



**TAL
TECH**

HYPER-CONNECTED COUNTRIES **ESTONIA AS A CASE STUDY**

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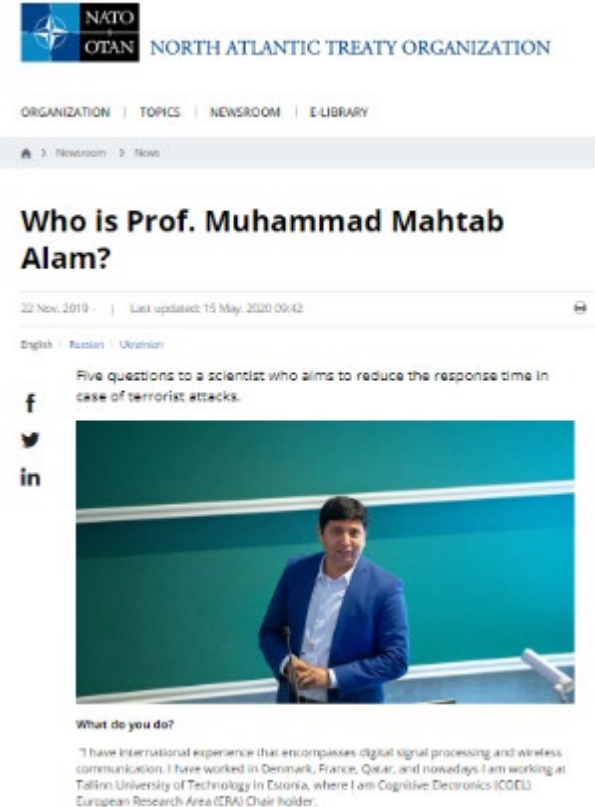
**TALLINN UNIVERSITY
OF TECHNOLOGY**

ABOUT ME

Technology areas

6G5GBIG DATAIOTSmart Ghealth careTAL TECH

- **International cross-disciplinary research and innovation experience**
 - Estonia, TalTech
 - France, INRIA-IRISA Lab
 - Belgium, Barco NV
 - Denmark, Aalborg University
 - Pakistan, University of Engineering and Technology
 - Qatar, Mobility Innovation Center
 - Ireland, University of Cork
- **Public and private sector engagement**
 - Collaboration with 80+ (Industry-academia partners)
 - 10+ Funding Agencies (25 Million+ Euros)
 - TRL 3-5 and TRL 5-7

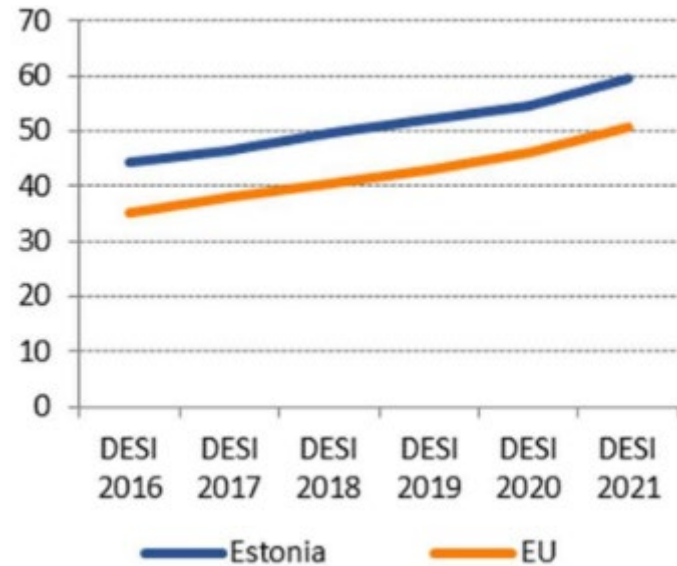


The screenshot shows a NATO website page for Prof. Muhammad Mahtab Alam. The page includes the NATO logo, navigation links for Organization, Topics, Newsroom, and E-library, and a breadcrumb trail for Newsroom > News. The article title is "Who is Prof. Muhammad Mahtab Alam?" with a date of 22 Nov. 2019 and a last update of 15 May 2020. The article content includes a sub-header "Five questions to a scientist who aims to reduce the response time in case of terrorist attacks," a photo of Prof. Alam, and a bio: "I have international experience that encompasses digital signal processing and wireless communication. I have worked in Denmark, France, Qatar, and nowadays I am working at Tallinn University of Technology in Estonia, where I am Cognitive Electronics (COEL) European Research Area (ERA) Chair holder."

ESTONIA

- **Size:** 45,227 km²
- **Population:** 1.32 M
- Population density 28 per km²
- Coastline 3,974 km
- Member of EU, Schengen Area, NATO, OECD
- Unemployment rate 3.9%

DIGITAL ECONOMY AND SOCIETAL INDEX



e-ESTONIA

- Homeland of Skype – neighbor of TalTech
- Home of NATO Cooperative Cyber Defence Centre of Excellence and EU IT Agency
- Has Europe's largest 4G coverage (95% of the country)
- Leading start-up country: 1126 startups currently operating in Estonia.
- 15 min to establish a company online
- E-society: digital prescriptions, e-tax declaration, e-parking, e-school, e-residency



HYPERCONNECTIVITY Evolution

1870



1950s



TODAY



FUTURE





TALLINN UNIVERSITY OF TECHNOLOGY

- Founded in 1918
- Research-based university
- 9,236 students, 77,224 alumni
- 1,953 employees, 144 professor
- 1,387 publications, 63 PhD degrees awarded





HYPERCONNECTIVITY – MORE THAN HYPERSPEED

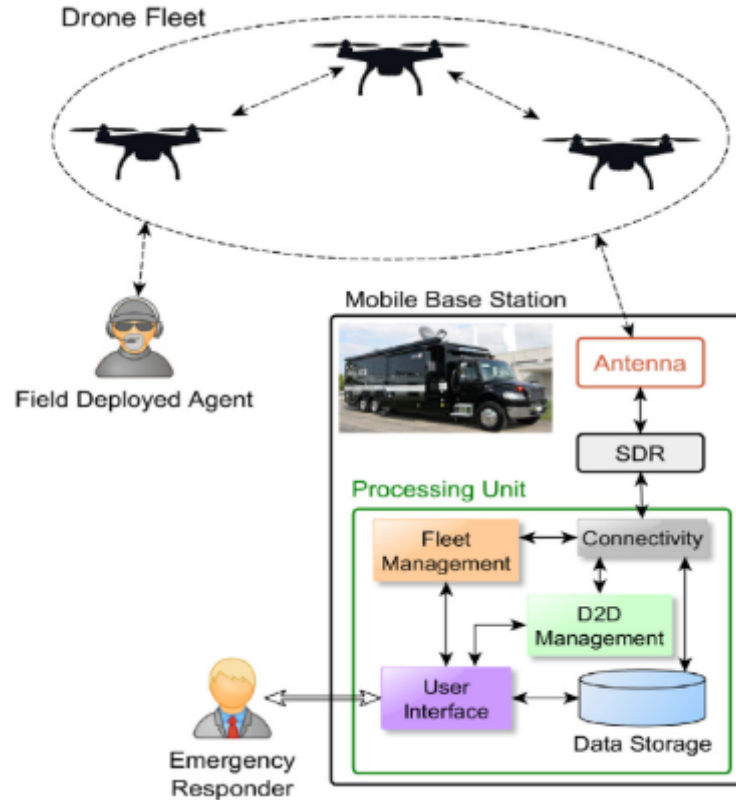


H2020 5G ROUTES 5TH GENERATION CONNECTED AND AUTOMATED MOBILITY CROSS-BORDER EU TRIALS



Figure 1.4: Localised field trial sites

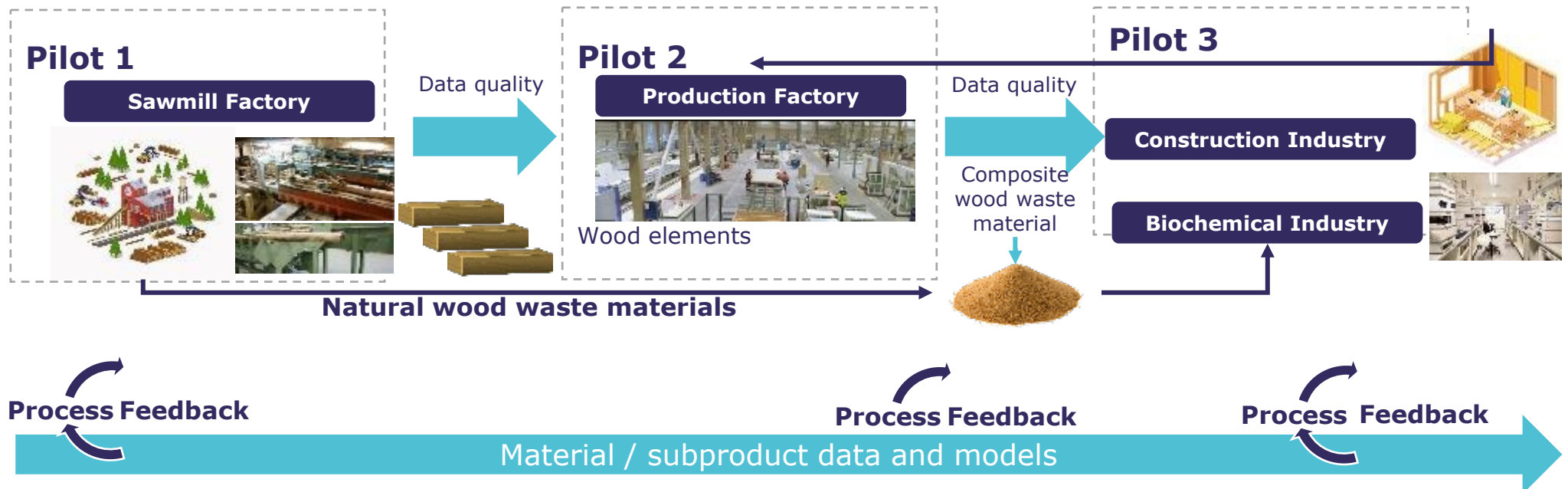
NATO-SCIENCE FOR PEACE AND SECURITY COUNTER-TERROR PROJECT



CONCEPT WOOD VALUE CHAIN

5G-TIMBER

- **Key innovations**
 - Timber material models
 - Open standards for production data, secure exchange
 - Data analytics at the edge
 - Precise indoor localization
 - Digital Twin (DT) and augmented reality (AR)
 - Industrial IoT





A BIG THANKS TO INTERNATIONAL COLLABORATORS, MY TEAM AND STUDENTS!







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