

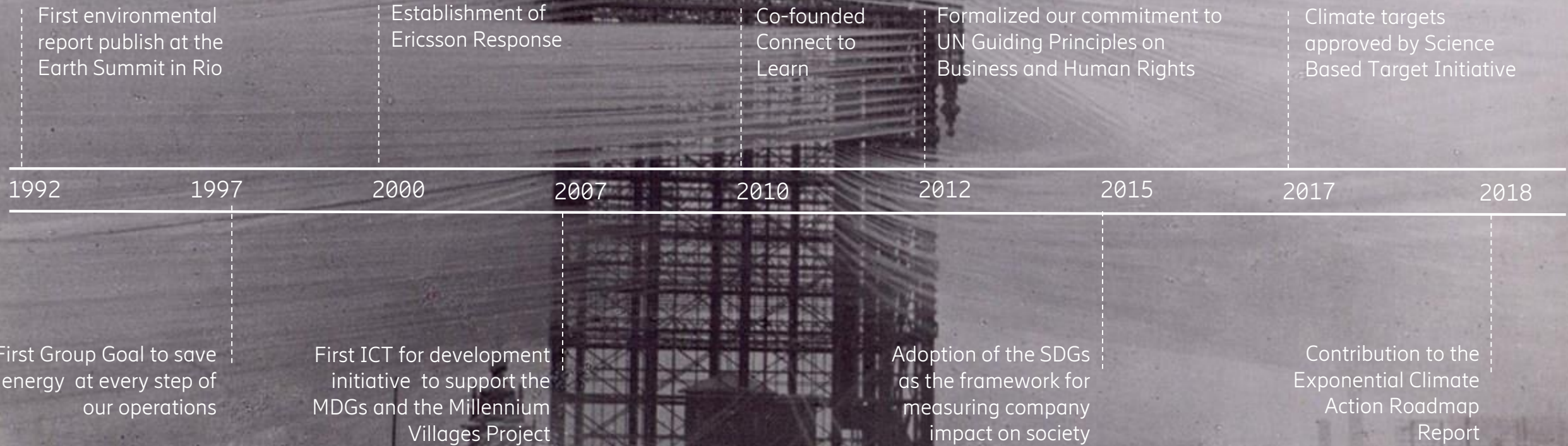
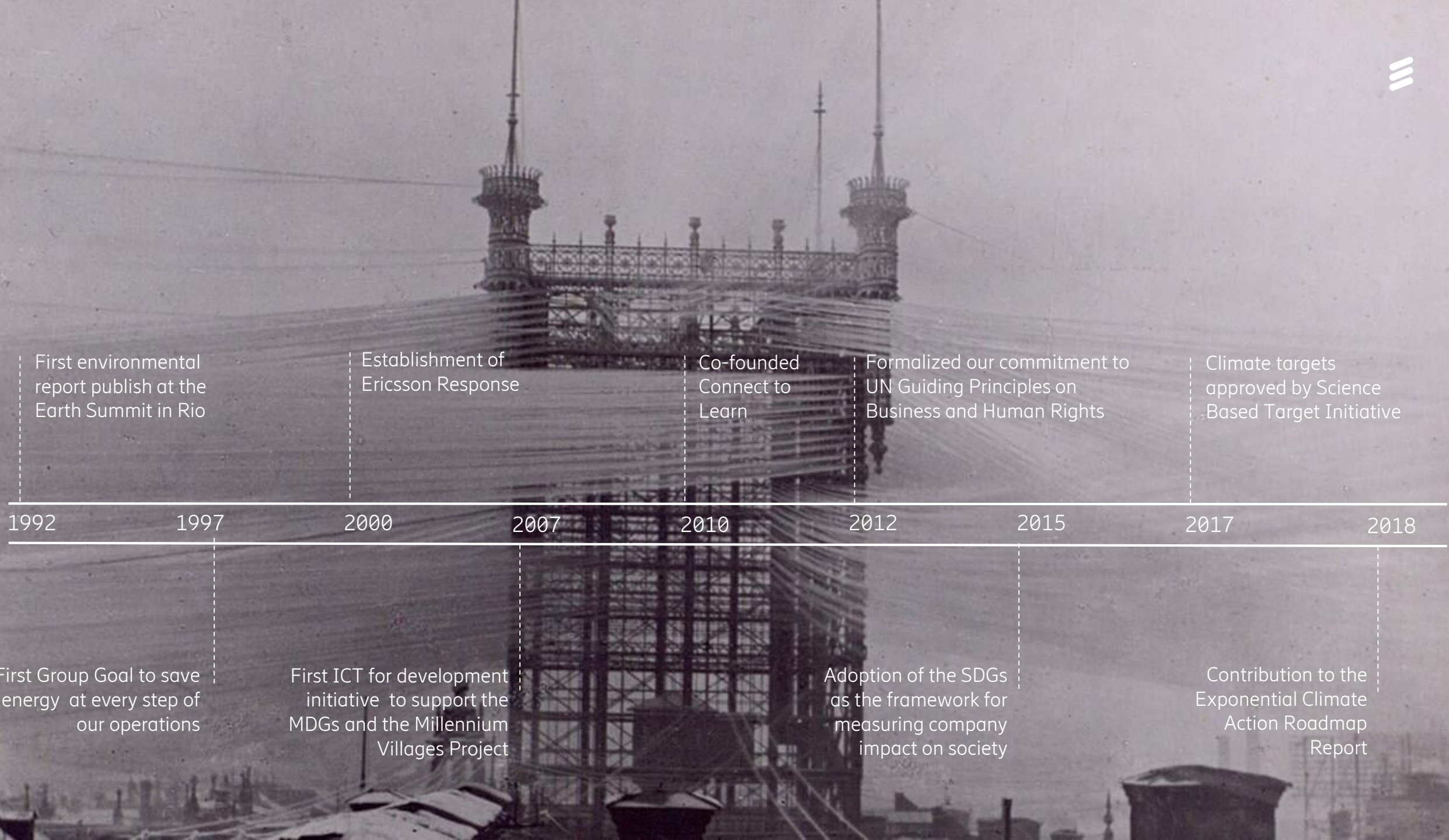


Ericsson

Empowering an intelligent,
sustainable and connected world



June 2019
Mats Pellbäck Scharp



Focus areas



Company purpose

Empowering an intelligent, sustainable and connected world

Responsible business

Drive proactive agenda beyond legal compliance to maintain Ericsson as a trusted partner

Energy, environment and climate action

Provide sustainable and circular solutions and services contributing to Ericsson differentiation and business

Internet for All

Deploy innovative solutions which improve mobile broadband accessibility to drive social and economic development

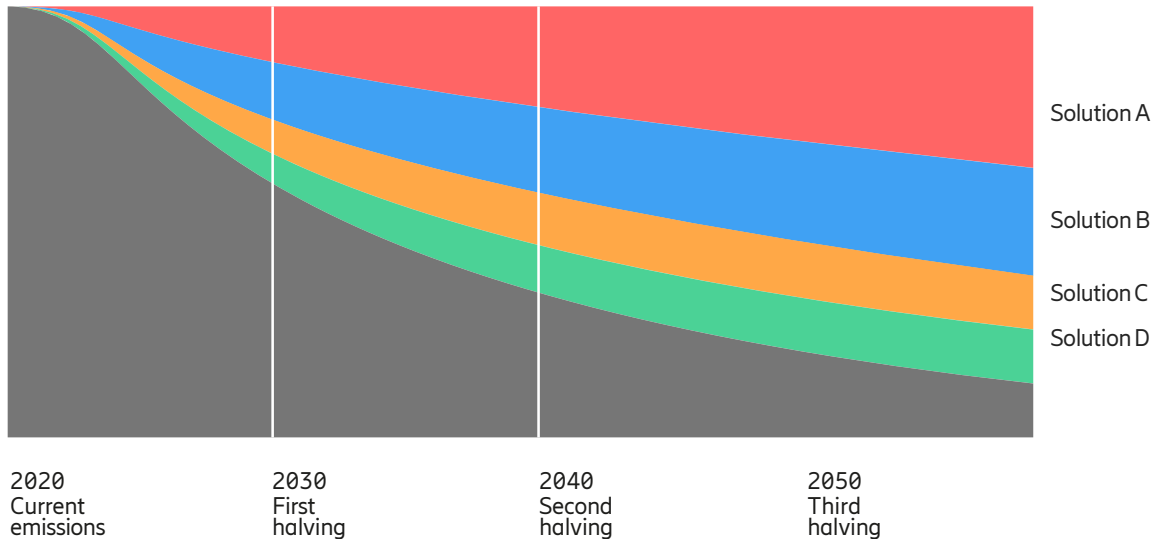


Climate action



Ericsson contributed to Exponential Climate Action Roadmap

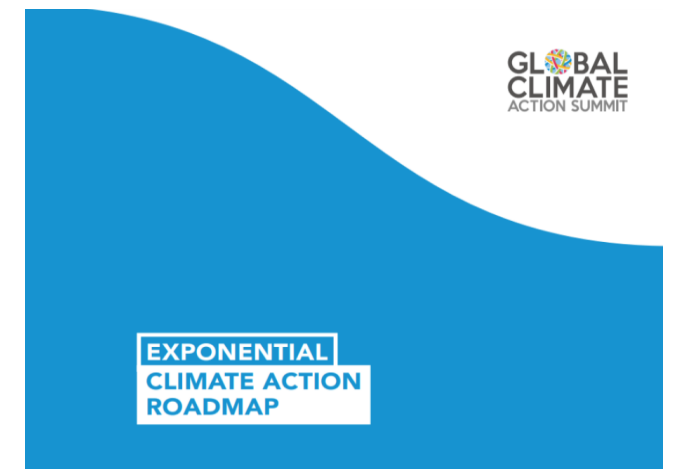
We produce world-leading research. An example is our contribution to the “Exponential Climate Action Roadmap” report, where we demonstrate how technology can be a game changer in reduction of carbon emissions and enable us to stay below 1.5 degrees . The research shows the trajectory for how ICT can enable emissions reductions in other sectors and industries. It also identifies how climate leadership, stronger policies and exponential technology together make up a roadmap towards climate action and reduced carbon emissions.



“ As a sustainability pioneer in the private sector, we have been both an advocate of climate action and investing in research and development of climate solutions. We understand the urgency for action. We believe leveraging new technology, such as digitalization and 5G, will be fundamental to reduce carbon emissions by half every decade, meeting the Carbon Law.”



Börje Ekholm, CEO, Ericsson



Examples of Ericsson solutions to help achieve the Global Goals



More cases on:
ericsson.com/sustainability

Providing high resolution rain information

City of Gothenburg, 3, SMHI, Sweden



The challenge

- Extreme weather events are increasing
- Many cities risk flooding

The solution

- Measure rainfall in real time utilizing signal disturbances in microwave links from cellular networks.
- Microwave signal disturbances from rain are analyzed calculating rainfall.



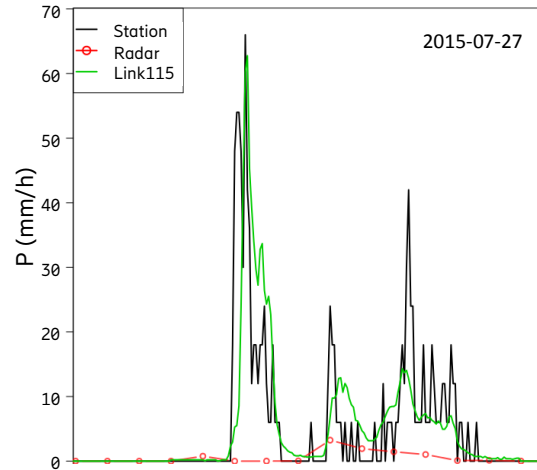
The result

Compared to existing weather radar, microwave based measurements result in higher spatial and temporal resolution. Utilizing existing hardware in commercial cellular networks providing a cost efficient solution for detailed rainfall measurements.



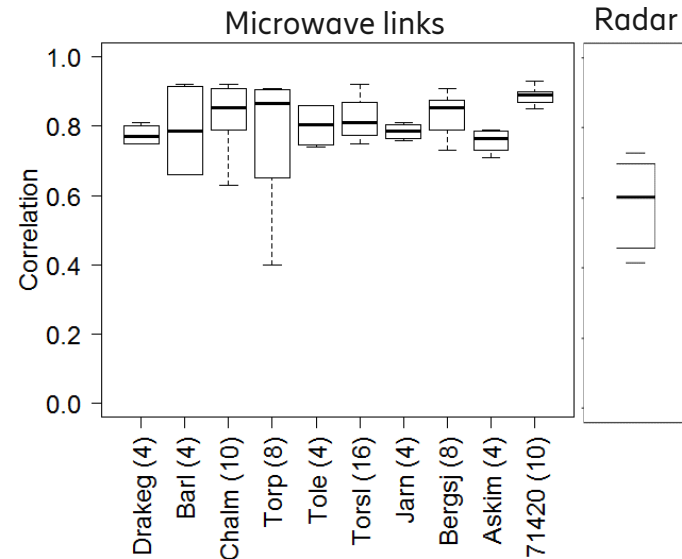
Resolution & correlation

Example data from Gothenburg, Sweden

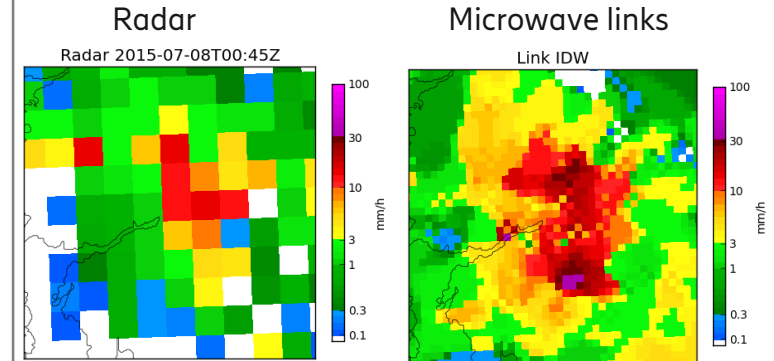


4 Hour Storm event (red dots = 15' radar intervals)

- Mobile network provide better ability to capture **peak intensities** compared with radar
- Better also at capturing **quick rainfall events**
- Bias of 30% compared to radar at 20%, rain gauge at 10%



Correlation	Min	Mean	Max
Microwave links	0,4	0,82	0,93
Radar	0,4	0,57	0,73
Nearby gauges	-	0,8	-



Dense MW Networks enable high resolution rain measurements

	Radar	Microwave links
Temporal resolution	15 min	10s - 1 min
Spatial resolution	4 km ²	100-1 000 m
Vertical sampling	1.2 km	25 m

Saving lives with massive IoT

Telecom operator, China



The challenge

1. Dangerous geological terrain can be a source of catastrophes, e.g. earthquakes, landslides and other natural disasters

The solution

Sensors monitor land movement and trigger an alarm, warning nearby authorities and people, through nb-IoT broadcast system



The result

A simulation and demonstration of how:

1. Movement on a mountain,
2. Determined to risk becoming a landslide
3. Triggers cell broadcast to all mobile devices in an area.



Reducing emissions from transports

Einride, Telia, Sweden



Challenge

Transportation with fossil-fuel trucks are a major pollution factor and a safety hazard on the roads.

Solution

Ericsson, Telia and Einride are co-creating a sustainable transport ecosystem by connecting all-electric, automated vehicles with 5G



Impact

The solution reduces harmful emissions, with the potential to bring about a 90 percent reduction in CO2 emissions (Swedish electricity mix) and the elimination of nitrogen oxide (NOx) emissions, particles (PM 2,5 and above) as well as noise.



