

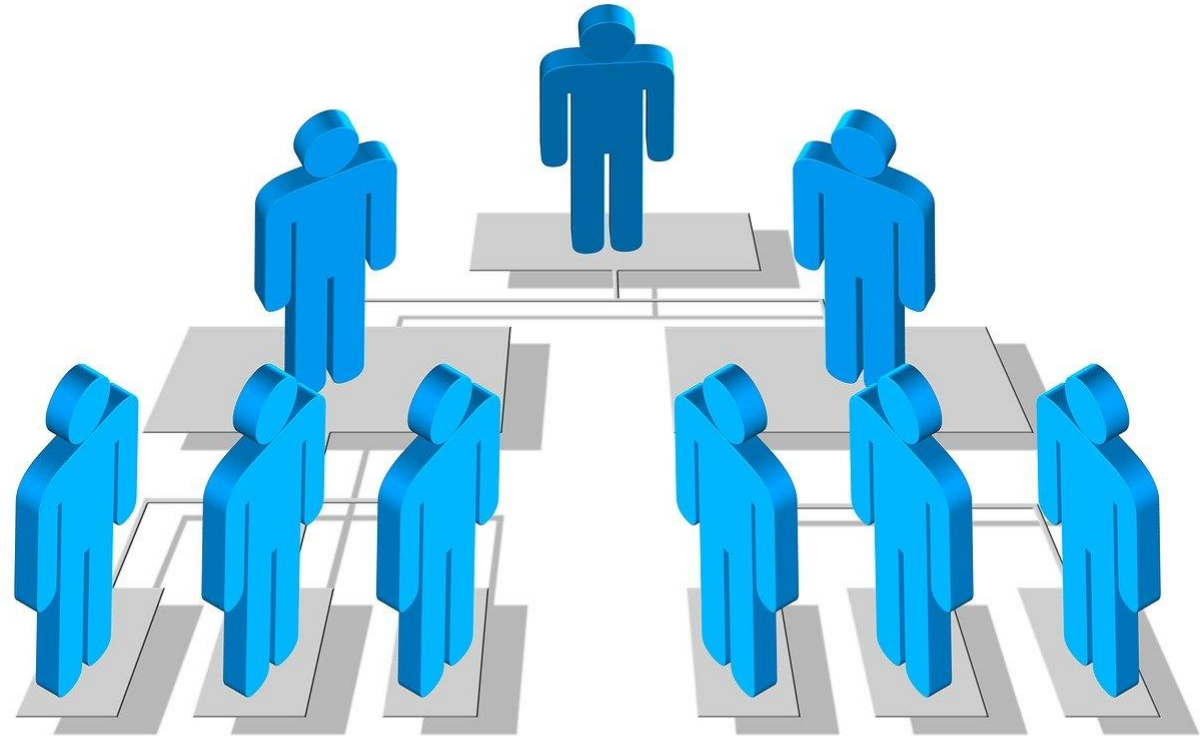
# EMC-IKT Presentation

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EMC = Elektromagnetisk kompatibilitet  
IKT = Information och Kommunikationsteknik

# EMC-IKT

- Today we are 18 people, with the intention of growing.
- We have both EMC and Radio competence.
- Testing of industrial and consumer products.



# EMC & Radio services at RISE



- Largest EMC test facility centre in northern Europe
- Accredited testing to a large number of EMC and Radio standards
- Notified Body for the EMC directive and for RED (Radio Equipment directive) in Europe
- TCB (Telecommunications Certification Body) for FCC in USA
- FCC and ISED Recognized Lab (ISED = Innovation, Science and Economic Development Canada)
- GMA (Global Market Access) services
- Active in test standardization for ISO, CENELEC and ETSI

# Accredited testing

Tests performed accredited according to ISO / IEC / 17025 in our laboratories in Borås.



EMC-test in semi-anechoic chambers from 9 kHz to 40 GHz.



Radio measurements in fully-anechoic chamber 9 kHz to 220 GHz.

# Testing



## Examples of products we test:

- Consumer products
- Industrial products
- Marine products
- Lock and alarm
- Bicycles
- Heat pumps
- Fuel pumps
- Charging stations
- Warehouse robots
- Radio communication equipment

We can perform radio testing for a lot of different technologies such as 3G, 4G, 5G, WiFi, BLE, RFID, IoT and radar.



# Shielded rooms

Quick overview of our shielded rooms for EMC and Radio measurements.



# Galvani – Shielded room for conducted tests

Shielded room for performing EMC immunity tests on cables and radio measurements/monitoring.





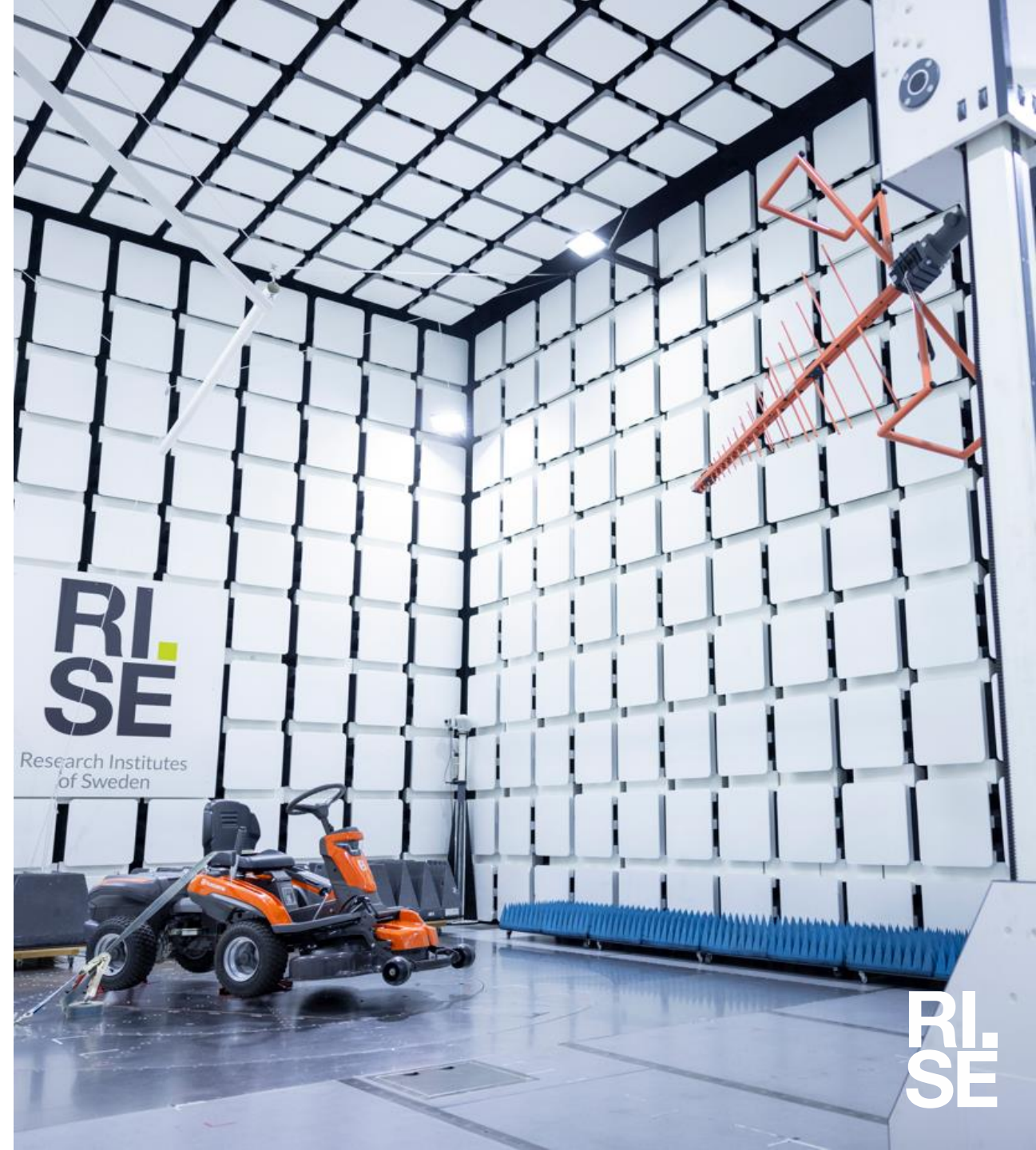
# Edison – Semi Anechoic Chamber (SAC) 3m

A semi anechoic chamber (SAC) with reference ground plane used for Radiated EMC Emission/Immunity tests and Radio measurements



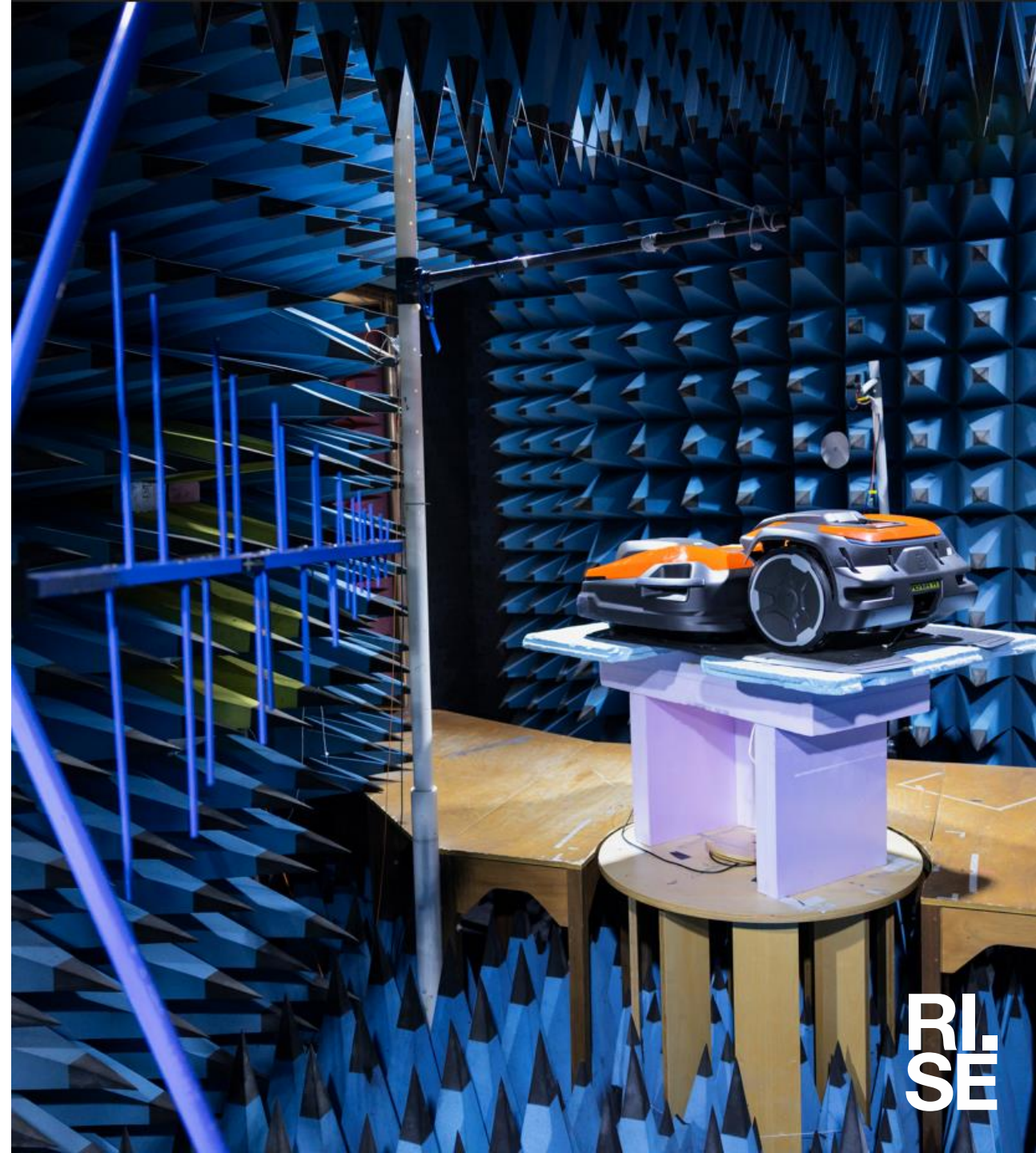
# Tesla – Semi Anechoic Chamber (SAC) 3m

Equal to Edison but can handle larger test objects like small vehicles etc.



# Hertz – Fully Anechoic Chamber

Fully anechoic chamber simulate free field conditions by lining all surfaces, including the floor, with absorbing materials. Used for Radiated EMC tests and Radio measurements (up to 220 GHz)



# Testing of radio communication equipment



We perform accredited testing of radio characteristics for type approval in the EU, USA and Canada, and verify and analyze various requirements for radio communication equipment.

# EU RED (Radio Equipment Directive)



- Directive 2014/53/EU Into force in 2016
- RED must be used for radio equipment within EU for frequency up to 3000 GHz.
- We can help you with carry out measurements.



## Cyber Security

Radio Equipment Directive 2014/53/EU (RED) Article 3.3.d,e,f which also includes cyber security requirements

- Radio equipment must meet cyber security requirements to be allowed to sell products after 2025-08-01.
- We can help you with that.



# Notified Body for the EU and USA

RISE is Notified Body (NB) for Europe and TCB (Telecommunication Certification Body) for the USA.

For the EU, manufacturers can obtain an "EC type examination Certificate" as proof of an independent review of their technical documentation for their CE marking of the product.

In the USA, it's the authority FCC (Federal Communications Commission) that sets the requirements for the regulations for placing electrical products on the market.



# Global Market Access (GMA)

In order to place products on the market in different countries, it is required that the products meet regulations and standards specific to the countries and regions.

We can help you with the certification process to meet the certification requirements in different countries globally so that you can quickly and easily place your products on the market.





# Important Links



- Main page of information:  
[https://single-market-economy.ec.europa.eu/sectors/electrical-and-electronic-engineering-industries-eei/radio-equipment-directive-red\\_en](https://single-market-economy.ec.europa.eu/sectors/electrical-and-electronic-engineering-industries-eei/radio-equipment-directive-red_en)
- The Radio Equipment Directive (RED):  
<https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32014L0053>
- Official Journal of Harmonised Standards:  
<https://ec.europa.eu/docsroom/documents/40222>
- Class 1 devices:  
<https://ec.europa.eu/docsroom/documents/40361/attachments/1/translations/en/renditions/native>
- The EU Blue Guide (new in 2022)  
<https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=OJ:C:2022:247:TOC>
- The RED Guide  
<https://ec.europa.eu/docsroom/documents/33162/attachments/1/translations/en/renditions/native>



**RISE**