

# Information regarding ICT infrastructure

at World Conference Center Bonn



## Connection

The **World Conference Center Bonn (WorldCCBonn)** is connected to the internet via several high-performing optical fiber access lines provided by Deutsche Telekom AG/T-Systems International GmbH. The **bandwidth of the main connection** for events is **1,000 megabit/s (1 Gbit/s)**. Also providing a transfer rate of 1,000 Megabit/s, there is a second independent connection that is fed into the network through a **separate building entry point**. This second connection is used by the operating company and some of the tenants and provides infrastructural connectivity. As required, connections with a **guaranteed bandwidth** may be set up via this second connection, independently of the main connection. Both connections work in synchronous mode, i.e. the uplink and downlink bandwidths are the same. This type of connection does not compare to the rather modest performance of a standard domestic-use internet connection, even though A-DSL

connections and broadband cable connections (via cable TV) with 100+ megabit/s are available for private customers. Such connections for domestic users are usually heavily bundled, and it is not uncommon to use low-performance copper lines for transmission on the last mile. However, the connections at the WorldCCBonn are "much closer" to the German backbone. Subject to availability, the bandwidths of the connections are adjusted at irregular intervals. This was done last in October 2019 (technological upgrade and bandwidth adjustment to 2 x 1 Gbit/s). Upon request, we shall be glad to inform you about any bandwidth adjustments scheduled for the time of your event.

As a third independent internet connection we have a **500 Mbit/s** connection installed at the **Boarding House Heussallee**, implemented by NetCologne Gesellschaft für Telekommunikation mbH.

## Infrastructure / basic service

The user has access to all regular services such as HTTP (**World Wide Web**), HTTPS (protected connection), SMTP (**e-mail**) or VPN (tunneled connection). A **firewall** is used on the event network exclusively for routing purposes. Naturally, the router uses NAT (network address translation). We offer a DHCP service to generate dynamic IP addresses automatically and other settings within the usual scope. We use several logically separate networks (**V-LANs**) as to separate traffic of different events taking place simultaneously. If you need a separate IP subrange or wish to exclude or include a particular address range

(e.g. to enable VPN), do not hesitate to contact us. In order to ensure an even distribution of bandwidths, we can apply traffic shaping. The maximum capacity of the main connection is distributed to all clients connected at the same time, whether cable-bound or wireless. We also offer additional dedicated V-LANs with individual network configurations and bandwidths. It is furthermore possible to integrate your own equipment. To that end, we provide secured server racks in rooms with air-conditioning and video surveillance that you may access independently on a 24/7 basis.

## Infrastructure / wired connections in the main building

All event areas and offices within the main building are equipped with wired copper network connections supplying gigabit<sup>1</sup> connections on layer-3 switches. They are made available as CAT 6 ports at all connection points. In addition, at many connection points there are optical

fiber connections (SC multimode) to the backbone of the premises of the WorldCCBonn (main building, plenary building, boarding house at Heussallee and parking garage). It is possible to have pure dark fiber or "dark copper" connections.

*1] In exceptional cases, fast ethernet might be available temporarily on layer-2 switches only.*

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## Infrastructure / wired connections in the plenary building

All event areas and offices within the plenary building are equipped with wired network connections. Since the ethernet network topology foresees a maximum segment length of 100 meters of copper cable, the infrastructure in the plenary building is based on multimode fiber optical cable.

In addition, at many outlets these are available as ST or SC connectors. Furthermore, at all outlets there are layer-3 switches with gigabit<sup>2</sup> connections to the backbone of the premises of the WorldCCBonn. Purely passive dark fiber connections are possible.

## Infrastructure / wireless LAN (wi-fi)

Since the wireless LAN technology is merely a conversion of the wired network into radio transmission, the same requirements as mentioned above do apply. All event premises and offices at WorldCCBonn are equipped with WLAN technology in line with standard usage of the premises. In view of the physical limits of radio wave transmission, availability and quality of wireless connections cannot be guaranteed and should not be used for important stationary applications for your event. Depending on the distance to the base station and the number of co-users (clients per radio), bandwidth and quality of transmission vary greatly. **As a matter of principle, we recommend wired connections!**

Our base stations provide wireless LAN according to international standards **IEEE 802.11 A, G, N and AC** (gross data rate up to 600 megabit/s) within frequency ranges of 2.4 GHz and 5 GHz. Encryption can be made available at customer's demand. The installation of our controller-operated wireless LAN in this high-density environment is designed for highest performance levels with up to 10,000 simultaneous clients. Currently we have more than 300 access points spread across the whole premises.

**We reserve the right to prohibit the installation and use of non-authorized access points brought in by the customer (routers with integrated APs, "Fritzbox" or the like) to ensure that the wireless LAN our customers and guests are provided with works with as little interferences as possible.**

## Node and wireless node

The invoicing model applied at WorldCCBonn is based on clients and services. **Each client requires a node** that sums up the services a client needs to receive network services. A client could be a **PC, a notebook or laptop, a printer or even wireless nodes such as a smartphone or a tablet.**

The services comprise access to the internet, for instance, but also DHCPs and DNS as well as the controllers that ensure availability of the wireless LAN. **The complete network infrastructure of the WorldCCBonn is made up of more than 1,000 devices** such as switches, controllers, servers, gateways, surveillance facilities, firewalls, uninterrupted power supply and emergency diesel

generator sets. Based on your specifications, we will determine the costs for providing the ICT infrastructure for your event. We will also gladly forward to you our "Price list for ICT technology and services".

We reserve the right for subsequent billing in case guests, exhibitors and customers bring in their own devices and connect them to our network, thus using more nodes than previously agreed with us. Inspections will be carried out both automatically and randomly when touring the premises.

*2] In exceptional cases, fast ethernet might be available temporarily on layer-2 switches only.*