



The *Dutch Authority for Digital Infrastructure* (RDI) is a national regulatory authority and part of the Ministry of Economic Affairs. We ensure the availability, continuity and reliability of the Dutch digital infrastructure. *For a safely connected Netherlands.*



Context of the DSMS pilot

- Frequency spectrum is a limited resource
- Burden is on policymaker & regulator to facilitate its optimal and equitable use
- In this, RDI takes a proactive stance, also with regard to dynamic spectrum allocation and use



Goal of the DSMS pilot

To investigate - real-world – the possibility of coexistence of a 5G Private network and FSS downlinks by dynamically mitigating interference



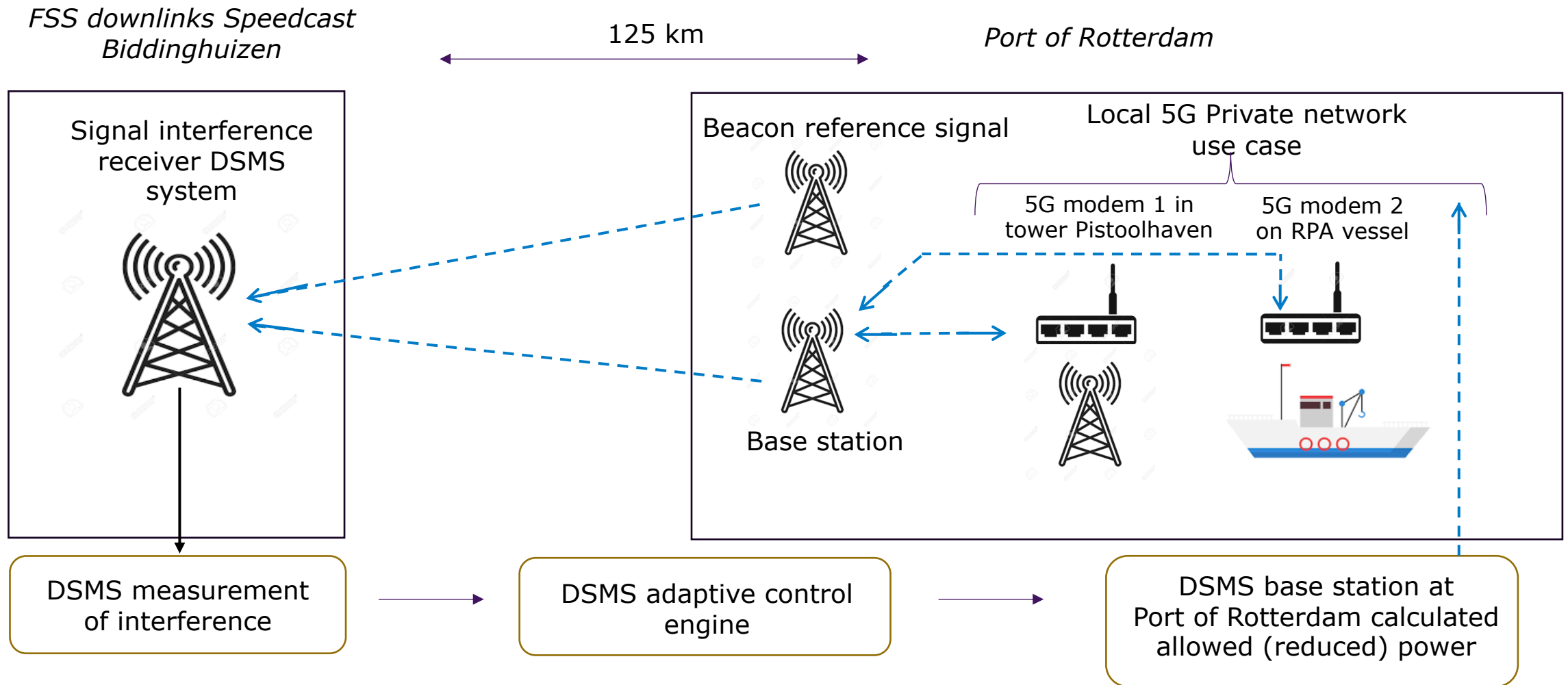


Set-up of the DSMS pilot

- Pilot in the 3,8 – 4,2 GHz band
 - *Preferable characteristics: large coherence bandwidth and occurrence of ducting*
 - *But in principle: DSMS concept is frequency independent*
 - *Primary allocation in the NL: FSS downlinks*
 - *Multiple FSS downlinks in Biddinghuizen (Speedcast – satellite service provider)*
- Introduction of a secondary allocation: a 5G Private network use case in the port of Rotterdam
- Public-private collaboration
 - *RDI, Speedcast, Port of Rotterdam, Ericsson, BTG (trade association)*
- Measurements and data collection December 2024 - September 2025



Set-up of the DSMS pilot

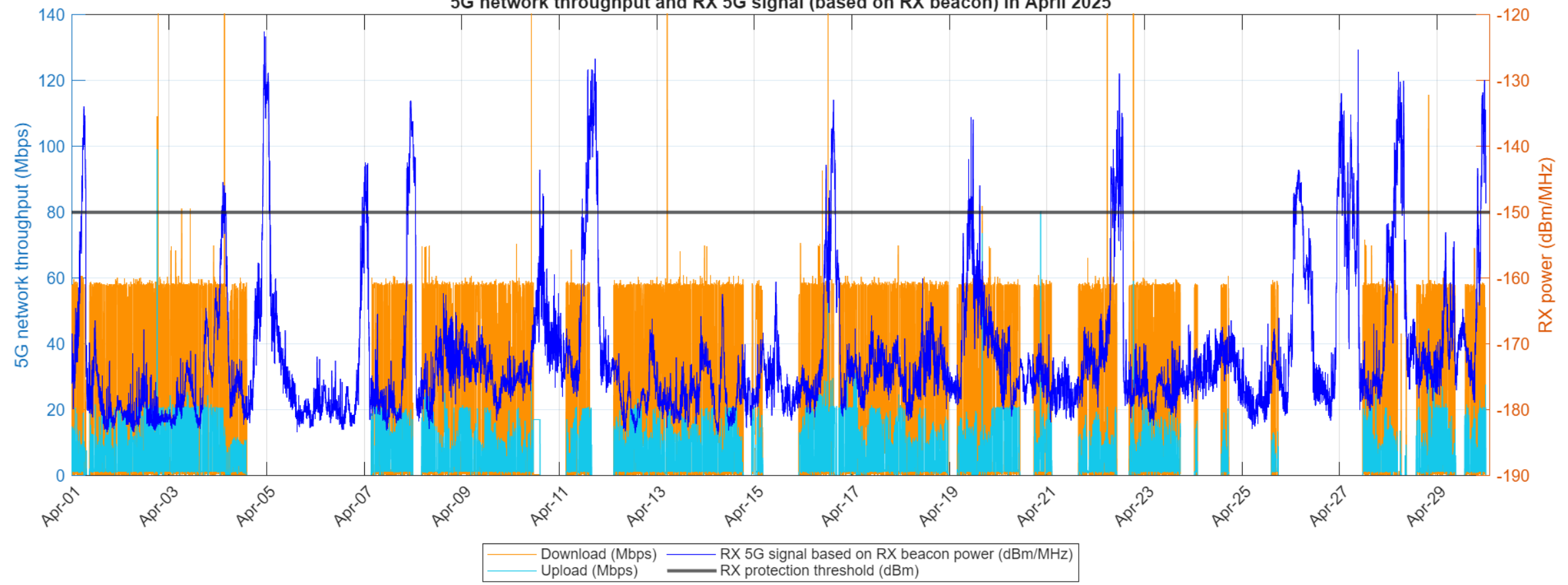


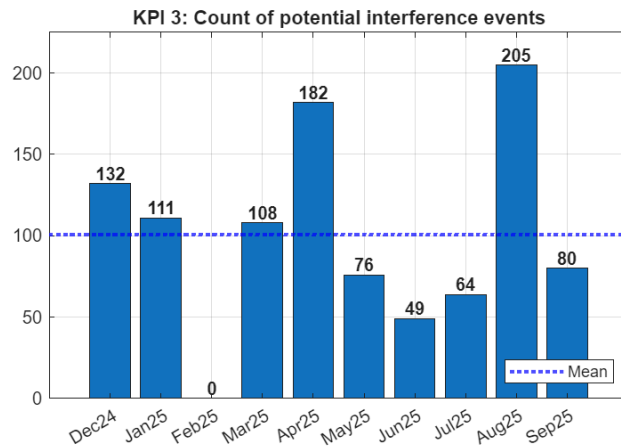
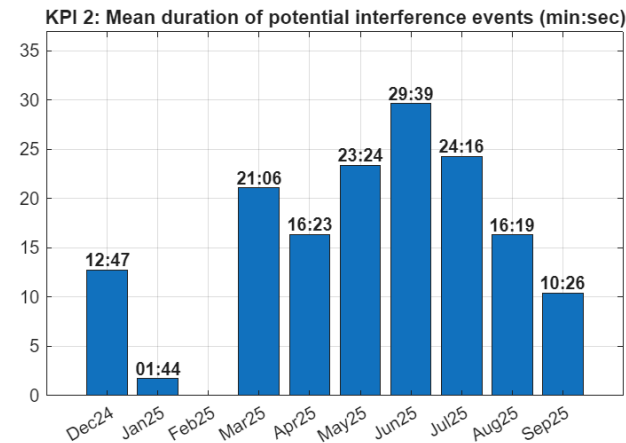
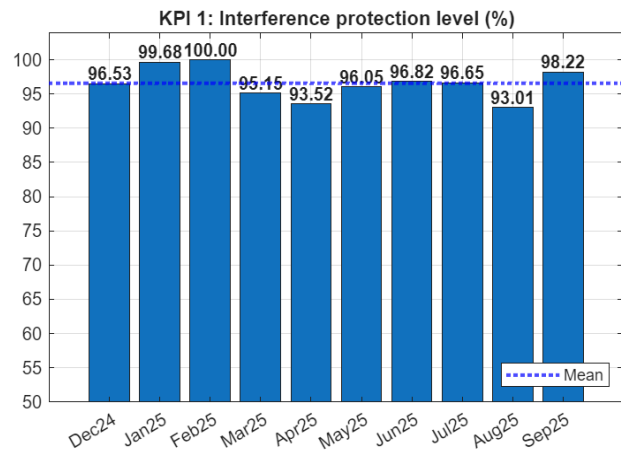


All in a split second



5G network throughput and RX 5G signal (based on RX beacon) in April 2025





Results & observations

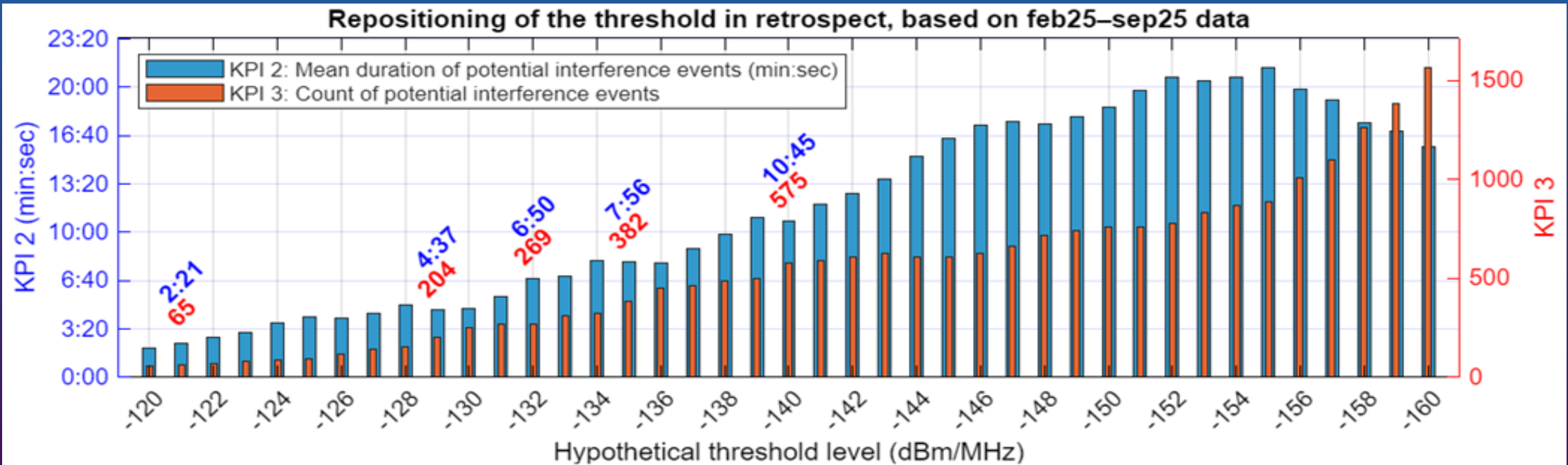
- On average, the protection threshold of -150 dBm/Mhz has not been exceeded ~96,56% of the time
- As expected, increased duration of exceedence of the threshold due to ducting in the ducting season
- On average, the threshold was exceeded ~101 times

But note: exceedance of the threshold has never meant interference! – automatic 5G transmit power adjustment by the DSMS adaptive control engine



Results & observations

- If the threshold is exceeded, the 5G transmit power is reduced - meaning 5G network throughput is reduced or even fully stopped
- The extent to which this is acceptable, depends on the type of 5G use case
- Therefore the threshold needs to be optimized to serve the interest of both spectrum users



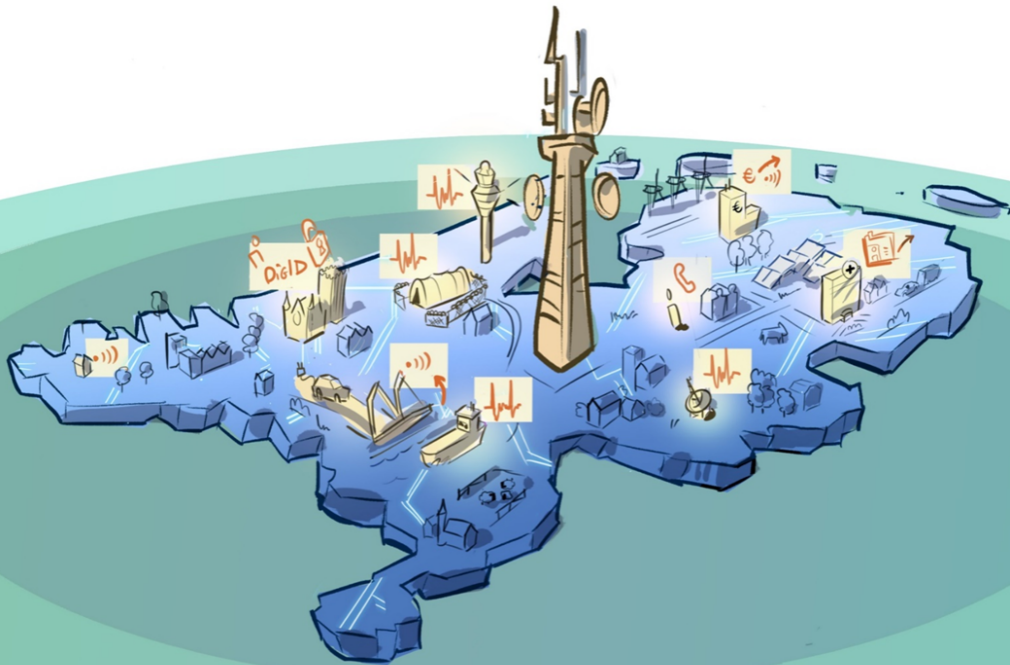


Wrap up

- The pilot is now being finalized and the report written
- However, it is save to conclude that the pilot shows that the concept works - dynamic spectrum sharing is definitely possible
- Results show that real-time adaptive coordination between spectrum users can lead to more efficient use of shared frequencies
- The pilot provides valuable lessons for further development of dynamic spectrum management and supports the design of future pilot projects



Dutch Authority for Digital Infrastructure
Ministry of Economic Affairs



Further questions?

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