



# University of Oulu

## Knowledge, Experts, Innovations

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# University of Oulu

10 faculties

14,200 students

2,900 employees

over 50,000 alumni

Total funding 216 M€

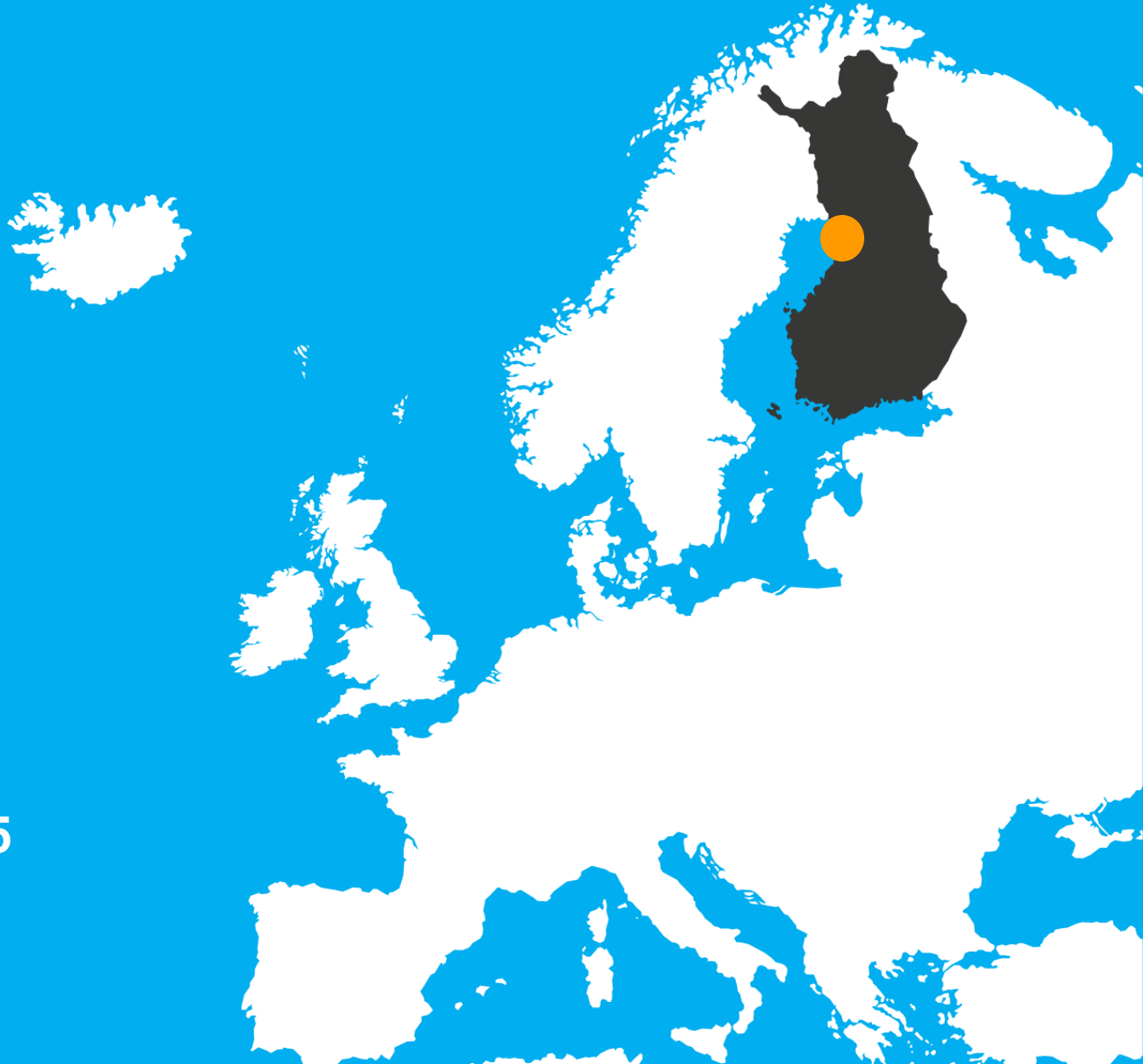
Founded 1958

1245 Master's degrees

172 Doctor's degrees

2511 scientific publications

54 invention disclosures in 2015



# Science *with* Arctic Attitude

University of Oulu  
Strategy 2016–2020





**Our strategy is  
based on five  
thematic,  
internationally  
significant research  
focus areas**

Creating sustainability by materials and systems

Molecular and environmental basis of life-long health

Digital solutions in sensing and interactions

Earth and near-space system and environmental change

Understanding humans in change



**Our research  
benefits people  
living at all  
latitudes, but we  
utilize our location  
as one of the  
Northernmost  
universities in the  
world**

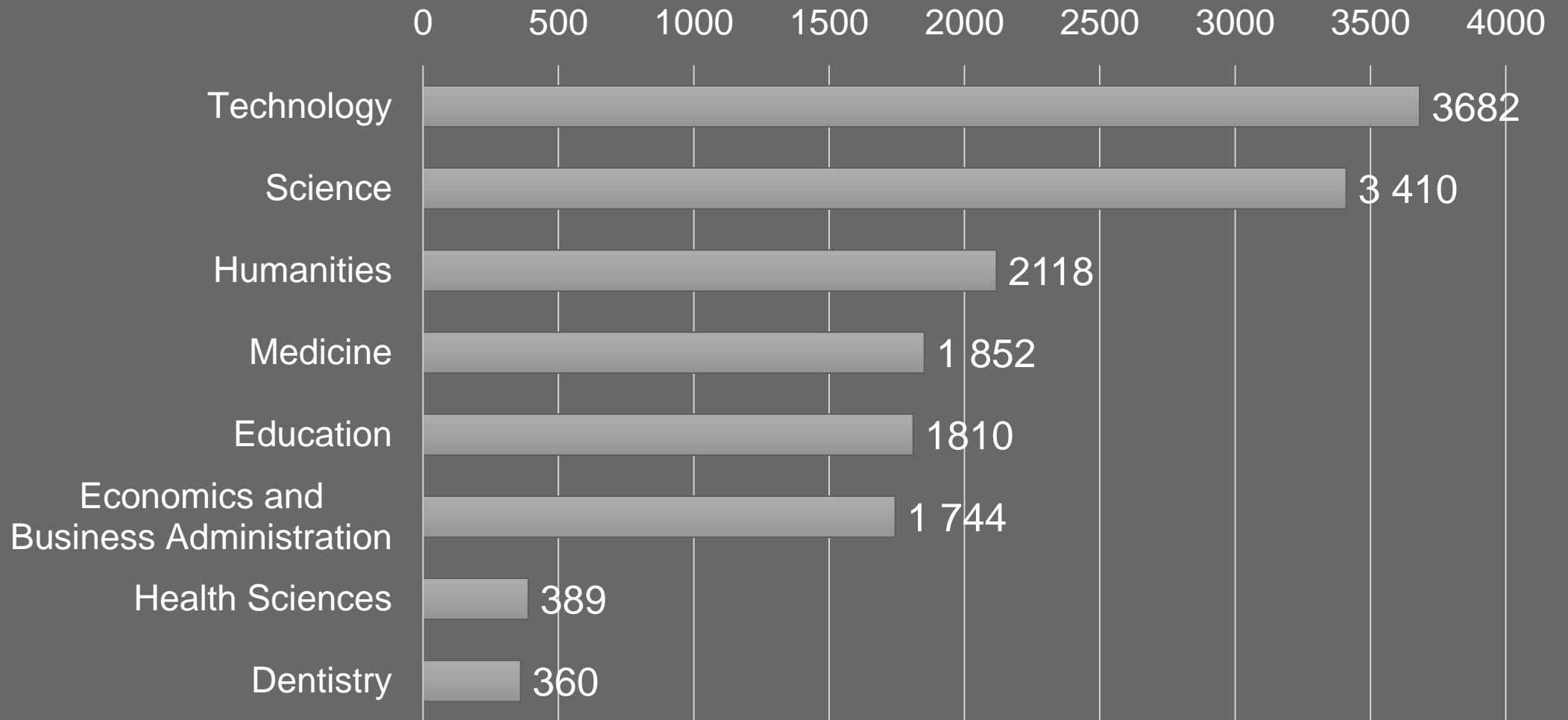
## Arctic Agenda

Research and innovation regarding e.g. sustainable utilization of natural resources, Near-Earth Space Environment, logistics, technology, and cultures in the Arctic





# Active students



## ACKNOWLEDGED SPECIAL EXPERTISE

- ❖ New materials in bio and circular economies
- ❖ Advanced steel research
- ❖ Sustainable mining and energy economies
- ❖ Cleantech and sustainable production
- ❖ Spectroscopy and imaging of materials

## ACKNOWLEDGED SPECIAL EXPERTISE

- ❖ Near earth space research
- ❖ Solar research, modelling space phenomena
- ❖ Changing Northern bioenvironment

CHANGING  
NORTHERN  
ENVIRONMENT

## ACKNOWLEDGED SPECIAL EXPERTISE

- ❖ Regional change in an increasingly international world
- ❖ Skills of human communities to act in northern conditions
- ❖ Sustainable economic and social development
- ❖ Challenges in interaction, communication and learning

ENVIRONMENTAL-  
FRIENDLY  
MATERIALS AND  
THEIR PRODUCTION

CREATING  
SUSTAINABILITY BY  
MATERIALS AND  
SYSTEMS

CONTEXT-AWARE  
COMMUNICATION  
NETWORKS AND  
APPLICATIONS

## ACKNOWLEDGED SPECIAL EXPERTISE

- ❖ Wireless, 5G
- ❖ Machine vision
- ❖ Optoelectronic sensors and spectroscopy
- ❖ Ubiquitous wireless sensors

## ACKNOWLEDGED SPECIAL EXPERTISE

- ❖ Northern Finnish population and patient cohorts
- ❖ Cell-matrix-hypoxia interplay
- ❖ Health-ICT and novel imaging applications
- ❖ Protein folding, structure and biocatalysis, and metabolomics

NEW THERAPIES AND  
MEASUREMENTS FOR  
PERSONALIZED HEALTH AND  
WELLNESS

SOLUTIONS TO CHALLENGES IN  
BORDERS AND INTERACTIONS IN  
THE 21ST CENTURY

FOCUS AREAS

EARTH AND NEAR-  
SPACE SYSTEM AND  
ENVIRONMENTAL  
CHANGE

SPEARHEADS

UNDERSTANDING  
HUMANS IN CHANGE

DIGITAL SOLUTIONS  
IN SENSING AND  
INTERACTIONS

MOLECULAR AND  
ENVIRONMENTAL  
BASIS OF LIFE-LONG  
HEALTH



401 - 500, = 3<sup>th</sup> in

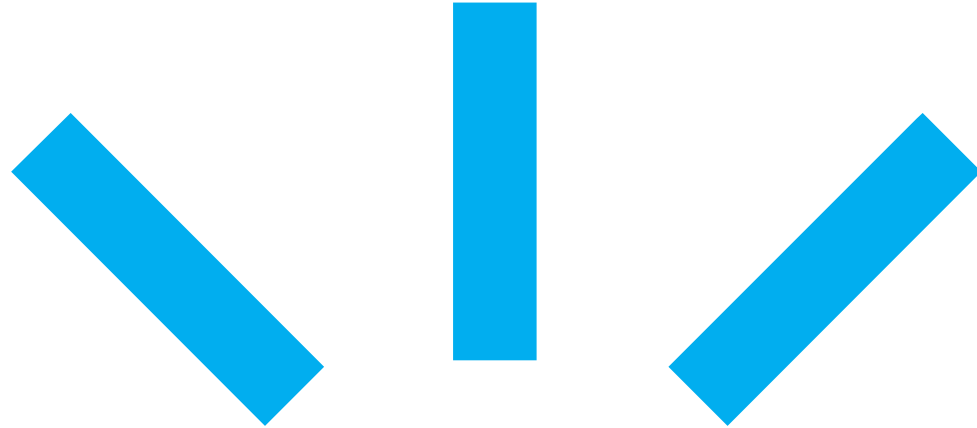


411 - 420, 8<sup>th</sup> in



201 – 250, = 2<sup>nd</sup> in





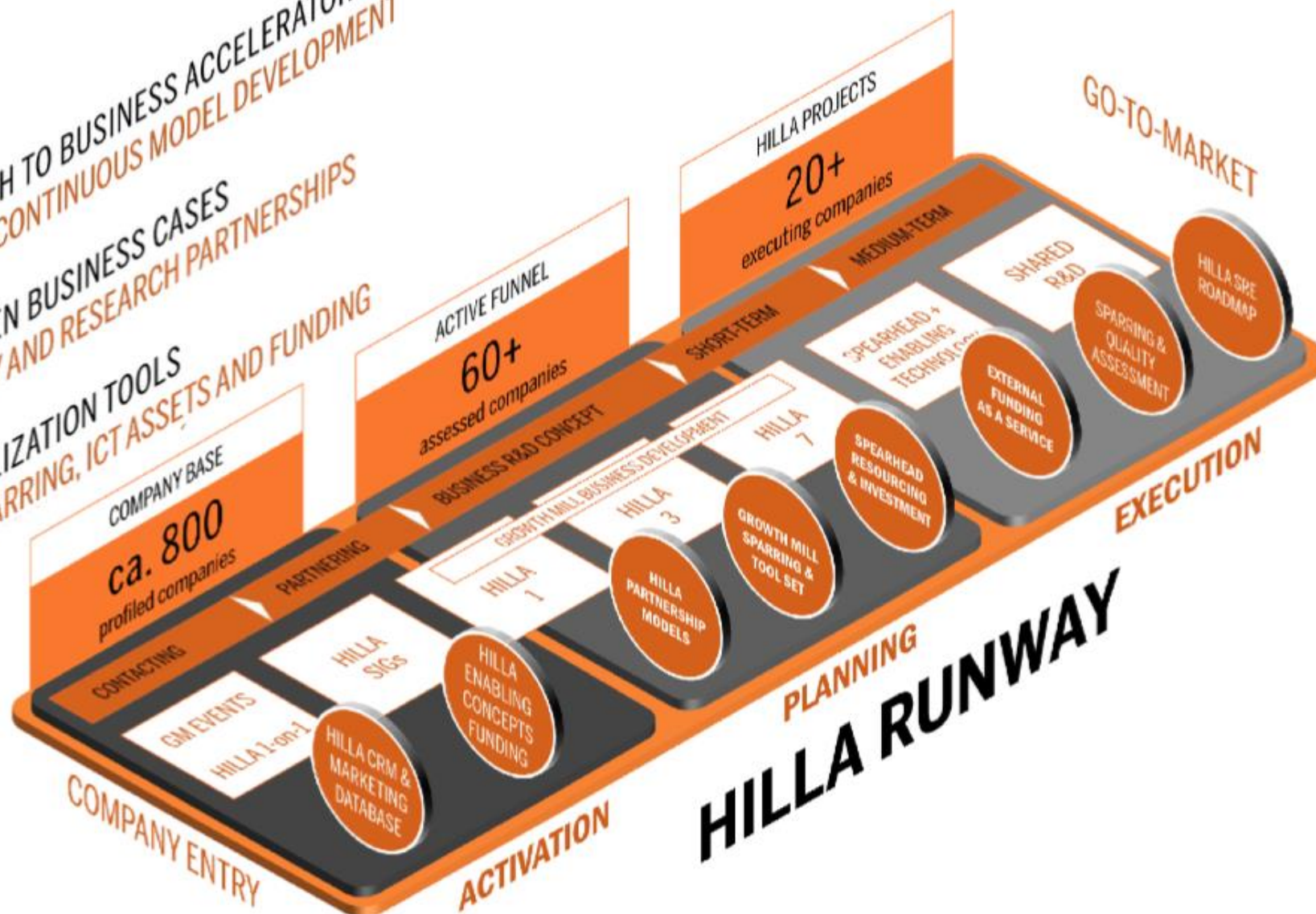
# **Additional slides**

**Boosting startups and SME to growth path**



# HILLA tools for acceleration

AGILE RESEARCH TO BUSINESS ACCELERATOR  
4 INDUSTRIES – CONTINUOUS MODEL DEVELOPMENT  
REVENUE DRIVEN BUSINESS CASES  
MULTI-COMPANY AND RESEARCH PARTNERSHIPS  
SMART SPECIALIZATION TOOLS  
RESOURCES, SPARRING, ICT ASSETS AND FUNDING



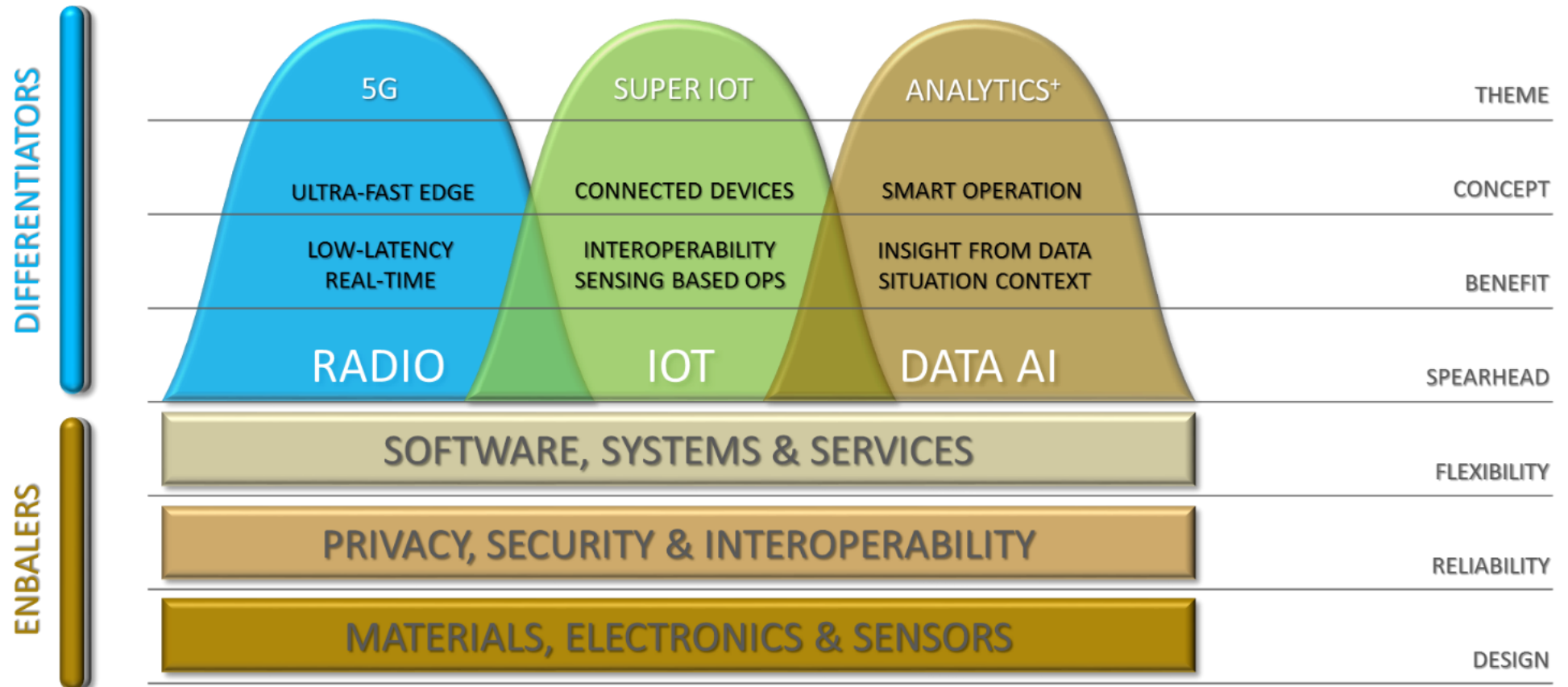


# ICT ecosystem





# Technological spearheads





# Read more on net

5G Test Network Finland <http://5gtnf.fi>  
SuperIoT <http://superiot.fi>  
Data AI <http://analytics.plus>