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# Tips & Tools to secure your connection

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Enhance your connectivity through  
our future proof technology and  
state-of-the-art infrastructure

**rai**  
AMSTERDAM

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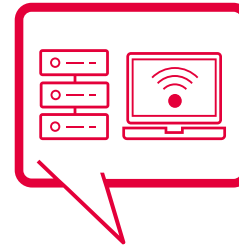
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## Why this Tips & Tools handbook?

This publication provides you with essential information so you know what to expect when you acquire our IT services or incorporate RAI infrastructure into your existing environments.

It explains our own environment and the connection possibilities we provide, not third-party systems or applications that can be connected to our network. As you will understand, you are responsible for determining whether your solutions are compatible with our environment.

# 01

## INTRO

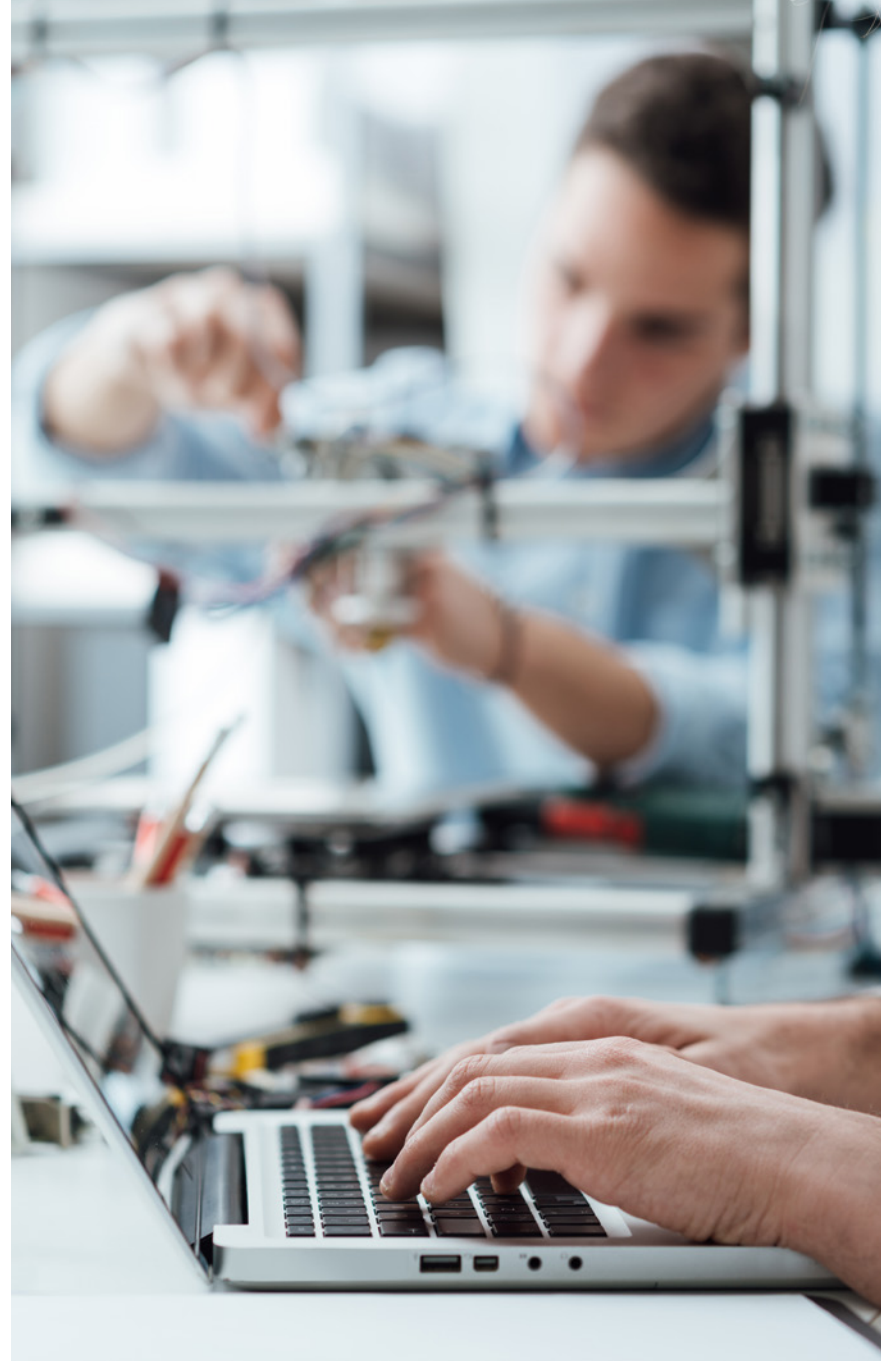
**'RAI Amsterdam's  
state-of-the-art network  
enables super-fast data  
traffic during your event.'**



## We take care of your connection

Thousands of people make use of internet and telephone connections during exhibitions and conventions at RAI Amsterdam.

In this day and age, a reliable connection is essential for your visitors and exhibitors alike. Our high-quality network technology enables you to effectively deal with the large streams of data involved and guarantees you the best possible connection at all times.



# 02

## THE RAI NETWORK

### RAI Network overview

The RAI network forms the core of all our cable and Wi-Fi services. Based entirely on Cisco equipment, it provides all the benefits of a single-manufacturer architecture. This architecture is based on Cisco StackWise Virtual and VRF.

The baseline of the network is a redundant internet connection, with the Dutch telecommunications company NL-iX as the main network provider. The total internet capacity is 12 Gb/s. The active/passive failover lasts between 5 and 10 seconds.

### Network specifications

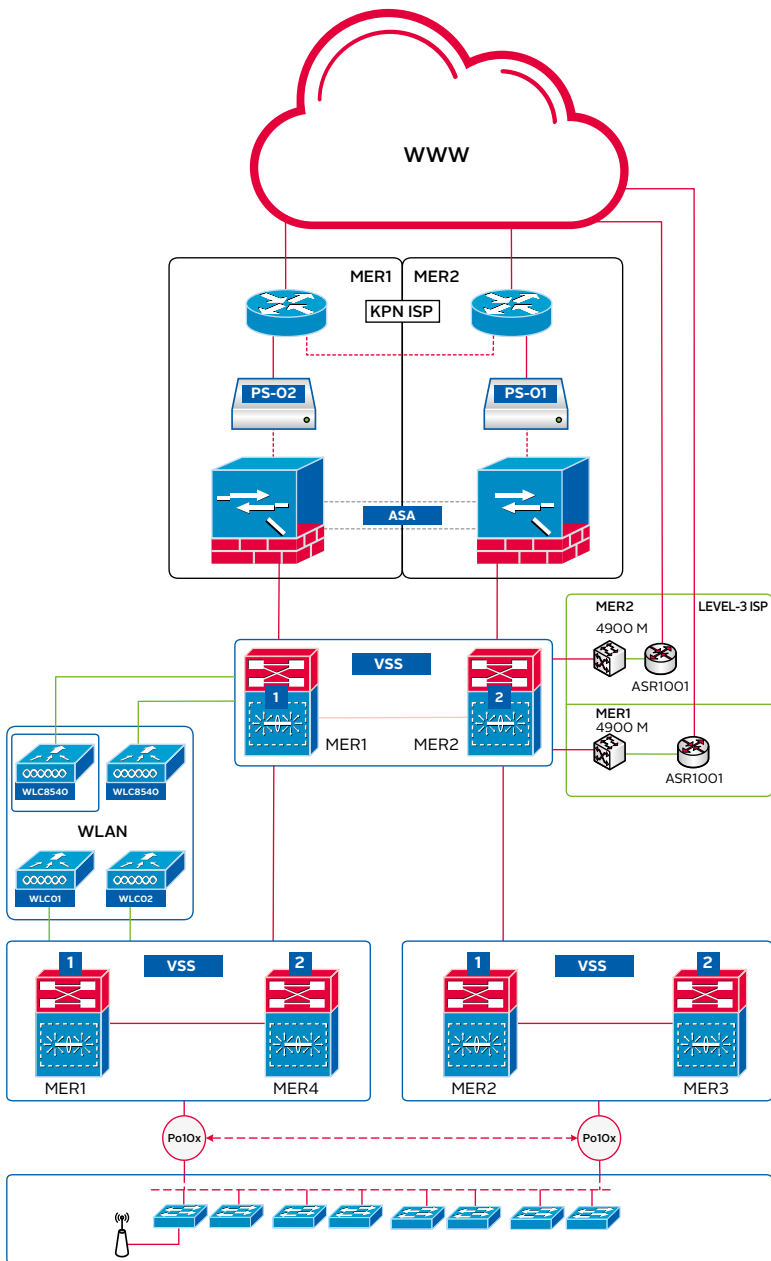
The figure below shows the RAI network. The routers of the internet provider are followed by the firewalls, packet shapers, more firewalls and finally the core switches. These core switches manage the distribution switch to which the edge switches are connected. The copper drops are delivered to the expo area via the edge switches.



The network is monitored 24/7 via a Network Operation Centre.

| ITEM          | BRAND    | TYPE    |
|---------------|----------|---------|
| ISP router    | Cisco    | ASR1000 |
| Firewall      | Cisco    | ASA5585 |
| Packet shaper | Bluecoat | S500    |
| Core switch   | Cisco    | 9500    |
| Switch        | Cisco    | 9600    |
| Edge switch   | Cisco    | 3850    |

Within the RAI network, each user receives a private VLAN connection with corresponding ID, dedicated bandwidth and 250 private IP addresses based on a 10-number range with a subnet mask of 255.255.255.0 and a gateway. The first 14 addresses are static; the rest are dynamic based on DHCP. Each private VLAN has its own public IP address. Bandwidths from 1Mbps/s to 1 Gb/s are available. In addition, we also provide VLAN connections with public instead of private IP addresses. Spanning tree protocols, trunking and VLAN ID exchanges are not supported at switch level. If incorrect protocols are used, the switch port will be blocked.



Besides the internet access service, the network also allows two or more random locations to be connected directly, a solution referred to as a transparent VLAN. This always runs via one or more RAI network switches and has a maximum speed of 1Gb/s.

### Specifics of the RAI network

| DESCRIPTION*   | AVAILABLE UPON REQUEST |
|--|------------------------|
| Routing between VLANs                                      | Yes                    |
| Switches provide PoE                                       | No                     |
| The use of trunks  | Yes                    |
| The use of a proxy   | No                     |
| Redundant connection of your own switch to the RAI network | No                     |

\* These are the most commonly requested items. If in doubt, please contact the Eventnet helpdesk.

### RAI network connectivity specifications

| HARDWARE         | DESCRIPTION  |
|------------------|--|
| Switch port      | 1 Gb/s auto negotiating full duplex, MTU 1500              |
| Copper drop      | CAT5E max 90 m RJ 45 male max 1 Gb/s                       |
| Fibre optic drop | Single mode, SC, max 1 Gb/s internet, max 10 Gb/s internal |

# The RAI Network Tips & Tricks



Check in advance whether the hardware you wish to connect is compatible with the system. If in doubt, check with us.

Place your order in time and make sure you've chosen sufficient bandwidth. Bandwidth is capped at the level ordered: if you try to use more, the connection will become very slow.

For applications other than internet browsing and email, like navigation, Skype, VPN, streaming video and audio etc., please contact us directly.

Don't wait until the last minute to test that everything works correctly: give our support department time to provide help if necessary.

If you wish to set up a proxy server, get in touch with us directly.

# 03

## THE WI-FI ENVIRONMENT

### Wi-Fi environment overview

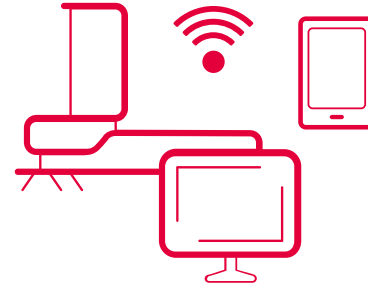
RAI Amsterdam has several Wi-Fi networks that provide wireless internet access. We have a large number of access points positioned throughout the venue to provide coverage in all relevant areas.

Wi-Fi needs and capacity vary depending on the event. We therefore offer two types of networks: Regular Wi-Fi based on standard infrastructure and High Capacity Wi-Fi based on a combination of existing infrastructure and additional access points. Wi-Fi during a given event can be a mix of both, depending on the specifics involved.

### Wi-Fi specifications

#### Regular Wi-Fi

This Wi-Fi system is based on Cisco infrastructure and features two redundant Wi-Fi controllers. The controllers manage the access point via the RAI network and are connected to Cisco switches via 1 Gb/s connections.



### Regular Wi-Fi access points used

| TYPE         | CLEAN | BAND      | BANDWIDTH |
|--------------|-------|-----------|-----------|
| AIR-AP2802E  | Y     | g; a; ac  | 1 Gb/s    |
| AIR-CAP3702  | Y     | g; a; ac  | 1 Gb/s    |
| CAT9120 / 30 | Y     | g; ac; ax | 1 Gb/s    |

The standard Wi-Fi solutions offer you a private (10-number) IP address via DHCP. Your device must be compatible for this and no proxy server should be defined.

#### High Capacity Wi-Fi

If the Regular Wi-Fi capacity needs to be expanded, additional Cisco infrastructure can be added to come to a tailor made solution. Expanded Wi-Fi networks behave as a single network as the entire infrastructure is based on Cisco. It is centrally managed.

# Wi-Fi Tips & Tricks



Ensure that the application has been thoroughly tested.

Ensure that you have the latest Wi-Fi drivers installed on your system.

If in doubt, consult us and/or use the testing facilities.

Take precautions so that you are not solely reliant on Wi-Fi.

Use a cable connection for critical applications.

Remember that Wi-Fi solutions have no QoS.

Note that peer-to-peer traffic is by default not possible.

Make sure you are not relying on very high bandwidths via Wi-Fi, even though the access points support up to 1Gb/s.

Do not assume that public services such as GSM and UMTS will work flawlessly. While the RAI does everything we can to ensure that these services are optimal in terms of capacity and quality, we do remain reliant on third parties in this respect.

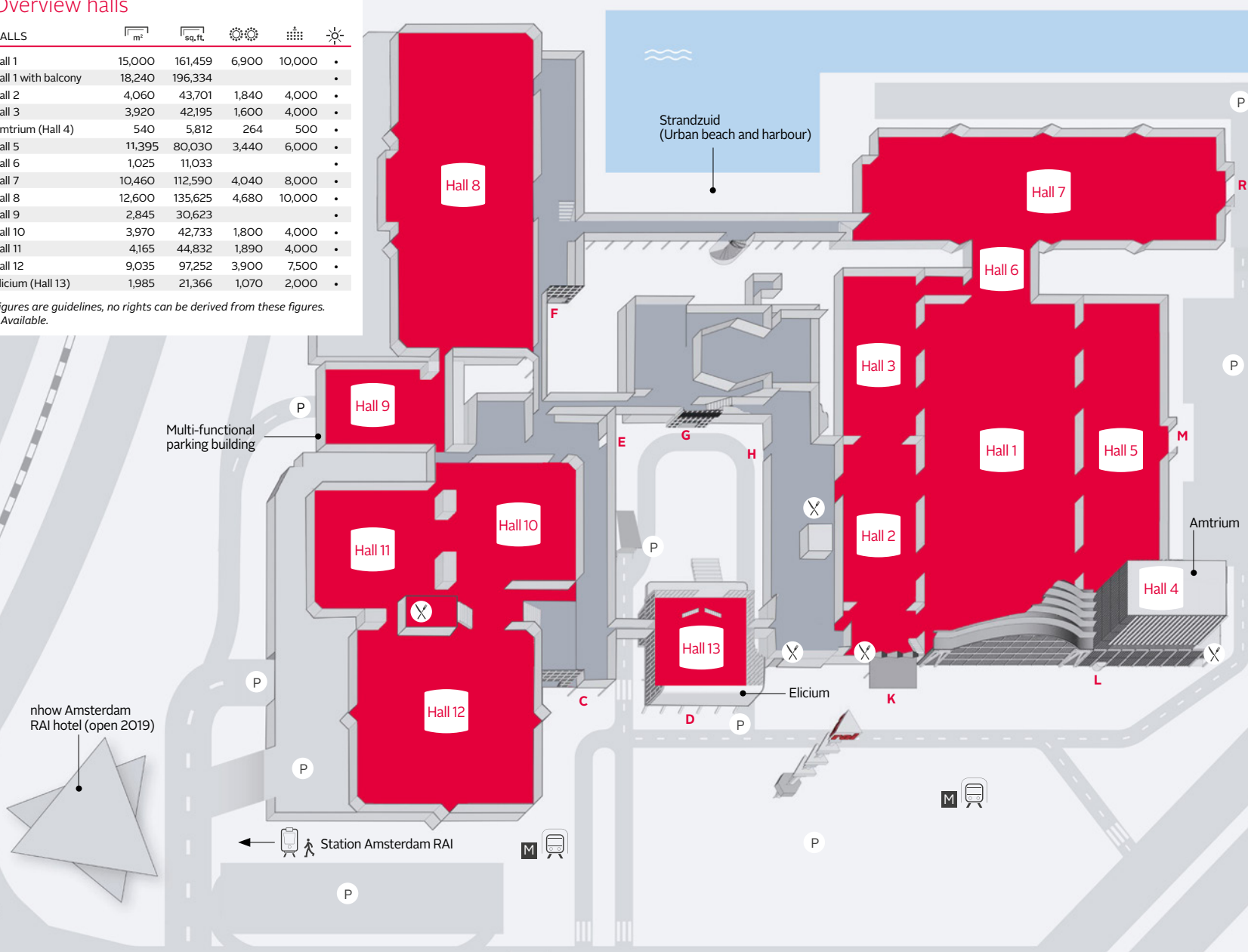
Wi-Fi signals cannot be confined to a particular space. SSIDs are visible throughout most of the RAI.



# Overview halls

| HALLS               | m <sup>2</sup> | sq.ft.  | ⚙️    | 🏠      | ☀️ |
|---------------------|----------------|---------|-------|--------|----|
| Hall 1              | 15,000         | 161,459 | 6,900 | 10,000 | •  |
| Hall 1 with balcony | 18,240         | 196,334 |       |        |    |
| Hall 2              | 4,060          | 43,701  | 1,840 | 4,000  | •  |
| Hall 3              | 3,920          | 42,195  | 1,600 | 4,000  | •  |
| Amtrium (Hall 4)    | 540            | 5,812   | 264   | 500    | •  |
| Hall 5              | 11,395         | 80,030  | 3,440 | 6,000  | •  |
| Hall 6              | 1,025          | 11,033  |       |        | •  |
| Hall 7              | 10,460         | 112,590 | 4,040 | 8,000  | •  |
| Hall 8              | 12,600         | 135,625 | 4,680 | 10,000 | •  |
| Hall 9              | 2,845          | 30,623  |       |        | •  |
| Hall 10             | 3,970          | 42,733  | 1,800 | 4,000  | •  |
| Hall 11             | 4,165          | 44,832  | 1,890 | 4,000  | •  |
| Hall 12             | 9,035          | 97,252  | 3,900 | 7,500  | •  |
| Elicium (Hall 13)   | 1,985          | 21,366  | 1,070 | 2,000  | •  |

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 • Available.





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