
- · One of the few European IXPs equipped with its own datacentre
- · Carrier-neutral and data centreneutral
- · Interconnection services available at 11 different datacentres in Italy
- · Authoritative resource for Italian Internet traffic statistics & trends

#### **IN NUMBERS** (as for 31/12/2023)



ASN



Carriers on net



Unique ASN\*

compared to the 5 main Italian IXs



Traffic Peak (Tb/s)



Italian IXP traffic

**70**%



Connected Capacity (Tb)



Shareholders

World IXP\*

Source: IXPDB by Euro-IX

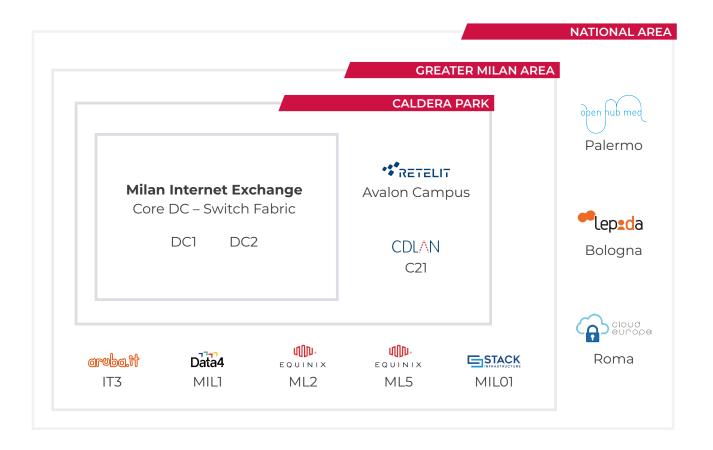
#### **euro-ix**

MIX is one of the founding members of Euro-IX, the European Internet Exchange Association, whose purpose is the coordination, the exchange of knowledge and experience and the development of harmonisation activities between the IXPs of different countries for the benefit of the entire European Internet community.



With approximately 150,000 km of submarine cables reaching Sicily, Italy is the natural hub for the "wet nets" of the Mediterranean. Exploiting this strategic positioning to strengthen Italy's role in the international telecommunications sector was the driver that led to the establishment of the Open Hub Med (OHM) Consortium.

The Consortium was founded by MIX together with other important national and international players.



#### **CERTIFICATIONS**





Confirming the level of excellence of its services and infrastructures in these areas, MIX has obtained an **ISO27001** certification, a standard issued by the International Organization for Standardization (ISO) which covers all the aspects of security of IT systems and processes.

MIX is the first IXP to overcome the controls required by ISO certification.

MIX has also obtained the **OIX-1** certification, currently issued to only 35 IXPs worldwide by Open-IX. This certification defines the standards of performance, reliability and resilience for large-scale interconnection services.

#### **SERVICES**

#### **Peering Services**

As Italy's leading Interconnection platform, MIX provides a number of solutions to meet your network needs

Peering Services enable all networks to interconnect with one another to exchange internet traffic.

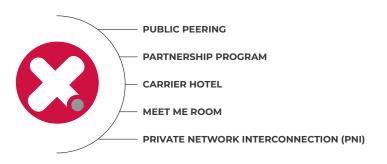
Interconnecting with other networks can be achieved in the following ways::

#### **Public LAN Peering**

The MIX Public Peering service offers a direct connection to exchange Internet traffic with a multitude of connected networks on the MIX high-speed layer 2 interconnection platform.

#### **Private LAN Peering**

This service facilitates interconnections with connected networks at MIX to establish an interconnection agreement via a dedicated private VLAN with another specific network operator.



#### **Private Network Interconnection (PNI)**

This service allows two connected networks to establish a dedicated and direct connection between their equipment within the MIX datacentre.

#### **Carrier Services**

MIX offers Carrier specific services at the MIX Datacentre where the MIX Core switches are located. Carriers are able to provide telecommunications services to other entities through their own transmission equipment or optical terminations at this MIX managed Datacentre.

Within a specific, protected part of the colocation facility with guaranteed functionality, MIX carriers are ideally positioned to offer:

- Interconnection services to operators connected on the MIX peering LAN
- · IP-Transit services to the wider Internet
- Interconnect their equipment (active or passive) to other MIX connected networks located in the datacenter

All of this easily, quickly and at a fair cost..

#### PARTNERSHIP PROGRAM

The programme is designed to facilitate connecting networks to MIX from locations where MIX switches are not physically installed.

Two options are available to best meet the different needs, and offer more opportunities to partners:

- Reselling Reselling allows the partner to resell the peering service to its customers in "dedicated" mode, i.e. one port (or LAG of ports) for each customer.
- Pooling è un Best Effort Service del Pooling Partner per connettere a MIX reti (dette Pool Element) su una porta di peering.

#### Characteristics

Clients are to all intents and purposes connected to MIX.

- First level support to customers is provided by partners
- Peering service support is provided by the MIX NOC
- The colocation of equipment in the MIX data centre is not possible.

#### I PARTNER DI MIX

#### Reseller

Airbeam

China Unicom (Europe) Operations Ltd.

Fiber Telecom

**GTT** Italy

**BSO Network Solutions** 

Redder Telco

Retelit

RETN

STACK EMEA

Telecom Italia Sparkle

#### **Pool registrar**

BBanda

Briantel

**BSO Network Solutions** 

Fiber Telecom

Internet One

Lepida

Net Global

Sirius Technology

Svswav

Wifiweb

#### **DATACENTRE SERVICES**

The MIX Datacentre is an optimal solution for housing network and transmission equipment intended for interconnecting at MIX.

The MIX Datacentre has been divided into four separate and specific areas to offer a tailored solution and to professionally manage both requested interventions by the MIX NOC staff, for connected network devices and for the arrival of newly connected networks.

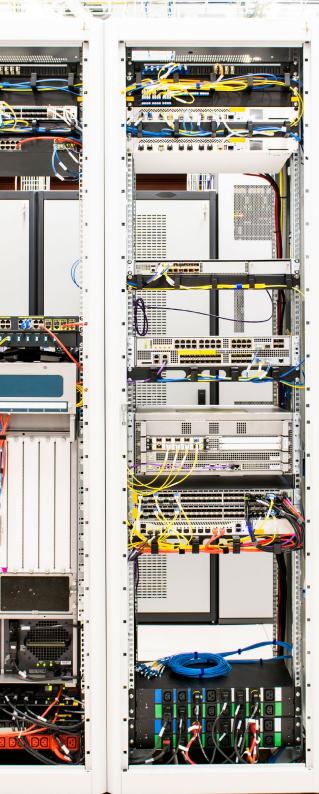


BLUE AREA dedicated to MEMBERS

RED AREA for TLC NETWORKS

ORANGE
AREA for
SPECIAL BID

GREEN AREA for INCOMING FIBERS





#### **BENEFITS**

- · Enhanced network performance
- · Reduced network latency
- · Improved customer and end user connectivity experience
- · Reduced IP transit costs
- · Better insight and control over routing and Internet data flows
- Increased redundancy and resiliency of your network connectivity
- Direct connections with other networks in a secure environment
- Highly reliable connectivity platform adhering to the highest technical standards

### INTERCONNECTIONS (as for 31/12/2023)









#### **RETI CONNESSE**



CONTENT DISTRIBUTION



**GAMING COMPANIES** 



INTERNET SERVICE PROVIDES



TRANSIT PROVIDERS



CLOUD PROVIDERS



**CARRIERS** 



ON-DEMAND CONTENT PROVIDERS



PUBLIC ADMINISTRATION GOVERNMENT



LIVE CONTENT PROVIDERS



**RESELLERS** 



## SHAREHOLDERS

AIIP - Associazione Italiana Internet Providers	11.47%
BT Italia S.p.A.	11.09%
Clio S.p.A.	2.49%
Eolo S.p.A.	15.00%
Fastweb S.p.A.	1.12%
Irideos S.p.A.	15,00%
It.Net S.r.l.	<b>5.37</b> %
Orange Business Italy S.p.A.	1.12%
Retelit S.p.A.	3.28%
Sequenza S.p.A.	3.37%
Telecom Italia S.p.A.	11.09%
Tiscali Italia S.p.A.	2.25%
Tiscali Financial Services SA	1.12%
Utility Line Italia S.r.l.	3.98%
Vodafone Enterprise Italy S.r.l.	2.25%
WindTre S.p.A.	9.97%

#### **BOARD**



**Alessandro Talotta**Executive President and Chairman



**Vittorio Figini** Utility Line Italia



Francesco Castelli



**Marco Fiorentino** A.I.I.P.



**Giudo Garrone** Eolo



**Andrea Giovanardi** BT Italia



**Roberto Loro** Dedagroup



**Luca Orabona** ITNet



**Andrea Podda** Tiscali



**Giulio Signorelli** Wind Tre



Ruggero Slongo Retelit

#### **PEERING CREW**



Mauro Magrassi Chief Technical Officer



**Gabriel Ramini** IT Manager



.....

Simone Morandini Service Development Manager



Michele Perrucci DC Manager



TECHNICAL AREA

Gianmarco Clerici Network & Security Manager



**Gaetano Tomasi** 



Leonardo Schiavini



Stefano Genovese NOC



Luca Rubino



Cristiano Zanforlin Chief Commercial Officer



Daniela Cipriani Marketing & Communications Mgr



Martina Mordà Account Manager



Ester Balzarotti Marketing Communications Specialist



SALES & MARKETING

Claudio Zucchetti Inside Sales



Monica Arensi General Secretary & Administration Mgr



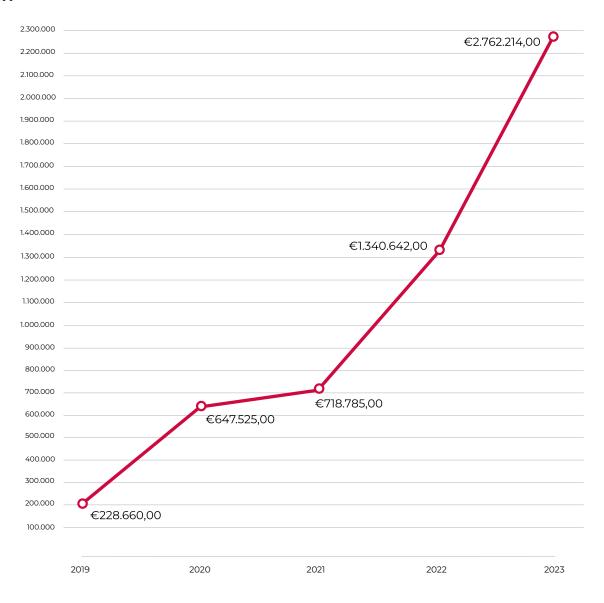
Giovanni Verzotti Accountant



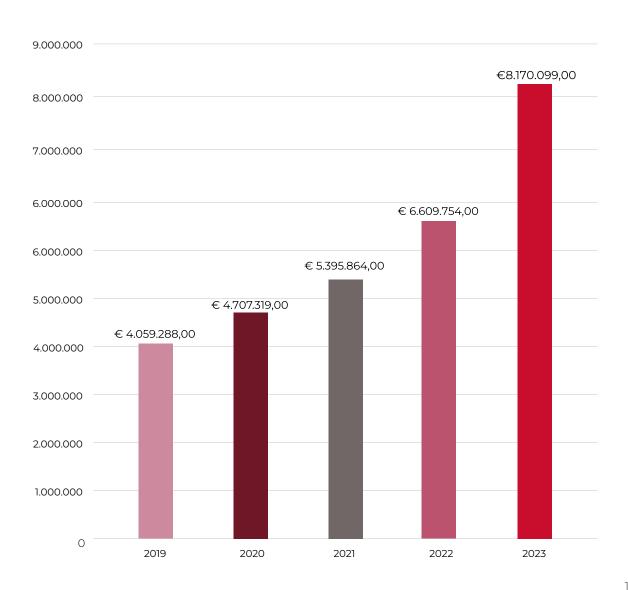
Giorgia Montano General Secretary & Administration Assistant

#### **FINANCIAL RESULTS**

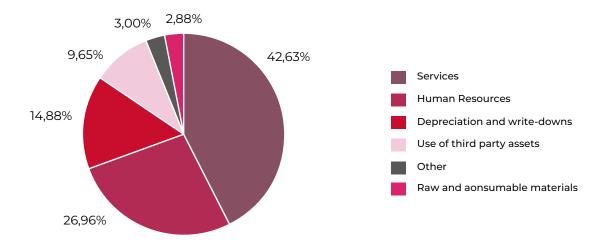
#### **EBIT**



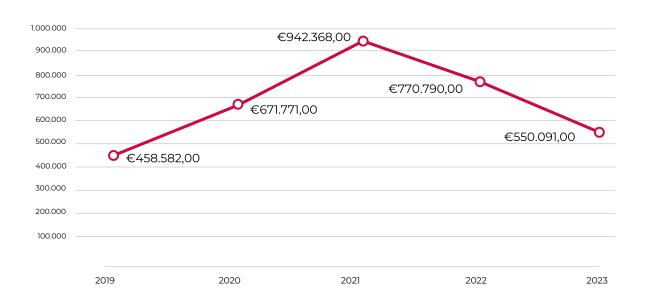
#### **EARNINGS**



#### **COSTS**



#### **INVESTMENTS**



## KEY FACTS 2023

# MIX STRENGTHENS THE ELECTRICAL CONTINUITY SYSTEM, FOR UNPRECEDENTED RELIABILITY

The leading Italian Internet Exchange confirms its commitment to ensuring the highest quality and availability of its services for the interconnection of Internet networks in Italy.

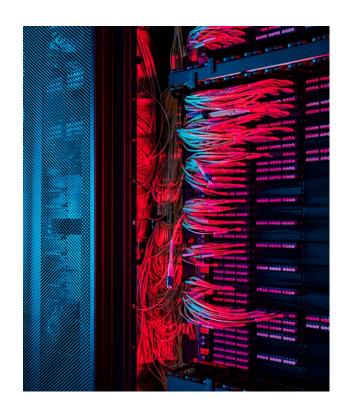
MIX, the main Italian Internet Exchange, announces that it has raised the reliability of the electrical continuity system of its data centres to the 2N level.

This result was obtained by preparing a second MV/LV transformer cabin. The project, launched in mid-2022, was divided into various phases. After an initial feasibility study, a preliminary plan was drawn up for the identification and creation of technical spaces and systems for supplying the new section. This was followed by an executive project, which required the integration of mechanical, electrical and IT aspects. With the testing completed in recent days, the new booth is now fully operational.

In the past, generator sets and UPS systems had already been integrated to a level 2N redundancy degree. With the activation of the second cabin, all components of the MIX data room energy supply system have a backup twin.

Alessandro Talotta, Executive Chairman and President of MIX, comments: "This investment demonstrates MIX's commitment to being the reference partner of TLC operators for interconnection services in Italy, offering a connectivity platform compliant with the highest

technical standards of reliability and safety, already ISO 27001 and OPEN-IX OIX-1 certified"



# ISLALINK PARTNERS WITH MIX TO DEPLOY IN MILAN THE FIRST POP OF THE IONIAN SUBSEA CABLE

Islalink, an independent and neutral fibre-optic infrastructure provider, headquartered in Madrid, Spain, announced that the mainland PoP of their new subsea cable "IONIAN" is up & running in Milan in the MIX Carrier Hotel based in the historical Italian telco campus Caldera Park, the area with the highest concentration of data centers in Italy, where MIX is based since 2000.

MIX, the main public Internet exchange point in Italy, was selected by Islalink to deploy the WDM PoP that provides telecommunication services between Italy and Greece, reaching Athens & Thessaloniki, through a new, stat-of-the-art transmission system, on a totally diverse, secure and robust route.

"We are very proud of having been selected by Islalink to host the first Italian PoP in the mainland confirming the role of MIX as the main Internet interconnection hub." said Alessandro Talotta, CEO of MIX. "With the IONIAN Submarine System terminated in our Carrier Hotel, we are happy to add significant value to our customers and members. The chance for many networks, based in Italy and Greece but not only, to be connected through this new high-performance fiber route is a great opportunity of development for both countries. Our recent announcement of two new IX PoPs in Rome and Caserta will certainly benefit of this partnership.

Esther Garcés, CEO of Islalink, concludes that "Having MIX as a partner is key for the

IONIAN project: MIX PoP is the most significant interconnection point in Milan, bringing together carriers, OTTs and providers from Italy and abroad. Enabling MIX as a service PoP for IONIAN is a natural step for providing our services to the market. On top of that, MIX strong expertise in colocation and service delivery, give us a lot of confidence in such a challenging endeavor. We are very confident that IONIAN will bring diversity and service quality for networks looking to interconnect between Italy – Greece and beyond".



# MIX WILL OPEN IN DATAFELIX THE FIRST NODE OF A LOCAL INTERNET EXCHANGE DEDICATED TO CAMPANIA: MIX CASERTA

A local public peering point will soon be operative in DataFelix's new data center, which will be combined with the remoting of MIX Milano with the 380-plus networks already in place.

MIX, the leading public Internet Exchange point in Italy, and Data Felix, a new neutral data center located in Caserta, announce that they have signed a collaboration agreement to start up the new MIX Caserta regional Exchange point.

The data center, designed and built to high industry standards, will host a new Internet Exchange aimed at developing regional traffic: MIX-IT Caserta. This will also be accompanied

by the remoting of MIX-IT, which with its nearly 400 connected ASs will be able to support local networks in their growth path. The data center is located in the heart of an industrial district suitable for hosting technological facilities, but most of all it insists on a territorial basin with more than 4 million users within a radius of a few kilometers.

Security, resilience, reduced latency, and service



offerings to meet all interconnection needs make Data Felix DF01 an optimal host solution for MIX's new PoP.

In the new PoP in Caserta, the Milan LAN will also be available, dedicated mostly to small operators who will thus be able to connect immediately with more than 380 networks in Milan today, in addition to those that will interconnect to the local IX over time.

"Data Felix is a significant step forward for the digital ecosystem in Southern Italy," explained Francesco Taurino, project creator and CTO of the company. "With our wide range of services and thanks to this advanced infrastructure, we are ready to welcome companies, IT partners and operators, providing them with a secure, reliable and high-performance environment for their colocation, data processing and cloud services needs. And by working closely with MIX and enabling local POP we will help raise the standards of speed and resilience of Internet connections in the South."

"The opening of our first regional IX in Campania, thanks to the partnership with DataFelix, shows MIX's concrete commitment to fostering the development of edge traffic in Italy, in line with what has been established by our Board," said Cristiano Zanforlin, Chief Commercial Officer of MIX. "We believe that this is an essential element to face the digital challenges of the coming years. These are paths that take time and MIX is ready to do its part, also by supporting territorial initiatives, such as this one of Data Felix, that have the ambition to become points

of concentration of networks connected to the main optical backbones. We follow with great interest the evolution of similar projects in the area."



#### MIX MAKES ENERGY PROCUREMENT MORE EFFICIENT AND SIGNS A POWER PURCHASE AGREEMENT (PPA) FOR THE PURCHASE OF SOLAR ENERGY FROM MET ENERGIA ITALIA

The agreement entails the commercialization, by MET Energia, of the entire energy production of the Sicilian solar plant Mirto Solarpark.

MIX S.r.l., a leading Internet Exchange Point (IXP) in Italy and a provider of interconnection services for Internet traffic exchange among operators, has laid the foundation for optimising its energy procurement process. The company has indeed entered into a five-year Corporate Power Purchase Agreement (CPPA) with Solarpack Mirto, a producer whose renewable energy production from photovoltaic sources in Sicily is withdrawn and dispatched by MET Energia Italia S.p.A.

Starting from July 1 of this year, all the energy produced by the Sicilian photovoltaic park, through MET Energia Italia, is fed into the grid and purchased by MIX. This energy offsets the consumption of the data center located in Caldera Park, the site of the public Internet peering.

The operation was coordinated by Spinergy, a long-standing consultancy firm in the field of portfolio management and energy cost optimization for industrial clients.

"The increase in energy costs recorded in 2022 has had significant repercussions on a highly energy-intensive sector such as telecommunications, where we operate, to the extent that it has necessitated a complete paradigm shift.

For MIX, it is no longer sufficient to choose the best supplier: sustainability, efficiency, awareness, and transparency are the criteria that inspire our new approach to managing energy procurement" said Alessandro Talotta, Executive President & Chairman MIX

With this operation, MIX demonstrates its commitment to implementing a strategy that aims to achieve more efficient energy procurement processes for the benefit of the entire Telco sector.



#### MIX OPENS IN ROME: MORE THAN 270 NETWORKS FROM THE MILANESE IXP NOW AVAILABLE IN CLOUD EUROPE

In the new local public peering point, medium to small-sized ISPs will have the opportunity to enhance the redundancy of their network while staying in Rome. At the same time, large content providers will be able to physically diversify the peering node in the Capital.

MIX, Italy's Leading Interconnection Platform based in Milan, and Cloud Europe, a Tier IV certified carrier-neutral data centre located in Rome's Tecnopolo Tiburtino, announce the finalization of a partnership agreement for the development of the digital market in the Capital. Since November 29, Cloud Europe's data center hosts MIX-Rome, the first node of the MIX local peering platform dedicated to the ecosystem of Central Italy. It plays a key role in a rapidly growing process expected to further develop, supported by the anticipated data volume from data centers and submarine cables currently under construction. MIX-Rome responds to the operators' need for a dedicated platform to increase system resilience and manage the significant amounts of traffic coming from Cloud Europe today and, in the future, from the upcoming data centers.

The new local Internet Exchange is accompanied by the remote extension of MIX-Milan's LAN reserved for ISPs not yet connected to MIX and wishing to peer with the over 270 networks currently not present in Rome. Cloud Europe is pleased to host MIX within the Green Data Center TIER IV Carrier independent, at Technopole

Tiburtino, developed within its campus of over 60,000 square meters, representing an ideal solution for business continuity and one of the country's main technological hubs.

"The symbiotic development between Internet Exchange and Carrier-Neutral Data Center, always a mantra for us, has become a cornerstone of



digital infrastructure in all countries. Cloud Europe has been operating a Data Center in Rome since 2010: there has been immediate harmony, and for MIX, it represents the ideal partner to form a cooperative alliance and support sector growth. We have just started, but from the excitement that has arisen in recent months in Rome, we are confident we are heading in the right direction," said Cristiano Zanforlin, Chief Commercial Officer of MIX.

"The Green Data Center Cloud Europe has been designed and built with the goal of ensuring low environmental impact sustainability through the purchase of energy from renewable sources. Several customers, hyperscalers, banks, system integrators, and streaming platforms have chosen Cloud Europe for its specific configuration and proximity to end-users in Central Italy," reported Giulio lucci, CEO of Cloud Europe.

Today, the Roman Data Center represents the main interchange point for national and international telecommunications operators in Central Italy.



TRAFFIC PEAK

Record on March. 15, during the evening Serie A soccer matches.

2.372 Tb/s

**CONNECTED CAPACITY** 

+ 11% in less than 12 months

# **EVENTS** 2023



#### **SALOTTINO - 2 MAGGIO**

On 2 May 2023, the first edition of MIX Salottino took place.

Max Stucchi discussed the issues of Network Monitoring and Telemetry with PMACCT, and Riccardo Burrai, CTO of Sirius Technology, presented the OpenAccess project. The event was attended by over 100 participants.

#### Agenda:

- "Network Monitoring e Telemetry con PMACCT, una introduzione" – Massimiliano Stucchi and Paolo Lucente
- "OpenAccess, la rete aperta fatta dai piccoli operatori" – Riccardo Burrai



#### **6LOTTINO - 5 LUGLIO**

On 5 July 2023 from 3.00 pm to 5.00 pm the third edition of 6lottino, powered by MIX took placeto take stock of the implementation of IPv6 in Italy iith leading national experts

The event was followed by over 80 participants.

#### Agenda:

- "Numeri e statistiche su IPv6 nei principali 4 IXP italiani. A che punto siamo?" – Flavio Luciani and Simone Morandini
- "Introduzione di IPv6 sui servizi Mobile Broadband e VoLTE di Wind Tre e Verymobile"
  Oronzo Barbati, Massimiliano Mattioli and Mario Niro
- "SRv6 nella pratica" Marco and Federico Paesani

#### **SALOTTO 2023**

## MIX SALOTTO: More than 400 Telco companies to discuss the country's digital future

- DSeventeenth annual event of MIX, Milan Internet eXchang;
- Connectivity, digital transformation and Pnrr projects were the main topics of discussion at the two-day event;
- Talotta, MIX president: "Unique moment to talk about innovation and the future."

A moment of discussion between institutions and industry on issues related to the country's digital development. This was the main aim of the 17th edition of the Salotto, the annual event of MIX - Milan Internet eXchange, held on November 14 and 15 at Allianz MiCo in Milan. During the most well-attended edition ever, more than 1,000 Telco operators representing more than 400 companies





in the sector discussed some of the current issues for the sector, such as infrastructure, cloud and an important focus on education..

To open the two days, Alessandro Talotta, MIX Executive President & Chairman, had outlined the goals and central themes of the discussion, with a particular emphasis on the importance of connectivity, digital transformation, and projects related to the National Recovery and Resilience Plan (NRRP).

"The Salotto 2023 edition was a chance to talk about innovation and future. As MIX we are very happy with the outcome both in terms of participation and content.

Participants had the opportunity to discuss about technology and sustainability. It was an important

moment to face the coming months with greater awareness and commitment." - emphasizes
Alessandro Talotta, Executive President & Chairman MIX. Among the news of 2023, the education section, aimed at secondary school students with an IT address, to encourage the connection between the world of school and work, and the one dedicated to the associations of Telco world, to offer participating companies an opportunity for direct contact.

A central theme is also sustainability, on which Telco operators have been paying attention since many years. From reducing energy consumption to create sustainable datacenters, to using renewable energy and carefully disposing of waste, these are the best practices of a sustainable datacenter. There were two discussion panels between institutions and the TELCO industry. "Broadband Everywhere," moderated by Enrico Pagliarini of Radio 24/II Sole 24 Ore, which was attended by Giorgio Bergesio, Vice President of 9th Industry Committee of Senato, Maria Teresa Ferrigno, EVP Wholesale Market, Guido Garrone, CEO Eolo. Stefano Mazzitelli. Business Market Manager Open Fiber, Giulia Pastorella, Vice President Azione and digital expert, Daniele Peli, CEO Intred and Giovanni Zorzoni, AIIP President, and "Sustainability" moderated by Layla Pavone, Entrepreneur Expert in Digital and Technological Innovation - University Professor - Honorary President IAB Italy, which was attended by Jorge Álvarez, CEO Retelit, Federico Mollicone, President of the Culture Commission of the Chamber of Deputies and member of the Innovation Intergroup, Alessandro Morelli, Undersecretary at DIPE, Francesca Petriacci, TIM Chief Network, Operations & Wholesale Office Operations Area Centro and Sherif Rizkalla, CEO Italy & Switzerland Stack Emea. As usual, technical roundtables were held in the afternoon of both days.

The more than 1,000 attendees at Salotto 2023 had the opportunity to visit the booths of sponsoring companies and participate in a rich session of hundreds of one-on-one meetings. The Salotto, was again confirmed for 2023 as the B2B reference event for the sector professionals.



















#### MIX'COOL

Started in 2012, the MIX'COOL program is an informative meeting aimed at secondary school students. The meetings are held at the MIX datacentre or as an interactive online session bringing youth closer to the reality of an Internet Exchange Point (IXPs) and the importance of IXPs in exchanging and moving data over the Internet infrastructure.

In 2023, more than **550 students** and teachers from **12 schools** took part in the program.



For the fourth year in a row, MIX sponsored and participated in the Internet Festival project, an annual event dedicated to the exploration and divulgation of the Internet, technology and digital culture, with two informative talks on the data center reality.



#### **EVENTS**



































