



Press release

Deutsche Funkturm and Droniq use drone to digitally scan Berlin's landmark Television Tower

Berlin, 13 November 2019 – Deutsche Funkturm, the owner of Berlin's Television Tower, and Droniq, the drone airspace integrator, had a drone fly pre-programmed spirals around one of Berlin's main tourist attractions, and symbol of both the city and Germany, to collect data for a detailed 3D model. Deutsche Funkturm is using this pilot project to test new, innovative means to survey and maintain its portfolio of radio sites, including radio towers, masts, rooftop sites, and Germany's tallest antenna carrier, Berlin's Television Tower. Droniq ensured that the flight went smoothly, procuring the necessary approvals and drawing up a safety concept for the drone mission. Berlin's Television Tower is one of the most complex radio sites in Germany, both technically as well as concerning the laws that need to be complied with.

From 0 to 410 metres in only a few minutes – an easy job for a drone. Equipped with a special camera system, the H520 multicopter from Yuneec weighing 2kg flew spirals around the Tower. The drone covered a distance of 50 kilometres over three hours to complete the scan. The drone only interrupted its flight briefly for battery changes before continuing on its preprogrammed route. Finally, the filming of the Tower was completed and a complete scan of the structure and the antennas on top was in the bag. A precise digital 3D model can now be created using the images shot and the data collected – a model accurate down to a few centimetres.

Digitisation of the planning and maintenance of radio sites

The Tower is equipped with 200 antennas for numerous services and is one of the most complex radio sites in Germany, playing a vital role in the media landscape. With a height of 368 metres, it is exposed to extreme meteorological conditions. All this means that Deutsche Funkturm, as owner of the Tower, is confronted with many challenges as regards the maintenance of the building and the operation of the radio facilities. "Our sites play a vital role in digitisation in Germany and we intend to exploit the opportunities offered by digitisation more and more to operate our infrastructure more efficiently," said Bruno Jacobfeuerborn, CEO of Deutsche Funkturm. Until now, the maintenance of the company's 30,000 radio towers, masts and rooftop sites has been time-consuming and often had to be carried out by climbing specialists. "We made the conscious decision to pick Berlin's Television Tower for the pilot project. It posed the maximum technical and legal challenges. The images and measurement data provided by the drone will give us detailed information on the building's structural state and help us in the planning of new facilities, such as 5G," explained Martin Bouchard, Chief Operating Officer of Deutsche Funkturm.

Droniq took on the challenges for the approval for the flight

Berlin's Television Tower, which recently celebrated its 50th anniversary, posed major challenges for the team at Droniq. Operating a drone in Germany involves complying with a host of rules and regulations. In Germany, drone flights over sensitive infrastructure, such as railways, motorways and nature reserves, as well as over populated areas require the approval of the competent aeronautical



authority of the German Federal State affected. Berlin's Television Tower proved to be the pinnacle in this regard – not only is it located in the middle of a city, but also in a restricted area (ED-R 146) centred on the Reichstag, home to the German government. Within this restricted area with a radius of 3 nautical miles (approximately 5.5 km), drone flights are normally prohibited. In addition, the entire city of Berlin is located in controlled airspace subject to air traffic control which begins on the ground. "The conditions for a drone flight in Germany could hardly be more difficult, especially as we planned to fly up to a height of 400 metres," said Jan-Eric Putze, Droniq's CEO. Despite these hurdles, Droniq, which is a joint venture between the German air navigation service provider (DFS) and Deutsche Telekom, made it possible. In only three months, Droniq had procured the approvals from the competent aeronautical authority, the German Federal Supervisory Authority for Air Navigation Services (BAF) as well as an air traffic control clearance. The German Federal Police and the police force of the German Federal State affected were also involved. "Droniq made this flight possible within a time period acceptable to all. The work was ground-breaking on many levels," stressed Ralph Schepp, Droniq's Chief Operating Officer.

Digitisation of maintenance and approvals

Droniq provided the authorities with 50 pages of information to obtain the approval for the drone flight – an enormous formal effort as regards time and expenditure. This is the driving force behind the company's push for a digital solution. Droniq is working with its parent companies on a traffic management system for drones, or unmanned aircraft systems (UAS) as they are formally known. This UAS traffic management system (or UTM) will allow drones to be safely integrated into airspace. Drones are equipped with an LTE module that has an integrated SIM card. This means they can be tracked using the mobile communications network. The UTM system also offers an automated approval workflow for drone missions. The competent authorities can digitally process and approve applications for drone flights. "We offer a fast and digital solution that is fit for purpose for the approval of drone flights and we plan on implementing this together with the competent bodies," stressed Putze.

Media images can be found at www.dfmq.de

Press contact

DFMG Deutsche Funkturm GmbH

Benedikt Albers

Telephone: +49 (0)228 181 33107

E-mail: benedikt.albers@dfmq.de

Droniq GmbH

Michaela Sankowsky

Telephone: +49 (0)69 509 547-451

E-mail: michaela.sankowsky@droniq.de



Deutsche Funkturm

DRONIQ 

DFMG Deutsche Funkturm GmbH is a key player in developing infrastructure for German mobile network operators, broadcasters, operators of radio relays, and the radio networks of authorities and other institutions. The company was founded in 2002 and is part of the Deutsche Telekom Group. Its portfolio includes more than 30,000 radio sites, including the large German TV towers, radio masts, rooftop sites, distributed antenna systems (DAS) and small cells.

Media images and other information: www.dfmq.de

Die Droniq GmbH is headquartered in Frankfurt am Main, Germany, and is a joint venture between DFS Deutsche Flugsicherung GmbH (DFS) and Deutsche Telekom AG. The object of the company is the provision, distribution and marketing of services for drones and other aircraft in Europe. DFS holds a stake of 51 percent through its subsidiary DFS International Business Services GmbH, while Deutsche Telekom holds a stake of 49 percent through Telekom Innovation Pool GmbH.

For more information see: www.droniq.de

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Droniq GmbH, Ginnheimer Stadtweg 88, 60431 Frankfurt / Germany

CEO: Jan-Eric Putze (CEO), Ralph Schepp

Local district court Frankfurt am Main, commercial reg. no. 115576

VAT ID: DE324815501