SATCOM WEATHER

Link quality parameters in VSAT networks for effective operation and for weather monitoring

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VSATs (very small aperture terminals)

Motivation

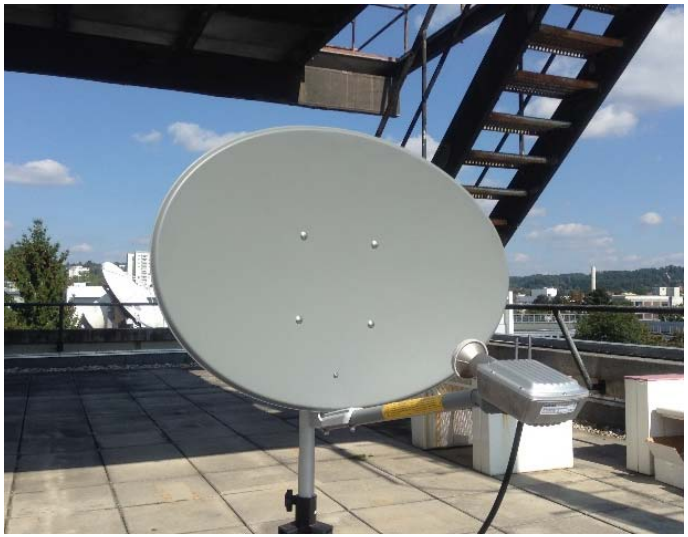
- The business of Satellite- and Satellite-Network-Operators is challenged by the competition with terrestrial services and by the trend in TV consumption towards streaming
- SatcomWeather was initiated to support VSAT operators optimizing service and network operation
- Hundreds of millions of measured VSAT signals and throughput records are available

Benefits

- Classification of individual stations
- Evaluation of network problems
- Weather monitoring or complementing weather measurements

VSAT network

Data from the broadband network of Avanti plc

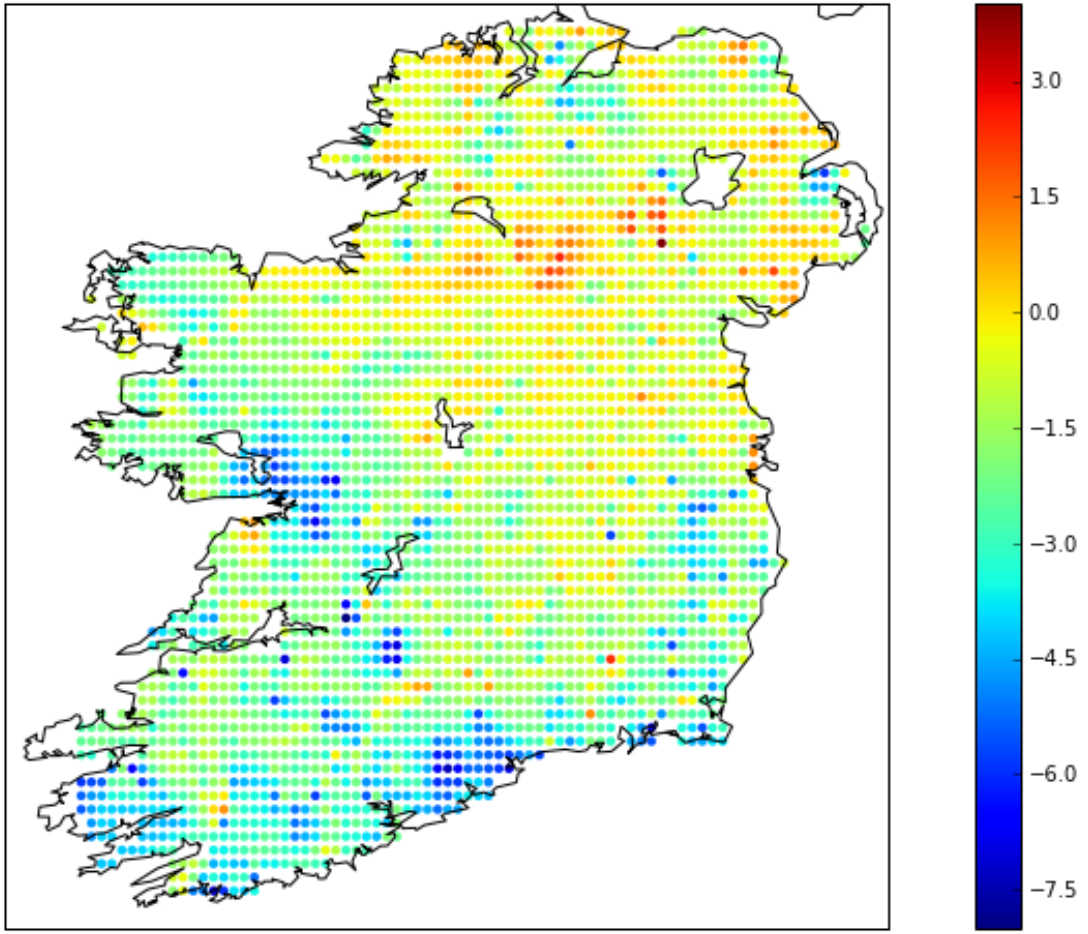


VSAT with 74 cm dish size: the typical ground terminal antenna

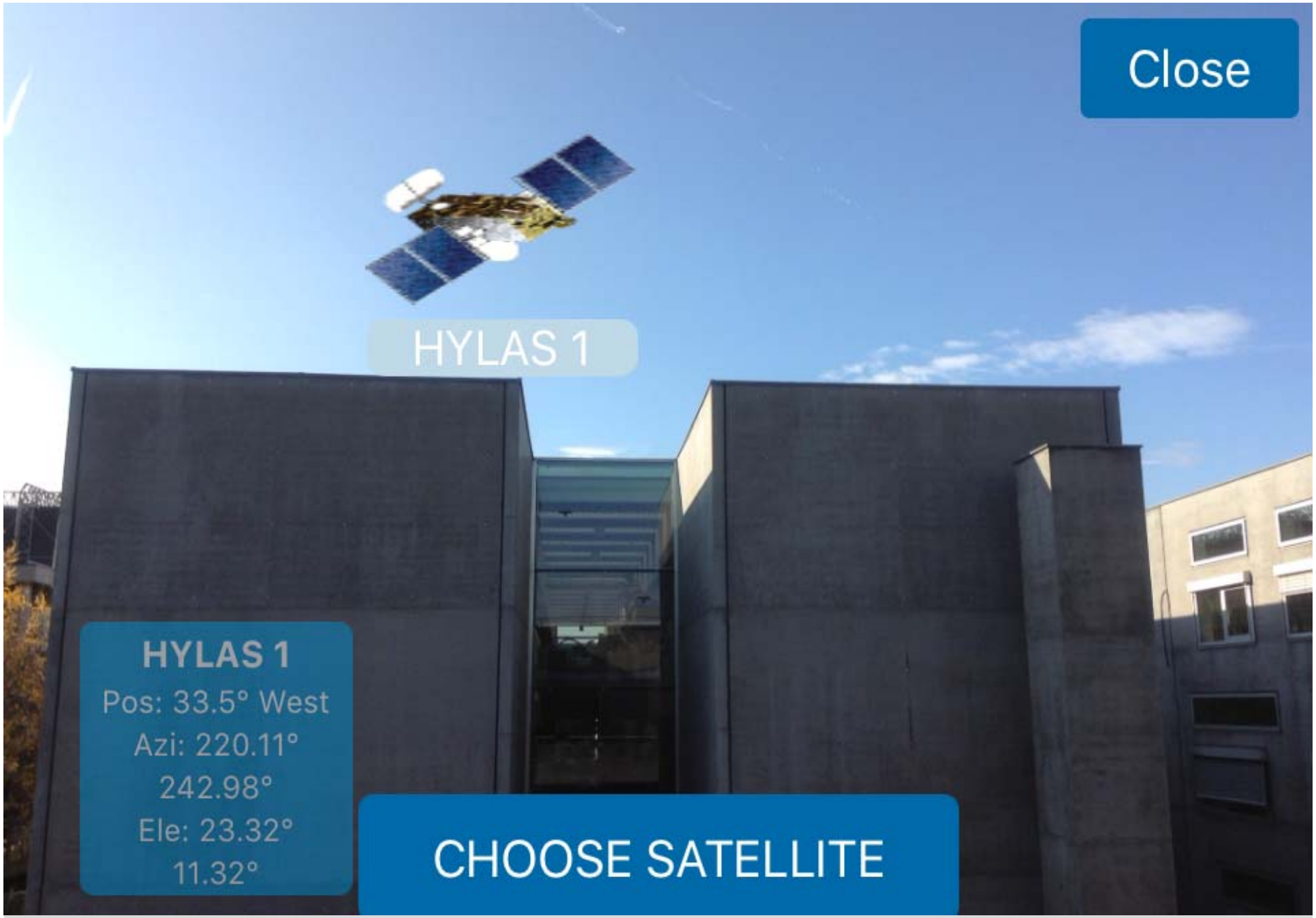
Downlink Frequency Range	
Forward	**19.7 - 20.2 GHz**
Return	**18.1 - 19.7 GHz**
Active Return Transponders	**2**
Return Channel Bandwidth	**120 MHz per beam**
Polarisation	**Circular**

Indoor modem

Signal- / Weather maps



Source:
F. Teschl, V. Eder, L. Costa, S. Amberger, O. Koudelka
67th International Astronautical Congress (IAC), Guadalajara, Mexico, 26-30 September 2016


Close
HYLAS 1
HYLAS 1
Pos: 33.5° West
Azi: 220.11°
242.98°
Ele: 23.32°
11.32°
CHOOSE SATELLITE

Conclusions

- The pointing of each station needs to be understood and is - in combination with the daily satellite movement - the dominant clear-sky signal effect
- The analyses have the potential to provide not only useful information to VSAT operators but also for weather monitoring or for operationally complementing radar or rain gauge measurements

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SPACE ANALYSES

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