This presentation explains the following topics:

- Network capabilities
- IT Products and Services catalog
- FAQ
  - About the WifiNetwork
  - About the Digital Assets
  - About other customer experiences
WiFi Network Capacity
128,000 Concurrent Users

INTERNET
Throughput 40Gb/s
(20 Gb/s in HA configuration)

Cabling Capacity
16,000 available ports
Network Overview

4 X MPLS CORES IN VSS HIGH AVAILABILITY

Autonomous System
10 x /24 IPv4 Public IPs and /29 IPv6

Network Capabilities

3 LAYERS

CORE

Internet Colt

Internet Verizon

10 Gb/s

FIRA MPLS CORE in VSS
(4 data Centers)

20 Gb/s

10 Gb/s

DISTRIBUTION

Distribution Layer
Cisco catalyst 65xx & 2x 9500X
in stackwise HA

ACCESS

South Entrance Hall1 Hall2 Hall3 Hall4 Hall5 Hall6 Hall7 Hall8

2-20 Gb/s

Cisco Catalyst 9300

2-20 Gb/s
Network Capabilities

Wifi Network

Internet Colt

10 Gb/s

FIRA MPLS CORE (CISCO VSS DESIGN)

2x Cisco 8540 HA Wireless Controllers

PoE Access Switch

Internet Cogent

10 Gb/s

2x Cisco 8510 HA Wireless Controllers

MANAGEMENT TOOLS

· Cisco Prime 3.5
· CISCO Dna Center
· CISCO Dna Spaces / CMX

1700 Cisco Access Points (1530 wifi5 802.11ac) and 170 new wifi6 802.11ax
The network has 1700 APs, approximately one every 250sqm, covering all exhibition and hotspot areas.
There are 7 families available within our range of products:

**Cable**
- Network Cabling CAT6 (exhibitor, organization, venue)
- Network Cabling Optical Fibre (cabling and power certification)
- Phone Cabling
- Cable Tagging
- Corridors Cable Patching
- Cabling and Material Collection after the show

**WiFi**
- Private Network (SSID linked to the wired service)
- WaaS (WiFi as a Service for the whole venue with specific services)
- Customized landing pages (HTML, authentication, reporting, final documentation)
- WiFi Radio Planning and Customized Solutions and Designs
- PreSharedKey, 802.1x, landing page and Openroaming/passpoint authentication
- Rogue Access Points management tool

**Clean Pipes Security Service**
- baseline
- Advance
- Tailor made

**Voice /Telephone Service**
- Installation support for POS terminals and ISDN lines
- Supply and Installation of Analog, Digital and IP Phones
Product Families

Internet Advanced Services
- ISP Backhaul management
- High Level Support to Fira’s providers for QoS, audiovisual streaming...
- UPS Secured Power Lines
- Consultancy for specific requests

Management Services
- Project Management
- Show/Event Whitepapers
- Monitoring Tools: customized dashboards to monitor services
- Specific Tools Design and Development (CRM, Provisioning, Ticketing, Tracking...)

Other Professional Services
- Custom Call Centers / Call Campaigns Management
- Support to Attendees:
  - Frontdesk
  - Call Center
  - Field Technicians
  - WiFi On-Site Regulation Team

- Product Catalog Customization
- Communication Policy Management for each Show
- IT Policy Definition
Service Figures:
• **30516 Concurrent Wi-Fi Connections 2015 (World Record!!)**
• 5,000 Wired Connections 2019
• 40,000 Mbps Aggregated Throughput to Internet 2019
• 96449 unique devices 2016
• Total data exchanged Internet(TB) 124.5 Tbytes 2019
Wi-Fi

What bands are supported?
· The new network supports the bands defined in standards 802.11 a/g/n/ac/ax (wifi6)

Venue bandwidth and potential allocation to the show/event:
· Currently the venue has a backhaul of 20 Gbps per Hall and the whole venue is connected to 2 x Internet Services Providers (10 Gbps Colt and 10 Gbps Verizon).
· A higher bandwidth could be provided if required
· The access network supports up to 300-400 Mbps per access point in 5 Ghz radio (each AP has a 2,4 GHz radio and a 5 GHz radio) in ideal conditions (no interferences, short distance to AP, uniform distribution of client devices). The number of permanent APs per Hall is as follows:

<table>
<thead>
<tr>
<th>Hall 1: 56 APs</th>
<th>Hall 6: 61 Aps</th>
<th>HotSpot Areas: 350APs in Restaurants, Convention Centers, Walk-Way, Outdoor Spaces, Offices...</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hall 2 + EMR: 195 APs</td>
<td>Hall 7: 53 APs</td>
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<tr>
<td>Hall 3: 157 APs</td>
<td>Hall 8: 121 APs</td>
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<tr>
<td>Hall 4: 63 APs</td>
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<tr>
<td>Hall 5: 50 APs</td>
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</tbody>
</table>
Ability to monitor and control usage – e.g. can we slow down people watching sports while at the show using wifi bandwidth?

Our network can be tuned to achieve the desired requirements, allowing many filter options such as:

· Application / Protocol based filters

· Bandwidth control per user / application

· Traffic Shaping, Firewalling...

Do they have any best practice guidelines for exhibitors?

In most shows exhibitors are not allowed to use their own WiFi APs and they are encouraged to use the venue’s network services in 5 GHz. The WiFi policy was distributed among all exhibitors.
Can Fira provide a heat mapping solution or provide support for it?

A number of monitoring tools is available for Fira to assure the quality of the services. Some of these tools can be made visible for customers that require such a piece of information.
Smart Services

The GSMA Mobile App
Transforming the Event Experience!
Other Initiatives

Smart Services - Mapping

3D MAP
Includes most important references of the environment
More than 250 Points of Interest
Geolocalization
Navigation
Time Calculation
**Smart Services - Badge**

Automatic picture validation for registration
Paperless: Final Confirmation with QR code
Upgrade options within the app
Other Initiatives

Smart Services - Food

Restaurants classified by type of food
Queue time Information and Evolution
12 restaurants with pre-order capability
Map integration: route to restaurant and time for arrival
Capture contacts with your Smartphone
And make the most out of them

Leadretrieval is available for:

Get it now!

Manage your surveys and information groups
Export your leads
Activity Reporting
Information regarding 12 transport points (taxi, bus, train)
TAXI and train wait times and evolution
Integration with maps: route and time for arrival calculation