

A dark gray background with a subtle, intricate topographic map pattern. The map features various contour lines and shaded regions, creating a textured, three-dimensional effect. The word "HISTORY" is centered in a bold, white, sans-serif font.

HISTORY

A dark gray background with a subtle, intricate topographic map pattern. The map features various contour lines and shaded regions, creating a textured, three-dimensional effect. The word "DEFINITION" is centered in the middle of the image in a bold, white, sans-serif font.

DEFINITION

Definition and terminology



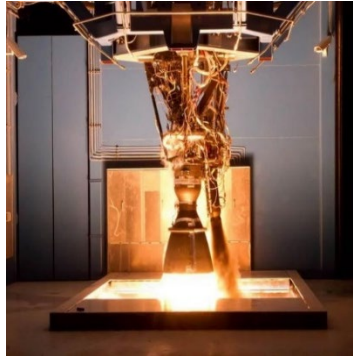
PROTOTYPE

A first, often fully functional, design or version of a construction.



TEST

Method for determining the characteristics of an object or idea. **Beta test**, **A/B-testing**, etc. are terms based on the same principle, but vary depending on industry or phase of development.



TESTING OPERATION

Testing operation means that an object is exposed to maximal stress or pushing its ability to its limits. May vary from prototype development to refinement of immaterial properties.



TESTBED

Unit, plant, platform or equipment to perform rigorous, transparent, and replicable tests of an idea or equipment. Preferably limiting the risks associated with a live test.



TEST FACILITY

Location or situation where objects and ideas may be tested under controlled conditions.



PILOT TEST

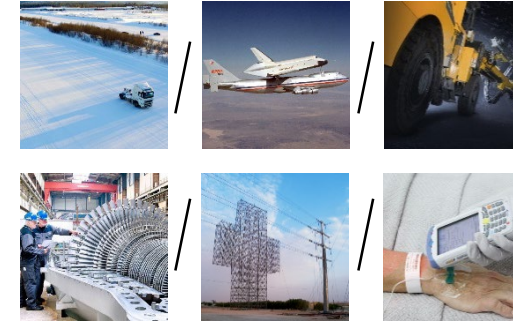
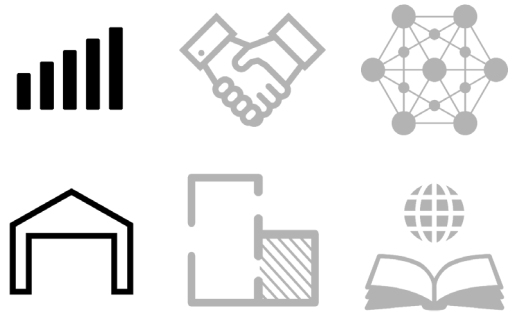
Refers to testing the developed project before a full scale launch. Often segments of the relevant population is involved, in a delimited part of the real environment.

INTERNATIONAL
OUTLOOK

-

TEST &
DEMONSTRATION

Competitors often offer limited services within a niche area



Business models: Full-service & Facilities

The most common business model amongst researched competitors is either full-service, meaning properties and machinery is adapted to a specific type of tests – or an open facility where customers bring their own test-equipment.

In the former case customers are limited by the high level of specialization and thus have a limited possibility to adapt and change the test site, where as in the latter the customer is only limited by their own capabilities.

Category: Clear niche

It is unusual for test operators to offer their services outside a specific category or industry. This means that the international competition, as a result of their business model, often are highly specialized within their respective niches. An immediate consequence of this is that the competition are often limited to a specific industry in one area.

Concept & Marketing – Generally on a low level

Average concept amongst researched test operators

Many of the researched organizations are badly conceptualized and packaged – it is generally hard to understand their offerings and whether they are open to other organizations.


The JOSE-Network at NICT is a relatively representative example of the average level regarding concept & content.

- Clear focus on the technical aspects
- Limited information about purpose
- Not clear where to find more information or how the purchasing process is structured
- Relatively poorly designed content
- Contact information is available, but generally “Information” emails rather than a specific receiver

JOSE is a network of sensors, databases and virtual machines meant to develop IoT technology all over Japan. NICT have established the network which are open to researchers to connect to.



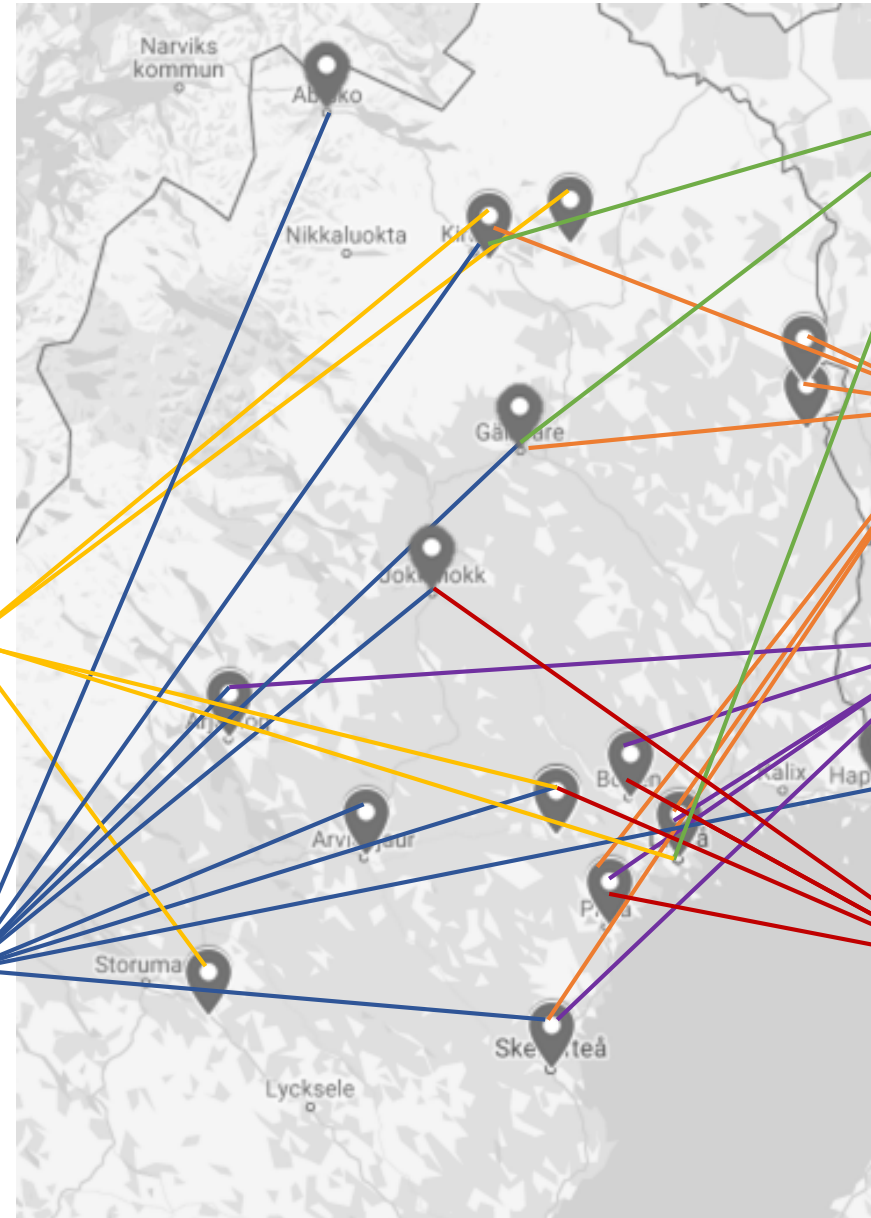
→ jose-ops@ml.nict.go.jp

A dark gray background with a subtle topographic map pattern, showing contour lines and terrain features in a lighter shade of gray.

TEST &
DEMONSTRATION
IN THE NORTHERN
PART OF SWEDEN
(DEMO NORTH)

DEMO NORTH CLUSTER

Different industries have different main needs, even if many of them overlap. There are over 40 demo and test actors in the north, which can be clustered after their industry. Below are some of their most important assets and needs.



Space & Aviation

Natural resources

- Free airspace
- Large land areas
- Secluded environment for secretive tests
- Sparsely populated

Technologically advanced

- Educated labor force
- Research institutes and academia

Vehicles & Transport

Natural resources

- Winter roads & lakes
- Climate controlled halls
- Suitable land
- Secluded environment for secretive tests
- Sparsely populated

Technologically advanced

- Experienced test-pilots
- High-tech data verification systems

Healthcare & Urban planning

Technologically advanced

- Educated labor force
- Urban environments
- Connection to domestic and international networks
- Population to carry out tests on

Materials

Natural resources

- Mineral and ore findings
- Renewable energy

Technologically advanced

- Proximity to relevant industries
- Large industrial customers
- Research institutes & academia

Energy

Natural resources

- Available renewable energy sources
- Fossil free energy sources
- Available residue products for bio-fuel production

Technologically advanced

- Infrastructure
- Research institutes and academia
- Large and medium sized customers
- Test & Demo Bio-refineries

Telecom & IT

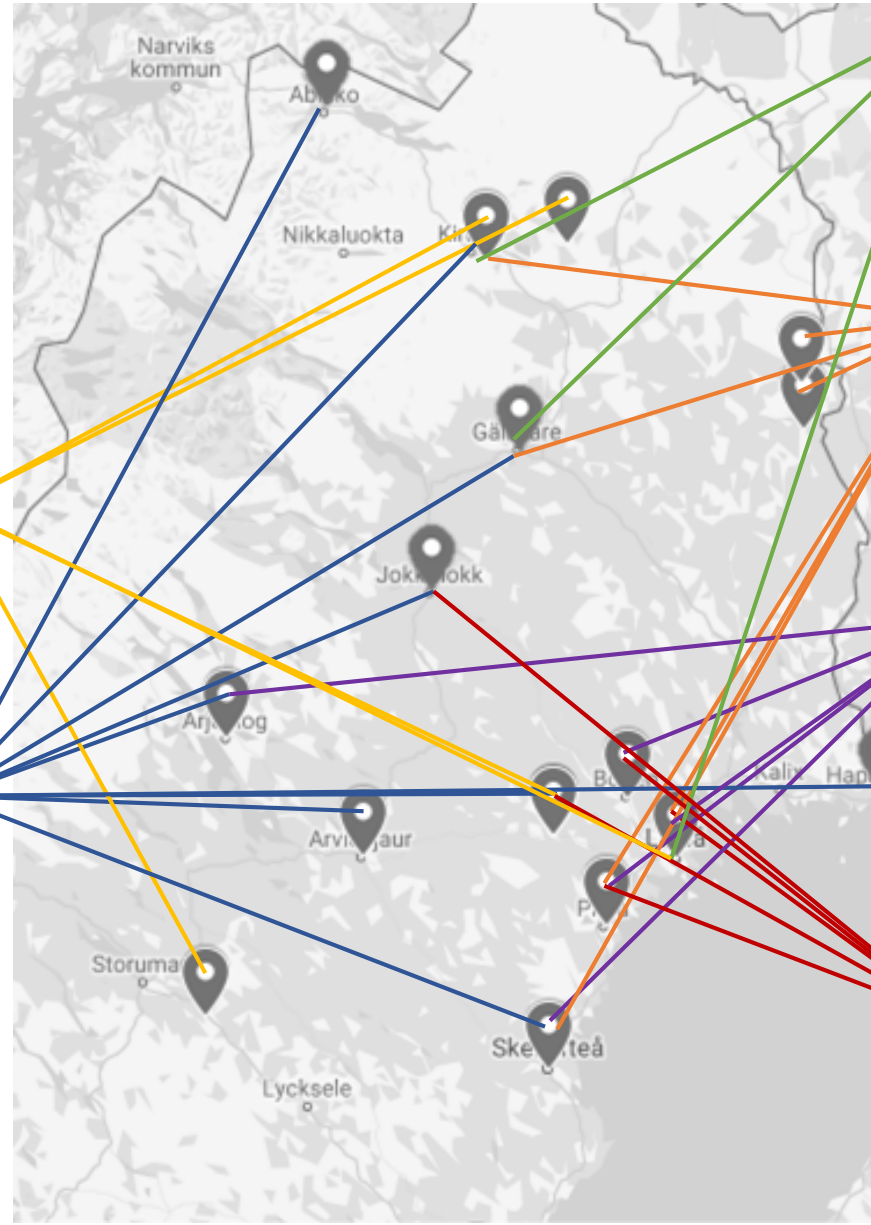
Natural resources

- Access to abundant and renewable energy
- Cold climate
- Mix between sparsely populated and urban environments

Technologically advanced

- Educated labor force
- Research institutes and academia
- Population to carry our tests on
- Urban infrastructure (Hotel, conference centers)

ACTORS IN DEMO NORTH



Space & Aviation

- Kiruna Flygplats Kiruna Facility
- Esrange Kiruna Full service
- Testsite Gunnarn Airport Storuman Facility
- North European Aerospace Test range Vidsele
- IRF
- LTU

Vehicles & Transport

- Icemakers Arejplög Full service
- Arctic Falls Älvsbyn Facility
- Arctic Arc Lappland Full service
- Rail test nordic Skellefteå Not active yet
- Swedish Proving Ground Association Olika platser Facility/ Full service
- Malmbanan Abisko Private
- TrV Haparanda – Weigh in motion Haparanda Private
- LTUS

Healthcare & Urban planning

- Testbädd Personcentrerad närsjukvård Co operation in Norrbotten Advisory
- Testbädd Aktivt och hälsosamt åldrande Co operation in Norrbotten Facilitation
- Testbädd Malmfälten Gällivare & Kiruna Full service

Materials

- Arctic Tests Pajala Facility
- Swerim (20-tal olika testbäddar) Luleå Full service
- Prisma - Systemanalys och Processintegration Luleå Full service
- RISE Luleå, Piteå Full service

Energy

- Future Eco Boden Facilitation/ Facility
- Facebook Data Center Luleå Facility
- Energy Technology Center Piteå Full service/ Facility
- Solar Test Bed (Sun Cold) Piteå Experiment
- Vindkraftscentrum Piteå & Arjeplog Full service
- Northvolt Skellefteå Full service

Telecom & IoT

- RISE SICS North Luleå Full service
- Testbädd för digitalisering och IT-infrastruktur Luleå Facility
- Facebook Luleå Facility
- Mobilaris Luleå Full service

ACTORS AND CLIENTS IN DEMO NORTH

ACTORS



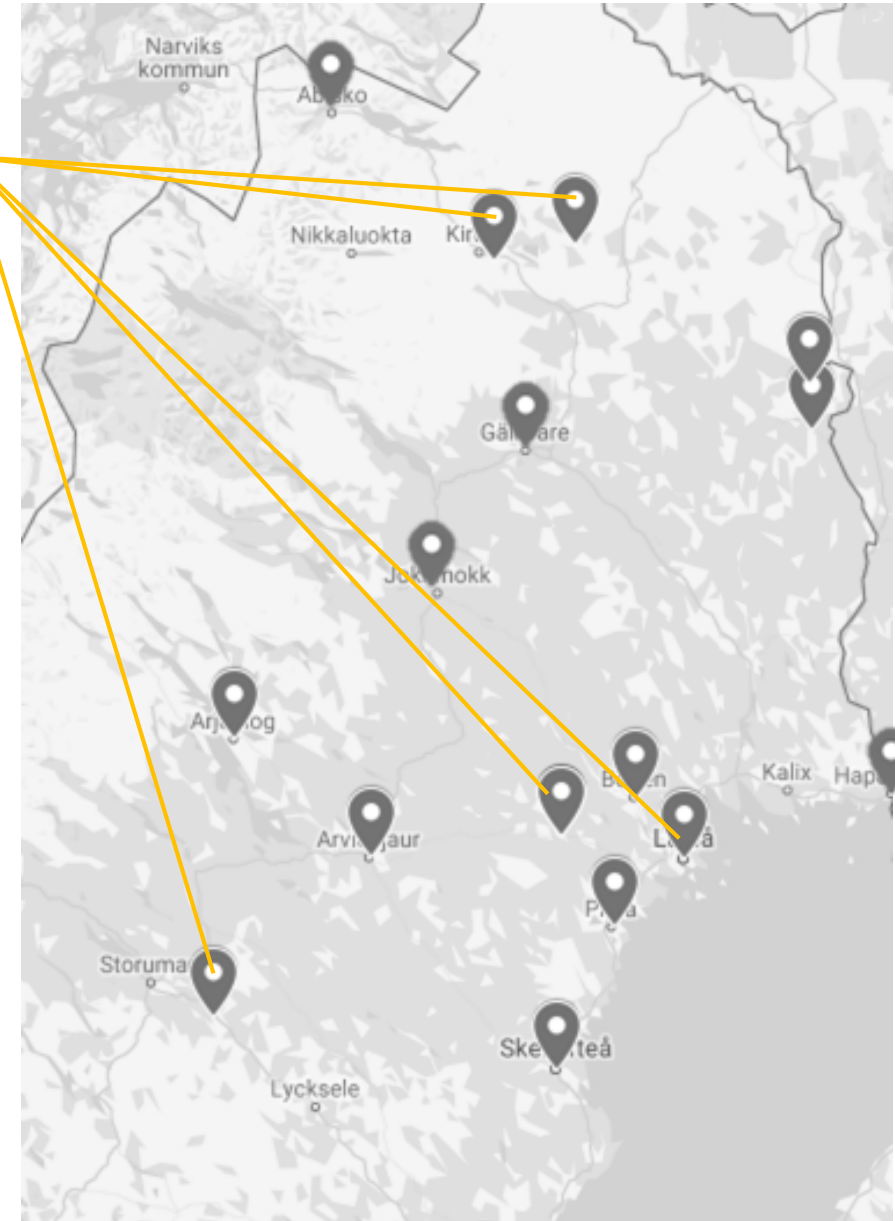
INSTITUTET FÖR RYMDFYSIK
Swedish Institute of Space Physics



CLIENT



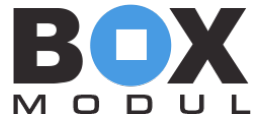
Space & Aviation



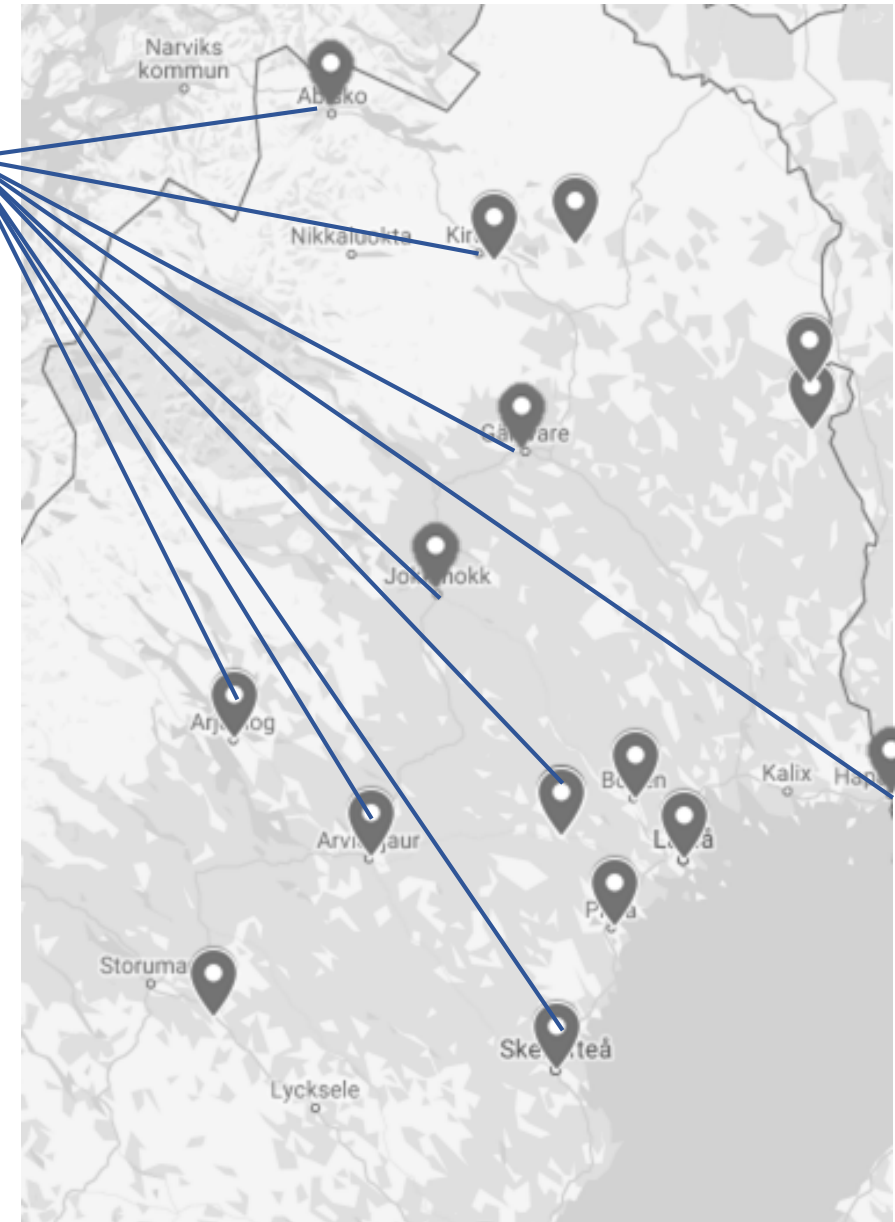
ACTORS AND CLIENTS IN DEMO NORTH

Vehicles & Transport

ACTORS



CLIENT



ACTORS AND CLIENTS IN DEMO NORTH

Healthcare & Urban planning

ACTORS



CLIENT



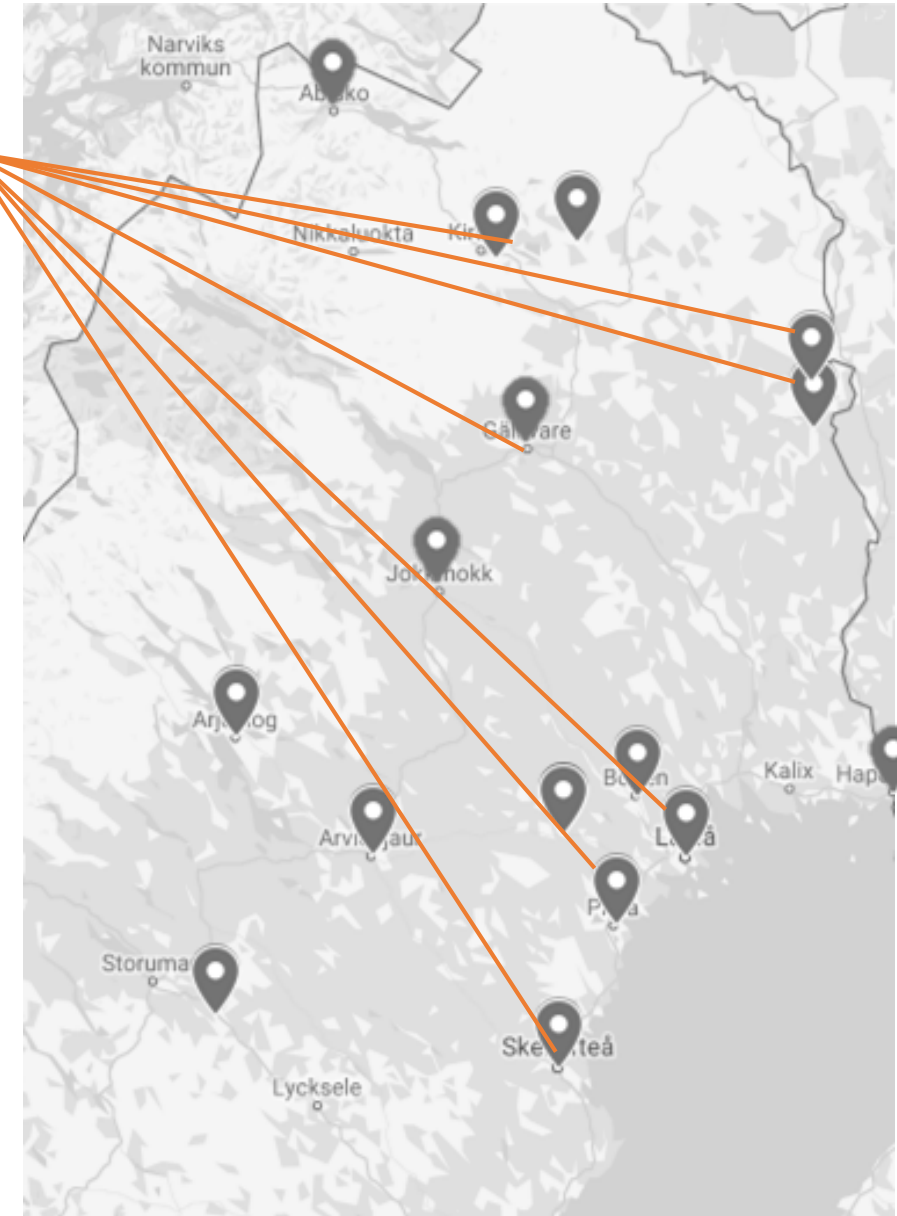
ACTORS AND CLIENTS IN DEMO NORTH

Mining & Metal

ACTORS



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ACTORS AND CLIENTS IN DEMO NORTH

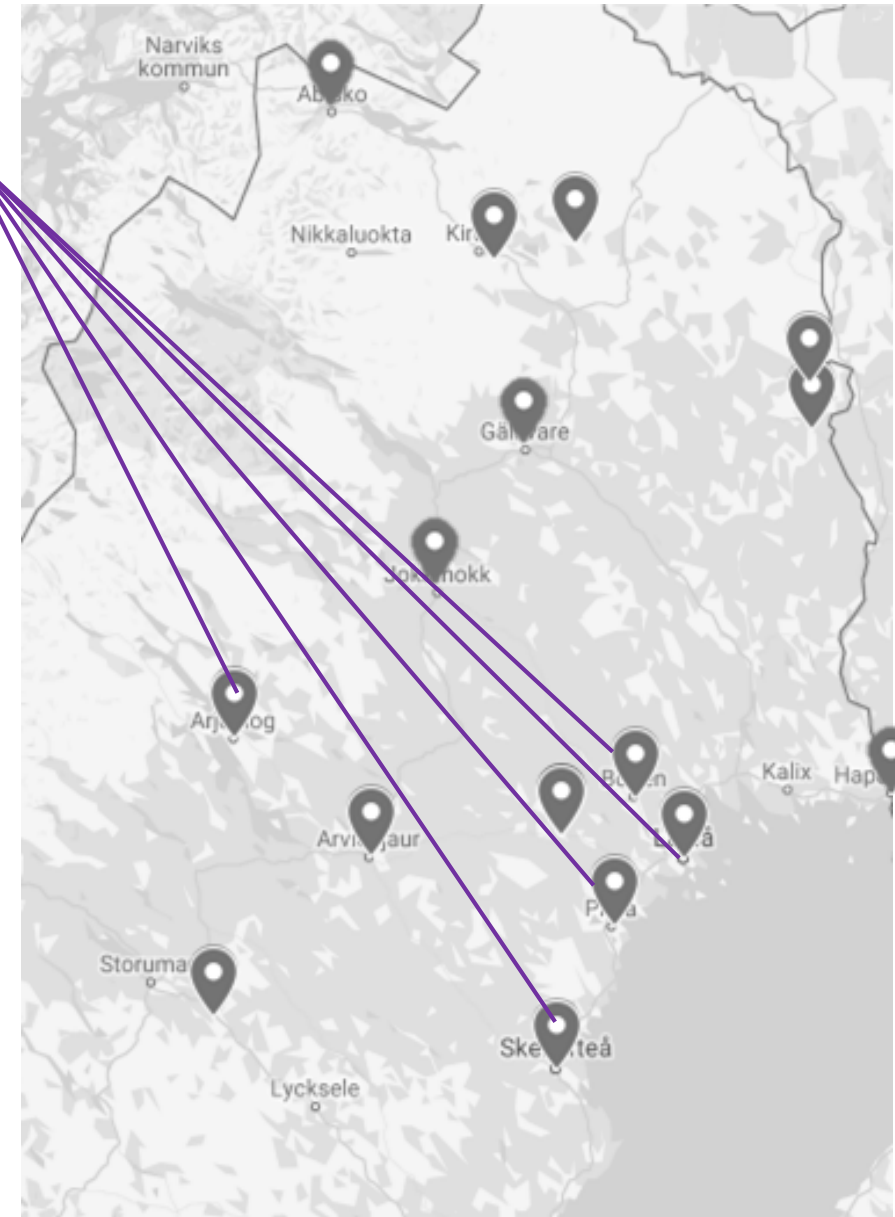
ACTORS



CLIENT



Energy



ACTORS AND CLIENTS IN DEMO NORTH

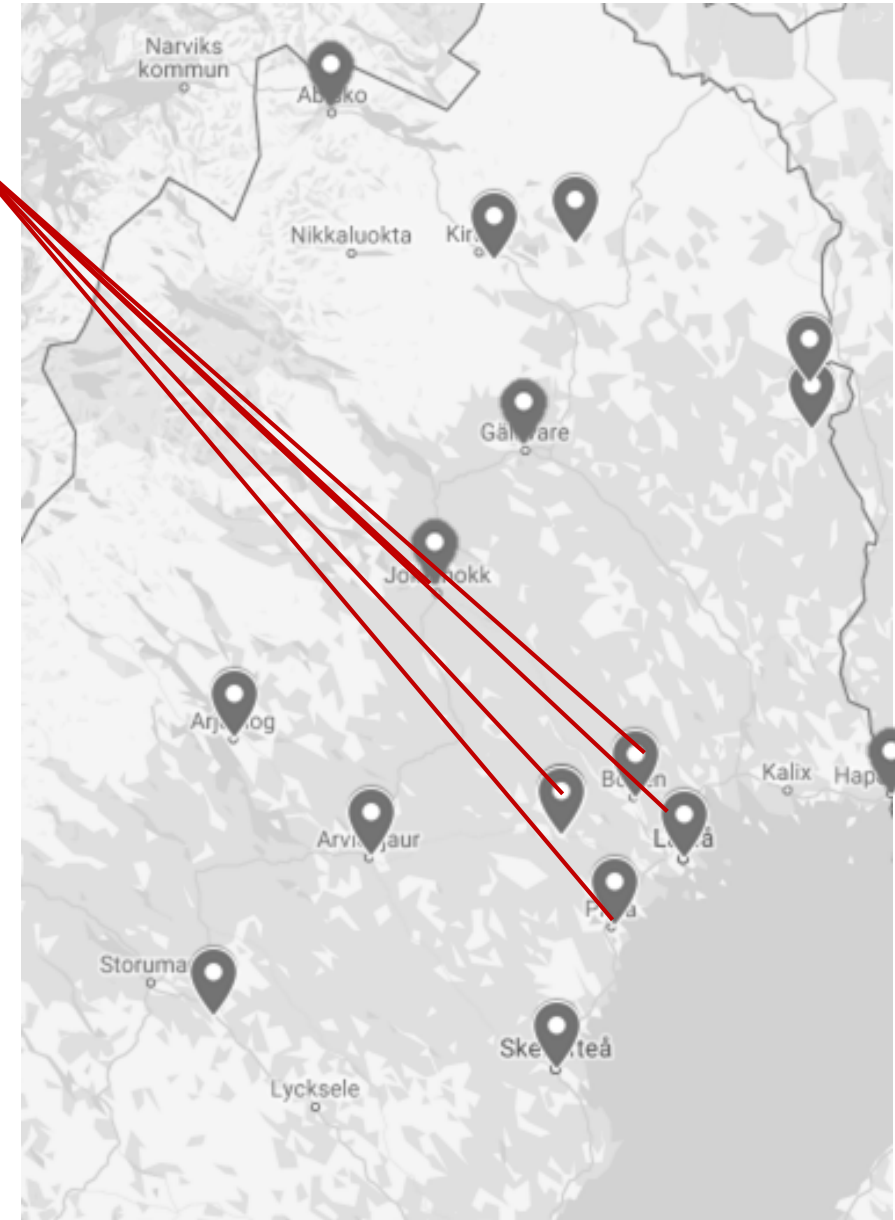
ACTORS



CLIENT



Telecom & IT



INDUSTRY



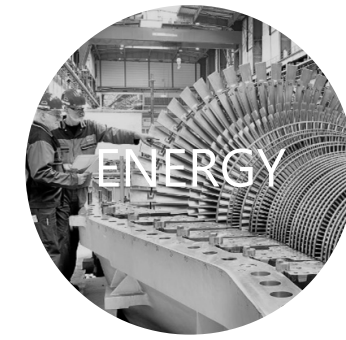
TRANSPORT & VEHICLES



SPACE & AVIATION



MATERIALS



ENERGY



TELECOM & ICT



HEALTHCARE & URBAN PLANNING

ASSETS

Cold climate, access to vast lands and 100% renewable energy

Space and aviation tests require large areas, neutrality and technical competence

Large supply of minerals, biomass and green energy has laid the foundation for a substantial material industry

Transition to renewable energy requires tests in customized facilities

One of the worlds first test beds for 5G testbeds and a unique test facility for AI, edge, micro grids, and data centers are located in Northern Sweden

Healthcare and urban planning require a combination of governmental and private actors.

ACTOR


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The natural first choice for real-world testing in Europe

Bothnia Bioindustries Cluster

Bothnia Bioindustries Cluster

CLIENT

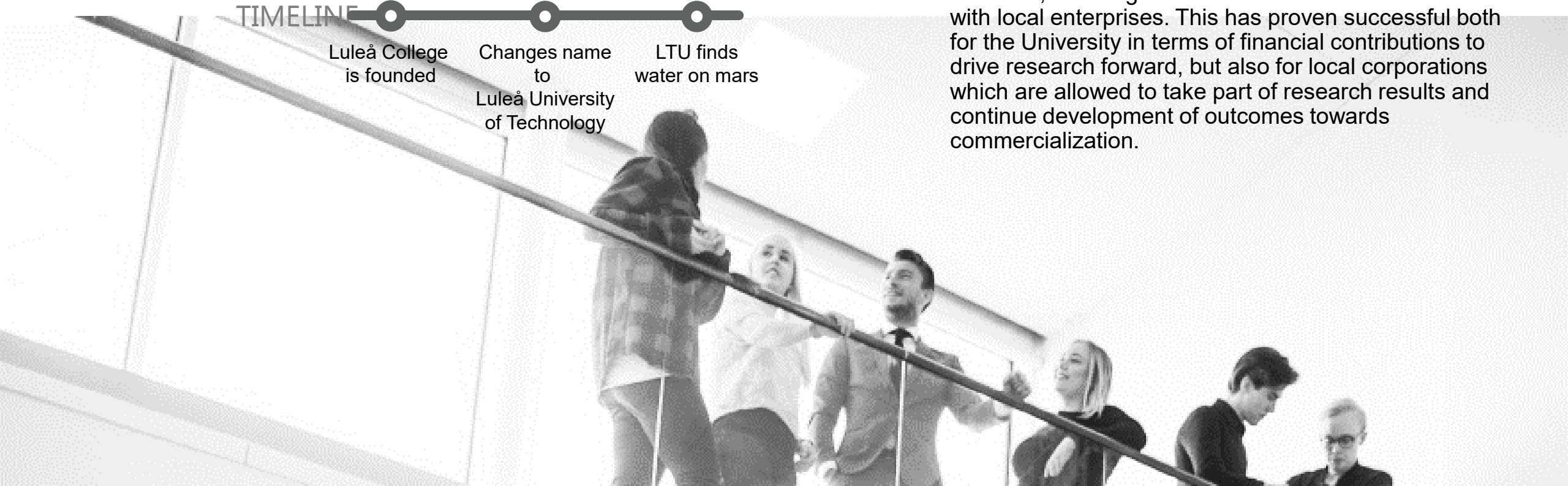
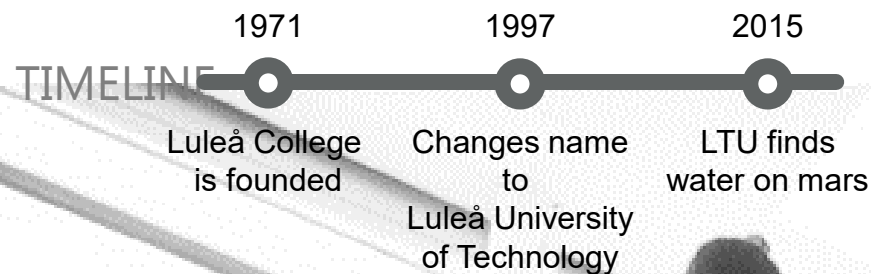
A dark gray background with a subtle topographic map pattern, showing contour lines and terrain features in a lighter shade of gray.

SOME OF THE
INNOVATORS IN
DEMO NORTH

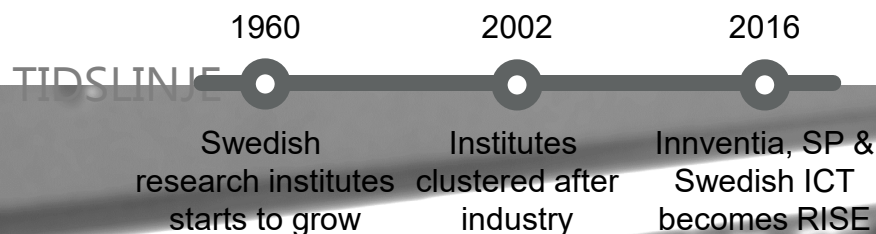
LULEÅ UNIVERSITY OF TECHNOLOGY: FOUNDER OF THE REGION'S KNOWLEDGE

Luleå University of Technology (LTU) was founded in 1971, and has given its strong research focus ever since been a major contributor to the region's development, through attracting companies and supplying highly educated labor.

The university is Europe's largest within applied sciences, enabling them to establish collaborations with local enterprises. This has proven successful both for the University in terms of financial contributions to drive research forward, but also for local corporations which are allowed to take part of research results and continue development of outcomes towards commercialization.



RISE SICS: LEADING RESEARCH & DEVELOPMENT WITHIN ICT



RISE SICS North is part of a collection of Swedish research institutes within a variety of areas known as RISE Research Institutes of Sweden AB.

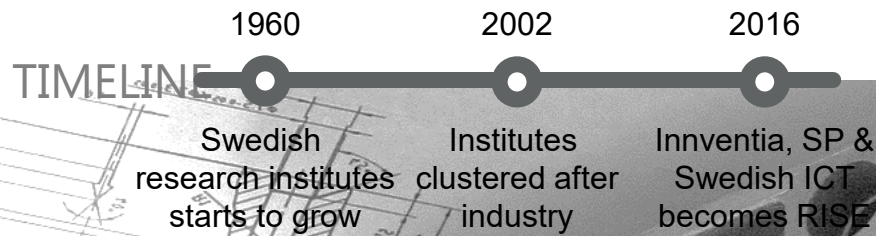
SICS is specialized in communication and ICT technology, and has long been on the research frontier in areas such as AI, big data, cloud-technology, data processing, datacenters and IoT.

Through providing expertise, knowledge and experimentation opportunities to commercial corporations within the area, SICS North seeks to strengthen their customers' international competitiveness.

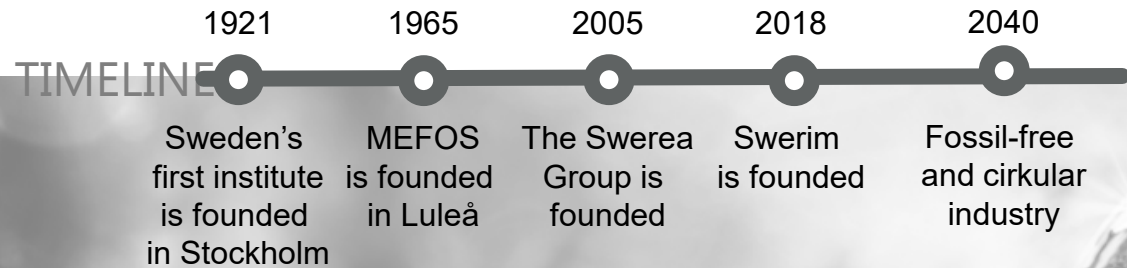
RISE SICOMP: DEVELOPING THE PRODUCTS & COMPONENTS OF TOMORROW

RISE is a collection of Swedish research institutes within a variety of areas. One area of expertise is development and production of components in composite materials through SICOMP. Main focus has been aimed at research and commercialization of materials, processing and production.

RISE SICOMP's materials are used in a variety of industries, including space & aviation, vehicles, marine, and construction. The research institute has lately proven a crucial contributor to other industries in the region, including carbon fiber plastic for the electrification of the global vehicle fleet.



SWERIM: CREATING INDUSTRY BENEFIT



Swerim conducts needs-based industrial research and development concerning metals and their route from raw material to finished product. We wish to strengthen industrial competitiveness by enabling improved product quality, greater resource efficiency and more sustainable manufacturing processes. Our vision is a fossil-free and circular industry.

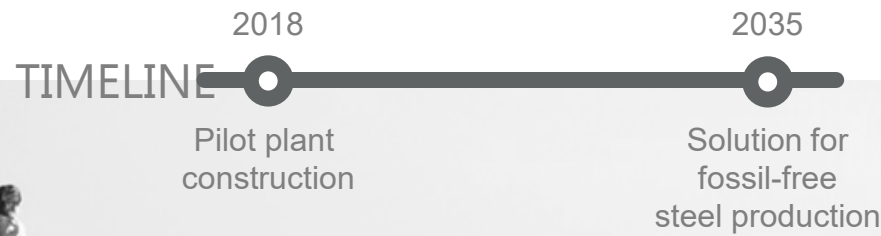
Swerim has unique leading-edge expertise, unique equipment for experimentation and unique test facilities. This means that our research can be applied practically in industry. In Luleå, for example, we have:

- A pilot plant for research in the use of hydrogen in industrial processes.
- Testbed for fluidized-bed technology enabling more efficient extraction of resources from raw materials and recycling of various kinds of waste.

We are driven by a desire to find innovative and applicable solutions. Our personal commitment guarantees benefit for industry.



HYBRIT: TOWARD FOSSIL- FREE STEEL.



HYBRIT is a joint venture between SSAB, LKAB and Vattenfall, started in 2016.

HYBRIT endeavors to revolutionize steel-making, by replacing coking coal, traditionally needed for ore-based steel making, with hydrogen. The result will be the world's first fossil-free steel-making technology, with virtually no carbon footprint by direct reduction via hydrogen.

During 2018, work started on the construction of a pilot plant for fossil-free steel production in Luleå, Sweden. The goal is to have a solution for fossil-free steel by 2035. If successful, HYBRIT means that together Sweden's CO2 emissions can be reduced by 10% and Finland's by 7%.



SUNPINE: RENEWABLE DIESEL.



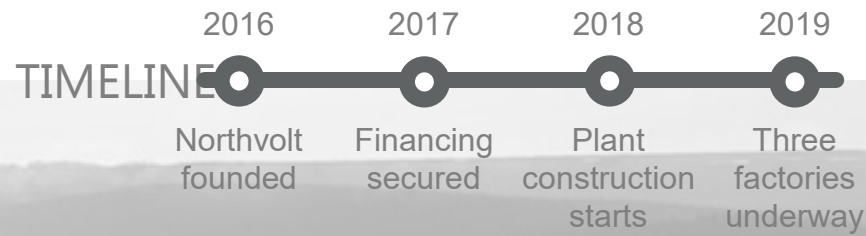
Sunpine are a world leading biorefinery, producing biofuels and other bio-products from residue products from the forestry industry.

Through synergies with the regions forestry, and utilizing the 100% renewable energy of the region, Sunpine are aiming to scaling up production of biofuel in a sustainable way.

By continuously investing in increased capacity, Sunpine seeks to demonstrate to the world that biofuel are scalable and indeed part of the future of sustainable transportation.



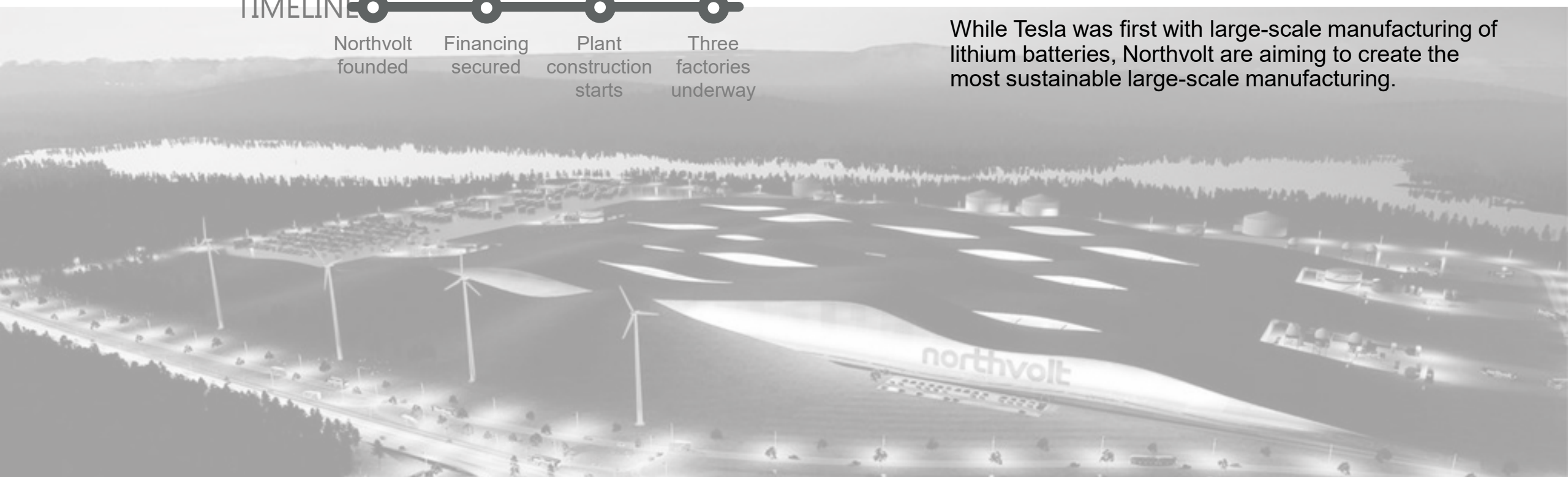
NORTHVOLT: NEXT GEN GREEN BATTERIES.



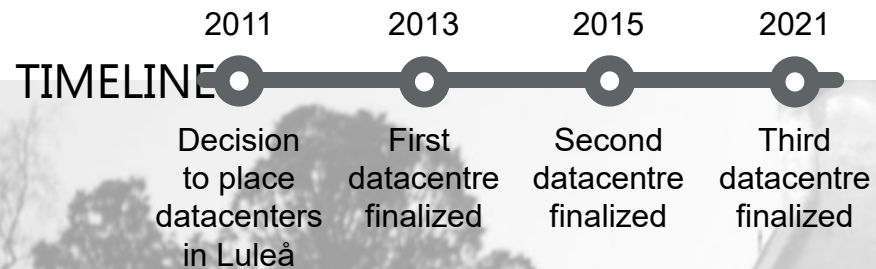
According to the IPCC, to keep global warming below 1.5 degrees, 100 million electric vehicles must be added to our roads globally by 2030. Northvolt, founded in 2016 by Tesla's former VP Peter Carlsson, aims to produce the world's most environmentally friendly batteries.

Their mission is for their batteries to have the smallest possible carbon footprint and to be 100% recycled, in order to facilitate the world's transition to be powered by renewable energy.

While Tesla was first with large-scale manufacturing of lithium batteries, Northvolt are aiming to create the most sustainable large-scale manufacturing.



FACEBOOK: PAVING THE WAY FOR GREEN DATACENTERS.



In 2014, a study revealed that datacenters globally accounts for about 2% of the world's total greenhouse gas emissions. With data-traffic doubling every four years, this is expected to increase to 3.5% globally within a decade, surpassing the emissions from aviation.

In 2011, Facebook made the strategically important decision to locate their new datacenters in the Norrbotten region. Their decision to locate there was built on not only a business case, but also a sustainability case .

Since their establishment in Luleå, Facebook have continuously been using the location as a deployment region for new datacenter technology, with the ambition of making datacenters more sustainable and cost efficient. In doing so, they have started an industry displacement where not only tech giants are pondering over these questions, but also smaller actors.

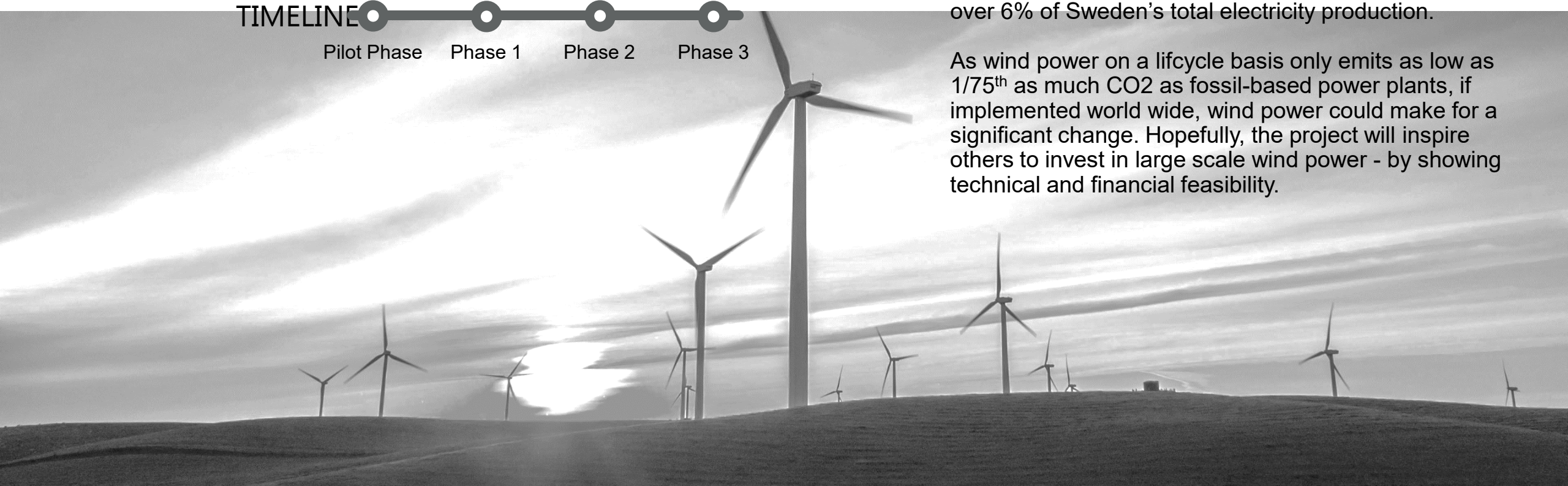
MARKBYGDEN: LARGE SCALE WINDFARM



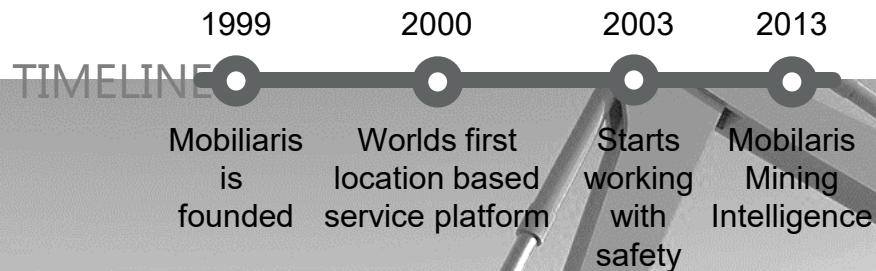
GE and Enercon are underway to raise a wind power farm in Markbygden, Piteå that will upon completion be one of the largest in Europe.

With electricity productions being one of the largest contributing industries to CO2 emissions, shifting the worlds energy supply towards renewable sources would make a significant impact on our carbon footprint. Upon completion Markbygden will supply over 6% of Sweden's total electricity production.

As wind power on a lifecycle basis only emits as low as 1/75th as much CO2 as fossil-based power plants, if implemented world wide, wind power could make for a significant change. Hopefully, the project will inspire others to invest in large scale wind power - by showing technical and financial feasibility.



MOBILARIS: DIGITALIZING INDUSTRY



Mobilaris was founded in 1999 and did early show their ability to develop, implement and commercialize new innovations when they launched the worlds first location-based service platform one year after their foundation. Ever since, Mobilaris focus have been problems and efficiency losses that can be solved through implementation of digitalization. Their leading offer have been to digitalize corporation faster than their competitors have been able to.

Mobilari's has lately focused on mining and industry, two areas that account for a large share of our global CO2 emissions. In these industries, digitalization has the opportunity to significantly reduce CO2 emissions – why the quick implementation Mobilaris can offer is of great importance.

A dark gray background with a subtle topographic map pattern, showing contour lines and elevation changes. The text is centered in a white, bold, sans-serif font.

THE DEMO NORTH OFFER

DEMO NORTHS ASSETS



VAST LAND AREAS

The regions vast and to large degree uninhabited areas opens up for demonstration and tests that require a lot of space, or need to be kept away from the publics curious eyes



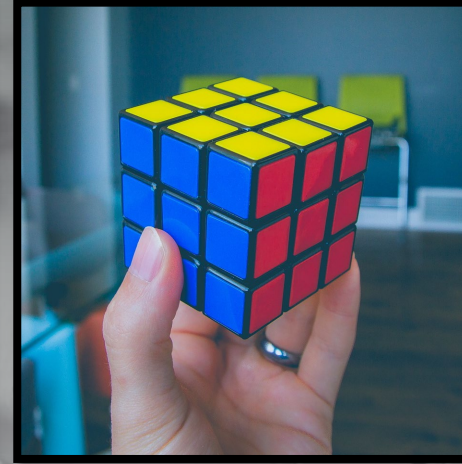
GREEN ENERGY

With 100% renewable energy in the region, demonstration and test activities can be carried out without environmental impact, and to a great price due to low energy prices.



ARCTIC CLIMATE

To perform demonstration and tests in cold climate is necessary to most innovations and products. The regions climate allows for tests in the cold during large parts of the year.



"NO PROBLEM PEOPLE"

The people in the region have become famous for their solution-oriented style, always managing to work around problems. NASA have called the inhabitants "The no problem people" as a result.



Luleå University of Technology

Luleå University of Technology and local research institutes have proven a great asset for the demonstration and test industry in the region, following its dedication to applied research and contribution to the local labor force with highly educated individuals.

DIFFERENTIATING DEMO NORTH



TEST/DEMO FOR INDUSTRIAL SCALE

"Time-to-market" is of highest importance to most businesses today. After practicing since the 60s in testing new products, the processes have been refined and are today quicker than in most other places around the world.



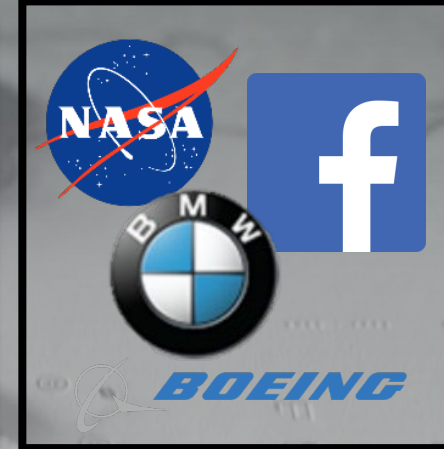
WIDTH AND DEPTH

There is no place in the world that hosts so many areas of demo/test. All this is supported by the society, applied research at the local university & research institutes, and access to renewable energy.



CLEAR BUSINESS CASE

All areas (vehicles, space/aviation, mining/metals, ICT, Urban planning) are expanding with more and more customers and actors each years.



PROVEN TRACK RECORD

That a single region can attract several of the most renowned brands in the world is impressive. That very few are aware of this must change.



JOIN THE JOURNEY

Demo North will have the largest impact on global CO2 emissions in the world – as a result of efforts to reshape entire industries.

INDUSTRY



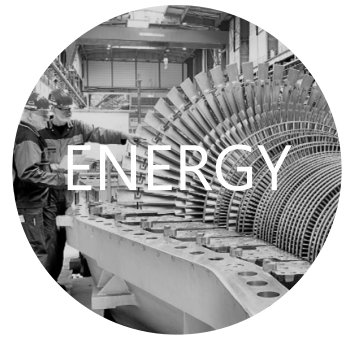
TRANSPORT & VEHICLES



SPACE & AVIATION



MATERIALS



ENERGY



TELECOM & ICT



HEALTHCARE & URBAN PLANNING

ASSETS

Cold climate, access to vast lands and 100% renewable energy

Space and aviation tests require large areas, neutrality and technical competence

Large supply of minerals, biomass and green energy has laid the foundation for a substantial material industry

Transition to renewable energy requires tests in customized facilities

One of the worlds first test beds for 5G testbeds and a unique test facility for AI, edge, micro grids, and data centers are located in Northern Sweden

Healthcare and urban planning require a combination of governmental and private actors.

ACTOR

S

The natural first choice for real-world testing in Europe

CUSTOMERS

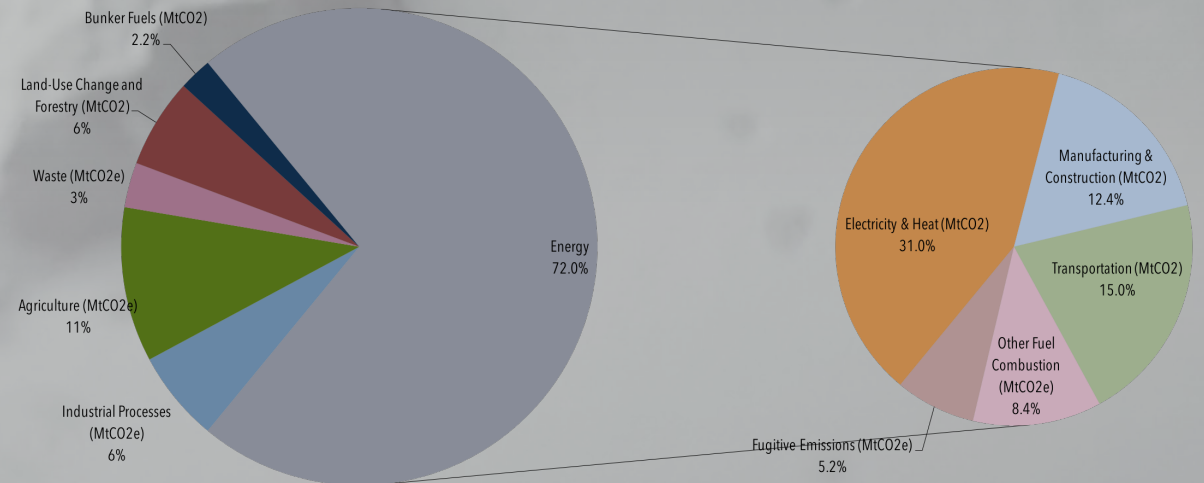
The background of the image is a dark, monochromatic topographic map. It features intricate contour lines and shaded relief that represent the terrain of a region, likely Europe, given the shape of the landmasses. The lines are more densely packed in some areas, indicating steeper slopes, and more widely spaced in others, indicating flatter terrain. The overall color palette is a range of dark greys and blacks, creating a textured and somewhat abstract appearance.

ENORMOUS GLOBAL CHALLENGES

WE HAVE 11 YEARS TO SAVE THE PLANET. LET'S SPEED UP INNOVATION.

UN's climate change body IPCC states that we have 12 years of leeway in reaching out global targets for limiting the global temperature increase to 1.5°C. To get there, we need to implement far-reaching changes in policies, consumer demands and culture. But equally important is that we manage to speed up sustainability innovation. To make this possible, innovators need the right preconditions and partners. **Enter Demo North.**

GREENHOUSE GAS EMISSIONS BY SECTOR - 2013



RESEARCH SAYS NEW TECHNOLOGY NEEDS 20-30 YEARS TO TAKE SHAPE. WE NEED TO PROVE RESEARCH WRONG.

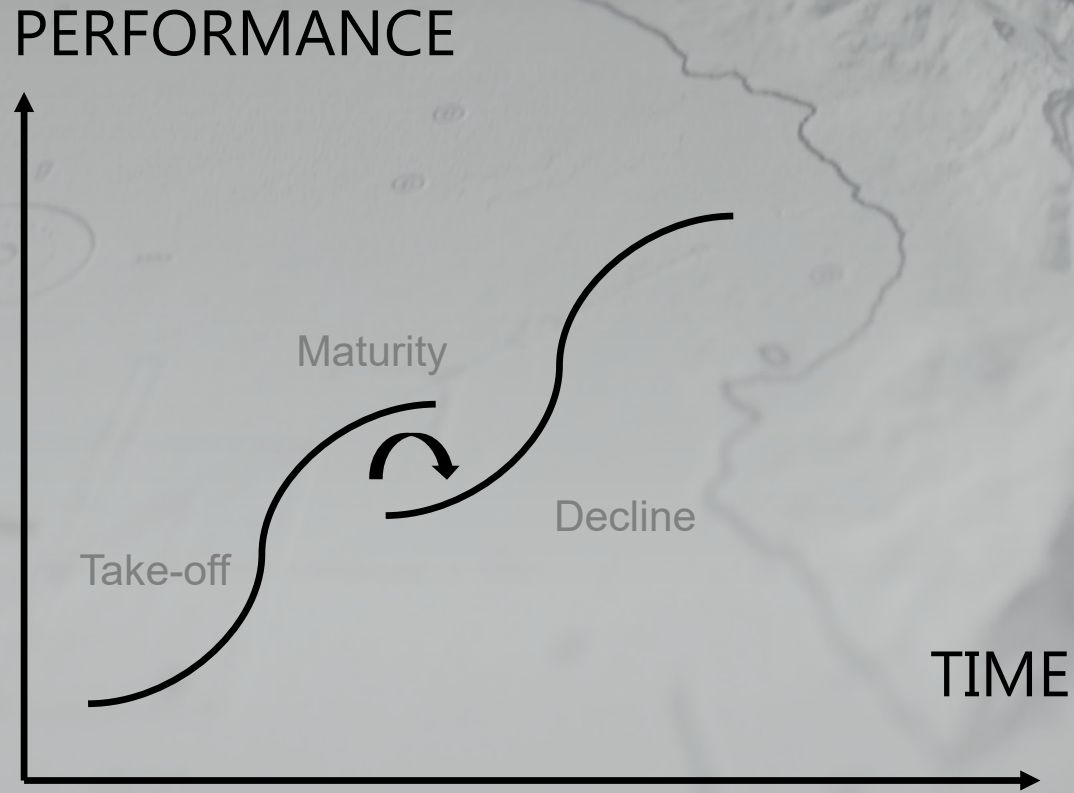
The formative phase of technology development – when technological systems begin to be put in place – takes 20-30 years, according to recent research.*

To make the necessary transition towards sustainable energy sources, the car industry has around 10 years to become electrified, data center operations have 10 years to become fossil free, and so forth. We have a pressing need to show that we can be faster than anyone thought possible.

*Source: Bento, N. & Wilson, C. (2016).

MINIMIZING RISK AND INDUSTRIAL SCALE

DEMO NORTHS CONTRIBUTION



Demo North's contribution to faster technological changes lies in speeding up the formative phase – and by that minimizing risks and allowing for industrial scale.

Since the start in 1967 our demos, which began with vehicles and military tests have today grown to include a variety of industries and actors. Demo North's recipe for success is shortening the formative phase.

Nurture sustainable: understanding the formative Phase. E.g. Hybrit

Organize innovation systems. E.g. Bothnia Bio industry Cluster

Resuse! Usage of software development in industrial production. E.g. Facebook

Technology-specific. E.g. Northvolt aligning value chains

Helpful policy. E.g. Wind power farms

*Source: Frishammar, J., Gustafsson, M., Enström, D., Engström, F. (2019)

The background of the image is a dark, monochromatic topographic map. It features intricate contour lines and shaded relief that create a sense of depth and texture, resembling a rugged terrain. The lines are more densely packed in some areas, indicating steeper slopes, while other areas are more open, suggesting valleys or plateaus. The overall color palette is a range of dark greys and blacks, with the white text providing a sharp contrast.

A GLANCE AT THE SUCCESS FACTORS

5 WORKSTREAMS TO GROW THE VEHICLE TEST INDUSTRY



INCREASE DEMAND FOR THE SERVICES

Through raising international awareness and interest



REFINE OFFERINGS & ENGAGE IN BUSINESS DEVELOPMENT

In order to offer more refined and higher value services



INCREASE GLOBAL COMPETITIVENESS

Through highlighting what differentiate the region from other regions



IMPROVE THE LOCAL INFRASTRUCTURE FOR TEST & DEMONSTRATION

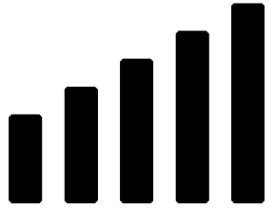
Through showcasing the positive effects of the industry on the entire region



INITIATE FORMAL RESEARCH & DEVELOPMENT

Through formal collaborations and structured R&D programs

Take a look at your business models



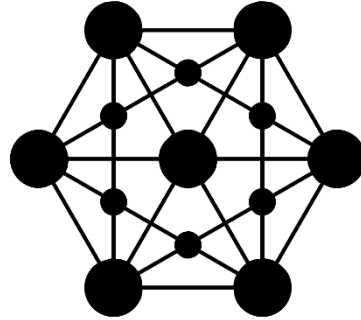
FULLSERVICE

All services and resources necessary in the testing. Includes facilities, equipment, personnel with necessary knowledge. All in-house with a clear connection to academia and relevant industry.



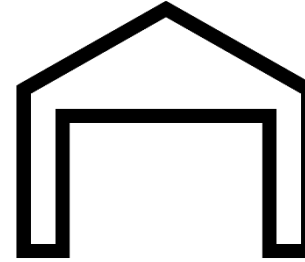
PARTNERSHIP

Especially valuable business model in cases with public/semi-public organizations, which can support financing, minimizing bureaucracy, share their networks and knowledge and open the door to other opportunities



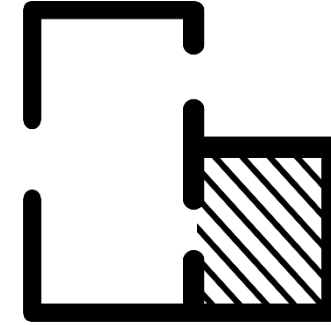
FACILITATOR OF ECOSYSTEMS

Coordinating organization for all involved stakeholders in establishing and operating test facilities. Shares information, network and knowledge



FACILITY

Offers the facilities, location, environment and climate for the customers to bring their own ideas and equipment. Suitable for customers with recurring products whom need freedom to construct their own tests.



PRIVATE ESTABLISHMENT

An offer to customers to locate their own test-facilities in proximity to existing test operators. Creates synergies with the existing industry in the area.



OPEN TESTBED

Just like open-source code, open testbeds are constructed to let all interested stakeholders use the infrastructure relatively freely. Oten in exchange for their gained insights through the tests in the test bed.

INDUSTRY



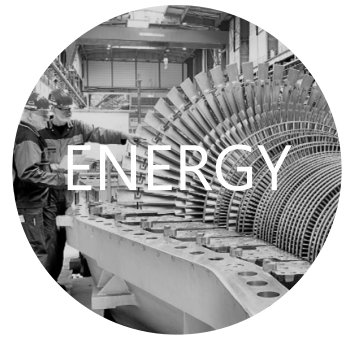
TRANSPORT & VEHICLES



SPACE & AVIATION



MATERIALS



ENERGY



TELECOM & ICT



HEALTHCARE & URBAN PLANNING

ASSETS

Cold climate, access to vast lands and 100% renewable energy

Space and aviation tests require large areas, neutrality and technical competence

Large supply of minerals, biomass and green energy has laid the foundation for a substantial material industry

Transition to renewable energy requires tests in customized facilities

One of the worlds first test beds for 5G testbeds and a unique test facility for AI, edge, micro grids, and data centers are located in Northern Sweden

Healthcare and urban planning require a combination of governmental and private actors.

ACTOR

S

The natural first choice for real-world testing in Europe

CUSTOMERS

A dark gray background with a subtle, intricate topographic map pattern. The map features various contour lines and shaded regions, suggesting a complex terrain with hills and valleys. The overall tone is monochromatic and professional.

LEVEL UP





[Home](#)

[Topics](#)

[Conference](#)

[Schedule](#)

[Logistics](#)

D^ DEMO NORTH

Large scale solutions, for a large scale purpose

2020.02.26-28

[Registration](#)



[Keynotes & Tech visits](#)



Demo North - a global summit

The northern part of Sweden



The background of the image is a dark, monochromatic topographic map. It features intricate contour lines that represent elevation changes across a terrain. The lines are more densely packed in some areas, indicating steeper slopes, and more widely spaced in others, indicating flatter ground. The overall color palette is a range of dark greys and blacks, giving it a technical and somewhat abstract appearance.

COLLECTION OF BENCHMARKS

Arizona Center for Algae Technology & Innovation

Fullservice

AzCATI är en testverksamhet baserad vid Arizona State University. De tillhandahåller på beställning alla typer av experiment och forskningsstudier av algbaserade biobränslen och biomaterial. De har kompetens och faciliteter in-house.

USP

Tydligt uttalat vilken kompetens och faciliteter de har. Nischat område som gör det lätt att hitta.



Styrkor i konceptet

Snygg design

Tydlig process

Bra bakgrund/motivering



mission

Connect

Serve as an intellectual and physical hub to foster local, state, national, and international research and education on algae-based solutions for a sustainable environment

Advance

Enable development of innovative and sustainable technologies for production of microalgae feedstocks for biofuels and bioproducts

Integrate

Foster collaborations among universities, national and industry to accelerate technology commercialization

Develop training and educational opportunities for training scientists and engineers for the industry

Developed to accelerate algae research and commercialization

about AzCATI

The Arizona Center for Algae Technology and Innovation (AzCATI), located at ASU's Polytechnic Campus in Mesa, serves as a hub for research, testing, and commercialization of algae-based products. These include biofuels, pharmaceuticals, nutraceuticals, and other algae biomass co-products. The center also serves as a learning environment for the next generation of scientists and engineers.

AzCATI provides open test and evaluation facilities for the algae industry and research community. The center can assess the performance of individual and combined unit operations across the algal value chain.

why algae?

Fast-growing algae offer enormous potential as a source of low-cost, sustainable biofuel. Algae produce lipids and oils in their cells that can be extracted and converted into renewable fuels such as biodiesel or aviation fuel. Unlike other biofuel sources, such as corn, algae do not require the use of arable farmland.

why Arizona?

With its available land, desirable climate, and abundant sunshine, the Southwest—and Arizona in particular—is an ideal location for growing algae. In addition, Arizona State University has been a pioneer in algae research for more than 30 years.

Scientists at ASU have developed fast-growing, high-oil-producing microalgal strains. They have also developed cultivation, harvesting, and extraction methods for mass culture and biomass production.



BIOREMEDIATION
CARBON CAPTURE

CO-PRODUCTS

NON-FUEL LIPIDS



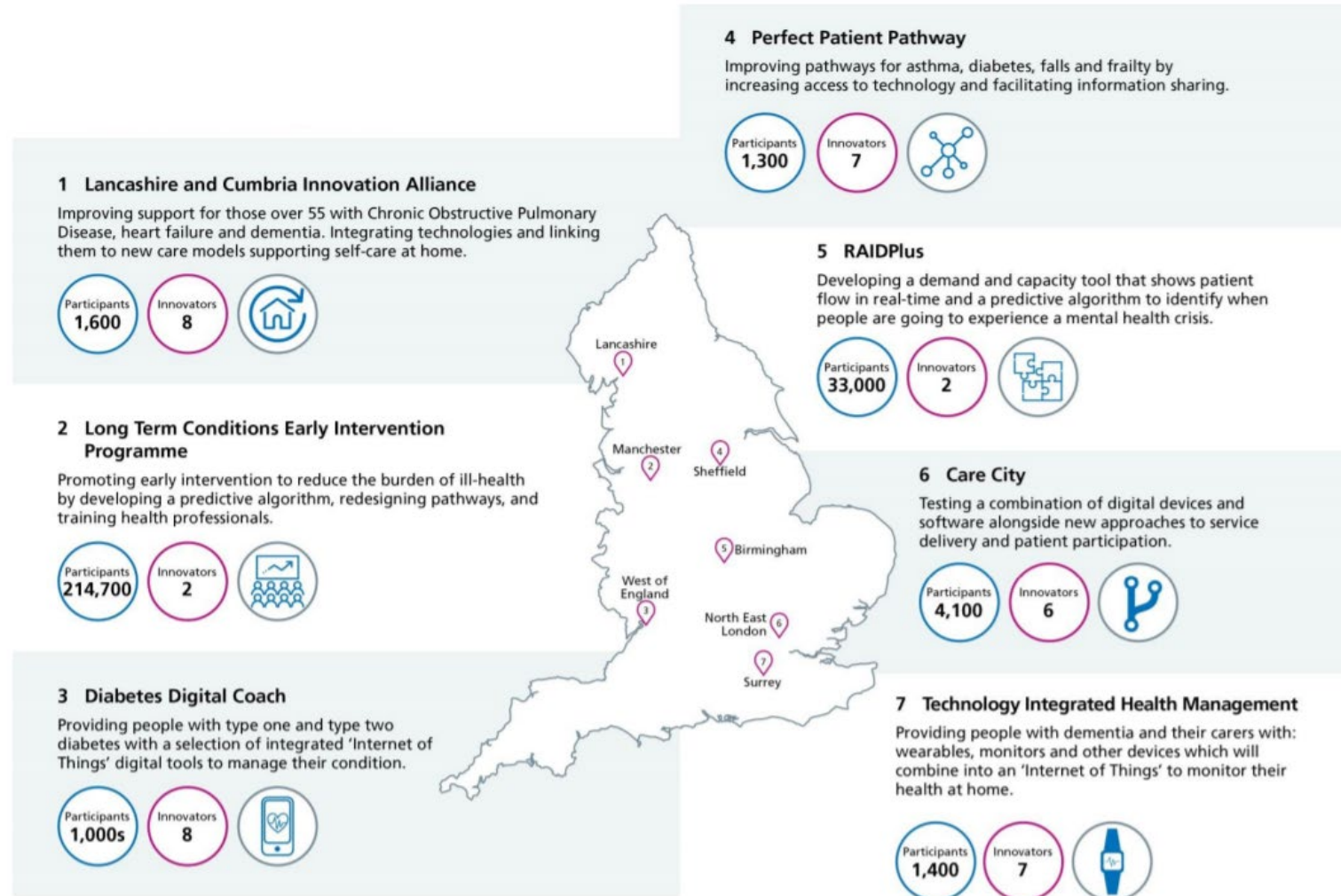
National Health Services Test bed programme

Partnerskap

NHS erbjuder en möjlighet för utvecklingsföretag att testa sina innovationer i en riktig miljö, under finansiering, övervakning och sanktionering av NHS. Detta innebär att företagen bedriver testverksamheten tillsammans med NHS, för att kunna utföra tester som annars inte varit möjliga.

USP

Som myndighet kan NHS erbjuda tillgång till testbäddar som dessa företag annars aldrig hade kunnat nå. NHS utgör utöver detta en stor resurs inom kontaktnätverk och kunskap.



Förklaring av vad testbädden både är – och inte är – till för.

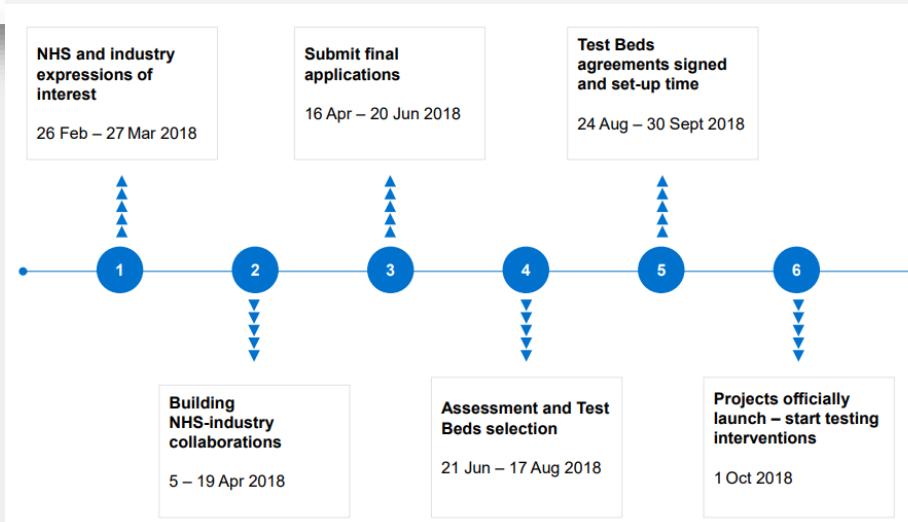
The programme is:

- **an opportunity for businesses to use the real-world setting of the NHS** – this has the potential to improve product’s usability and quality; better align to users’ needs (patients, people living with long term conditions and healthcare professionals); and embed innovation into clinical pathways
- **a chance to learn from other partners in a NHS-led consortium**, by bringing diverse skills and backgrounds to a healthcare challenge, as well as an opportunity to get support with overcoming common barriers to uptake; such as information governance concerns or organisational structures

The programme is not:

- **a procurement process** – there is no commitment from NHS England or the NHS in general, to buy any product involved in the programme.
- **a process to fund the early development and testing of digital products** – there are a variety of other funding opportunities such as the Small Business Research Initiative, or the Digital Health Catalyst for products in this space. Proposals submitted to the Test Bed programme must be ‘combinatorial’ (see definition).

Bra tidslinjer och processbeskrivningar



Event	Date
Expression of Interest (EOI) phase opens	26.02.18
Briefing event	02.03.18
Event in London	20.03.18
EOI phase close	27.03.18
Invite to collaboration discussions	05.04.18
Collaboration workshops start	09.04.18
Full competition opens	16.04.18
Application submission date	20.06.18
Invite to interview	25.07.18

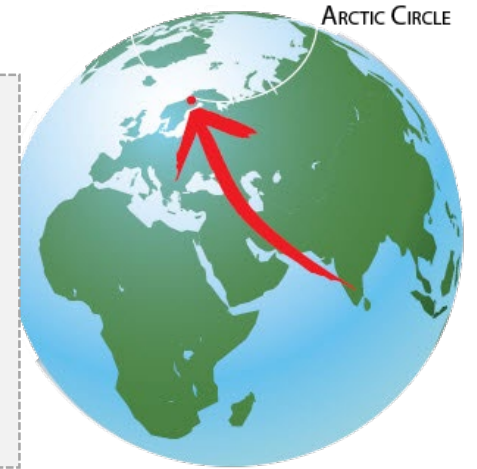
Swedish Proving Ground Association

SPGAs roll är att utgöra en samlingsorganisation för kontakt med alla nödvändiga intressenter som är involverade i att bedriva biltestverksamhet i norra Sverige. Utöver detta erbjuds även ett samarbetsforum mellan testaktörer i området.

USP

SPGA har genom flera tunga namn på sitt track-record byggt upp en legitimitet och förtroende för sin verksamhet. Utöver det har de även paketerat sitt erbjudande på ett överskådligt sätt.

“SPGA gather companies within the automotive winter testing sector in Swedish Lapland. For you, the client, SPGA provides a single point of access to local service providers and an arena for collaboration in business and development.”



Tydlig översikt över erbjudna tjänster

TESTING ENVIRONMENT

Snow and ice surfaces
Adaptive test tracks
Cold chambers and artificial snow
Test services
24hr service
Cold weather guarantee

PROVING GROUNDS

Circular tracks
Comfort tracks
Dynamic surfaces
Handling tracks
Hill tracks
NVH tracks
Polished ice tracks
u-Split tracks

TEST SCOPE

Passenger comfort
Performance
Handling
Whirling snow
Active safety features
Tyres
Driveline
And more...

TEAM & INFRASTRUCTURE

2000-3000 engineers during test season
4000 test vehicles per season
Expertise and technical consultancy
100 000 paid overnights
3000 season employees
Direct flights from several European cities

AUTOMOTIVE CLUSTER



Bra med sammanfattning vad SPGA är och gör

THIS IS SPGA

SPGA, the Swedish Proving Ground Association, gather companies within the automotive winter testing sector in Swedish Lapland. For you, the client, SPGA provides a single point of access to local service providers and an arena for collaboration in business and development. Swedish Lapland via Arvidsjaur Airport has frequent flight connections with Stockholm, Hannover, Frankfurt, Stuttgart and Munich.

Please feel free to [contact us](#).

Direkta kontaktuppgifter

CONTACT SPGA

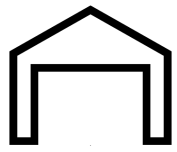
Swedish Proving Ground Association

Chairman of the Board

Robert Granström

+46 70 648 00 42

info@sPGA.eu



FACILITET



ZERO-G Research programs

Faciliteter

Zero-G erbjuder faciliteter för experiment och testverksamhet i en miljö utan gravitation. De erbjuder en miljö där intressenter själva få sätta upp sina experiment och sedan utföra dessa under tyngdlöshet.

USP

Lämnar väldigt stor frihet till klienten att själva utforma sina experiment, de tillhandahåller bara tjänsten tyngdlöshet. Tydligt presenterat med "How-to" och prislistor online





Styrkor i konceptet

Överskådligt erbjudande

ZERO-G WEIGHTLESS LAB INCLUSIONS

ZERO-G offers access to a proven platform and environment for experiments. The ZERO-G Weightless Lab includes:

- ZERO-G Research staff assistance for planning, engineering, and review phases
- FAA Equipment review and approval
- Test Readiness Review – **Day 1**
- Weightless Flight(s) – minimum 25 parabolas per flight – **Days 2 - 4 as requested**
- Personal flight suit, flight bag, and in-flight socks
- Storage for take-off and landing: 15" L x 16" W x 21.5" H (25 lbs per section)
- 10' L x 10' W in-flight test area (per research section)
- In-flight coach assistance
- HD video of flight
- Pre and post-flight refreshments

SAMPLE PROGRAM ITINERARY (TIMES ARE TENTATIVE)

Day 1: Test Readiness Review

- 8:00am: Arrive
- 8:30am: Mission Briefing
- 9:15am: Experiment set-up
- 9:30am: Test Readiness Review (TRR)
- 12:00pm: Finalize TRR
- 2:00pm: Load experiments on G-FORCE ONE
- 5:00pm: Complete experiment loading

Day 2: Flight Day

- 8:00am: Check-in
- 9:00am: Security Check & Boarding
- 10:00am: ZERO-G Weightless Lab Flight
- 12:30pm: Re-Gravitation Celebration; Unload Experiments

Day 3: Flight Day (double flights only)

- 8:00am: Check-in
- 9:00am: Security Check & Boarding
- 10:00am: ZERO-G Weightless Lab Flight
- 12:30pm: Re-Gravitation Celebration; Unload Experiments

Tilltalande och informativ film



Presenterad prisbild

2018 AND 2019 ZERO-G WEIGHTLESS LAB PRICING

Single Flight: one reduced gravity flight consisting of Martian parabolas, Lunar parabolas and zero gravity parabolas.

Individual Seats (hand-held / free-float equipment only)
\$7,150 + 5% tax

One Section (approximately 10' by 10'): 5 ppl max
\$38,500 + 5% tax

Millbrook – Vehicle technology cluster

Egen etablering

Millbrook erbjuder utöver sin egen testverksamhet möjlighet för kunder att etablera sin egen verksamhet i anslutning till Millbrooks egen. Kunden skulle då få tillgång till Millbrooks nätverk och testfaciliteter. Mark finns avsatt för ändamålet och ska enl. uppgift stå nyckelfärdigt inom 12-18 månader

USP

Millbrook är en stor resurs inom både faciliteter och nätverk inom branschen vilket kan locka till etablering. Information tydligt presenterad.



Styrkor i konceptet

Kort och överskådlig information



Build to Suit

Outline planning permission is in place for 24,900 m² of single or multiple occupancy Build to Suit units across four development sites. These would be suitable for a Research and Development Centre or Regional Office.

Each development will also provide:

- A secure and confidential working environment
- Direct access to Millbrook extensive facilities and expertise
- Buildings designed to tenants' requirements, with flexible terms
- Occupation within 12-18 months

Utförliga kontaktuppgifter
– Olika kontaktpersoner för olika erbjudanden så att man träffar rätt direkt.



Millbrook Proving Ground

Millbrook, Bedford, MK45 2JQ, United Kingdom

Telephone: +44 1525 404242

Fax: +44 1525 403420

Enquiries: info@millbrook.co.uk

Careers: jobs@millbrook.co.uk

Event Venues: events@millbrook.co.uk

Track control: tracks@millbrook.co.uk

Directions [Click here for directions](#)

Please note - HGVs are prohibited from travelling through Millbrook village

[CONTACT US](#)



ÖPPEN
TESTBÄDD

SANDAG – San Diego Regional Proving Grounds

Öppna Testbäddar

San Diego regional proving grounds utgörs av ett antal vägsträckor i södra Kalifornien, vilka tillsammans utgör en testbädd för självkörande bilar. Vägsträckorna är utrustade med teknik för att generera data om de självkörande bilarna, och tanken är sedan att denna data ska delas fritt.

Testbädden bygger alltså på en öppenhetsmodell där alla (med tillstånd) bjuds in att använda testbädden mot att genererad data delas fritt.

USP



Styrkor i konceptet

Tydliga framgångsfaktorer

Strategies for Success

- Streamlined path for permitting
- Plan for handling and sharing data
- Business plan that includes a clear path towards commercialization
- 5G Environment

Tydligt syfte

Objectives for Proving Grounds

- Accelerate safe deployment of AV technologies
 - Public safety, improved mobility, disadvantaged populations
 - Share best practices for safe testing and deployment
- Research and data sharing
- Public outreach and education

Direkta kontaktuppgifter

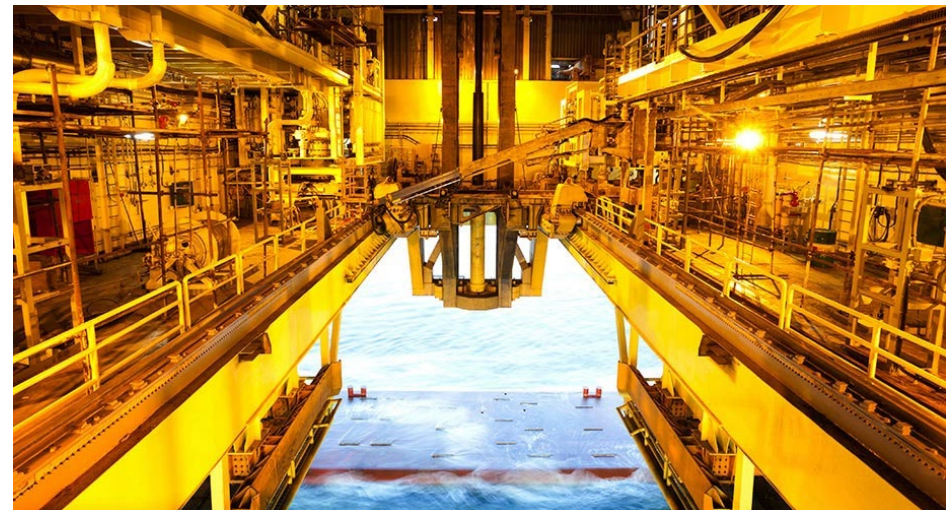
Questions?

James Dreisbach-Towle,
Principal Technology Program Manager
Tolling and ITS
SANDAG
james.towle@sandag.org
(619) 699-1914

SGS: Global inspektions- och testjätte



- Ett av världens största och äldsta inspektions- och testföretag. Gick tidigare under namnet Société Générale de Surveillance. Grundades 1878. Testing är ett av fyra erbjudanden tillsammans med Inspection, Certification och Verification.
- Huvudkontor i Geneve, med ett nätverk av 2400 kontor och laboratorier i 53 länder runt jorden. 95,000 anställda
- **Industri:** Agriculture and food, automotive, aviation, chemical, construction, consumer goods and retail, energy, finance, industrial manufacturing, life sciences, logistics, mining, oil and gas, public sector
- **Service:** Fullservice
- **USP:** Världens största och äldsta inspektionsföretag
- **Miljö:** Alla tänkbara
- **Kanaler:** Egen hemsida + sociala medier
- **Plats:** World-wide



SGS marknadsföring och formspråk

SGS



sgsglobal • Follow
Durham, Durham

sgsglobal A look inside our #anechoic chamber in the UK. Our experts use this chamber to conduct Electromagnetic Compatibility (EMC) testing on #electronics to ensure they're electromagnetically compatible with other #electronic equipment and don't cause interference.

#sgsgroup #sgs #whenyouneedtobesure #safety #quality #anechoicchamber #test #chamber #emc #electromagnetic #waves #reflections #emctestng #technologyrcks #absorption #radiofrequency #radiationabsorbantmaterial #disturbancefree #turntable #dustfree #clean #Durham #UnitedKingdom #UK #England

107 likes
JULY 21, 2017

Log in to like or comment.



sgsglobal • Follow
Alaska

sgsglobal "When our clients say they're working a 'remote site,' they mean it. 'Complex logistical challenges' doesn't quite cover the hard work we do to protect and restore the Alaskan landscape, but this photo comes close." - Justin, Project Manager for Environment, Health, and Safety at SGS 📷 Kris Shippen

#sgs #sgsgroup #whenyouneedtobesure #environment #sustainability #Alaska #USA #landscape #remote #mountains

146 likes
AUGUST 23, 2017

Log in to like or comment.



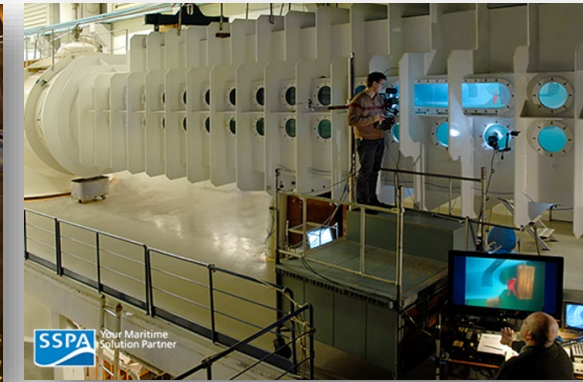
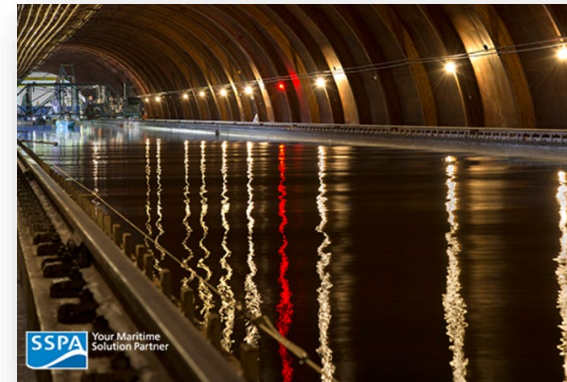
Gexcon: explosionstester på ö utanför Bergen, Norge

- Världsledande företag inom brand- och explosionssäkerhetsrådgivning. Erbjuder en bred portfölj av tjänster inom rådgivning, utbildning och testning.
- **Industri:** Säkerhet (Brand och explosion)
- **Service:** Fullservice
- **USP:** Världsledande inom sitt område
- **Miljö:** Artificiella byggnader
- **Kanaler:** Endast egen hemsida
- **Plats:** Bergen, Norge



SSPA: test av vattenfarkoster i Sthlm & Gbg

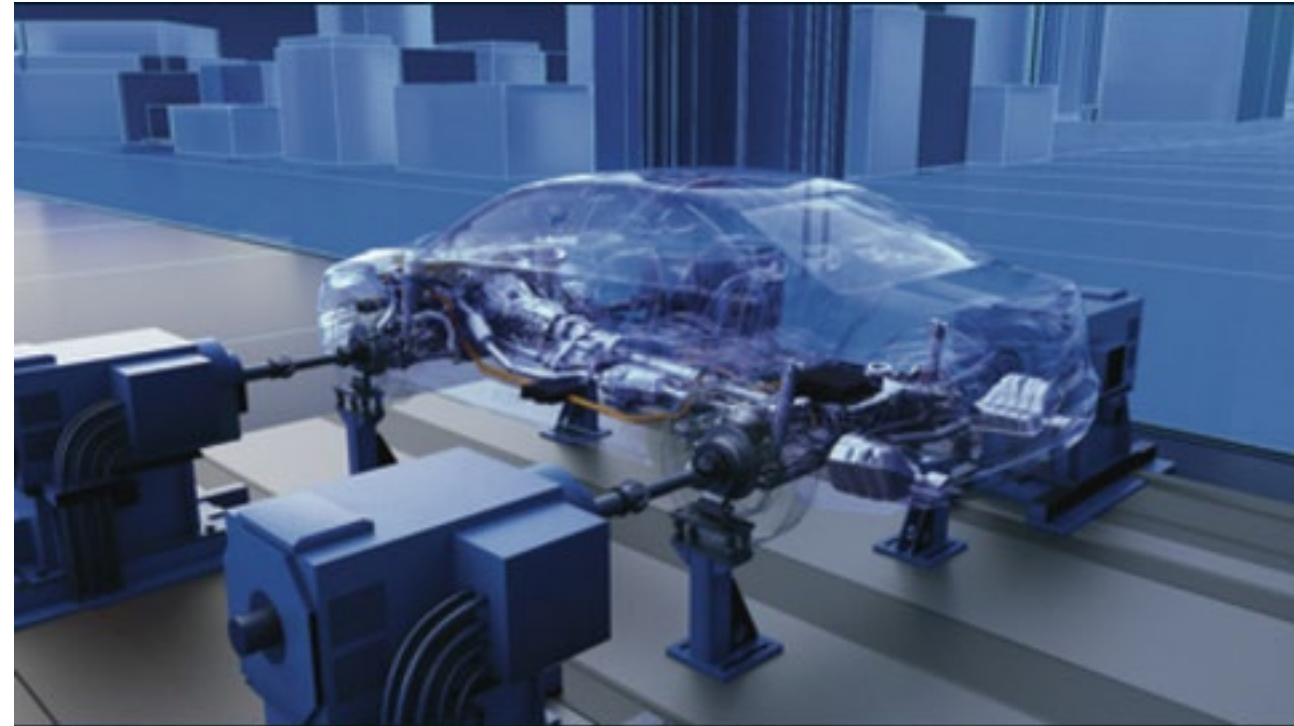
- Företag nischat mot att erbjuda tjänster för tester inom utveckling av vattenburna farkoster och hydrodynamik. Deras artificiella miljöer för tester av olika hydrodynamiska egenskaper är unika.
- **Industri:** Rederi / Hydrodynamik
- **Service:** Fullservice
- **USP:** Nischade inom väldigt snävt område
- **Miljö:** Artificiella vattenmiljöer
- **Kanaler:** Egen hemsida + Sociala medier
- **Plats:** Stockholm & Göteborg, Sverige



AVL Testbed.CONNECT: Virtuellt testbädd som substitut/komplement till att vänta på fysiska komponenter



- AVL är ett Ingenjörskonsult- och simulationsteknikföretag baserat i Österrike. Deras testbädd är okonventionell i den mening att den utgörs av en artificiell miljö vilken kan kopplas direkt mot design- och simuleringsmodeller.
- **Industri:** Automotive
- **Service:** Fullservice
- **USP:** Artificiell testmiljö – Kan utföra tester innan design är färdigställd
- **Miljö:** Artificiell
- **Kanaler:** Egen hemsida + sociala medier
- **Plats:** Graz, Österrike



IIC – Industrial Internet Consortium



- IIC är ett consortium som stöttar bilande och drivande av testbäddar – men erbjuder inga egna faciliteter eller områden. IIC bildades 2014 av flera tunga industribolag så som AT&T, Cisco, GE, IBM, och Intel.
- IICs främsta syfte är att koordinera och katalysera utveckling och testing inom en bredd av olika industrier.
- Jobbar också med “Testing as a service”
- The Testbed Working Group accelerates the creation of testbeds for the Industrial Internet and serves as the advisory body for testbed proposal activities for our members.
- It is the centralized group that collects testbed ideas from our member companies and provides the members with systematic yet flexible guidance for new testbed proposals.
- Our testbeds are where the innovation and opportunities of the Industrial Internet – new technologies, new applications, new products, new services, new processes – can be initiated, thought through, and rigorously tested to ascertain their usefulness and viability before coming to market.



Asset Efficiency Testbed



Condition Monitoring Testbed



Connected Care Testbed



Connected Vehicle UTM Testbed



Connected Workforce Safety



Deep Learning Facility Testbed



Digital Solar Plant Testbed



Factory Automation PaaS



FOVI Testbed



Industrial Digital Thread Testbed



INFINITE Testbed



Intelligent Urban Water Supply



Manufacturing Quality Management Testbed



Microgrid Testbed



Optimizing Manufacturing Processes With Artificial Intelligence



Precision Crop Management Testbed



Retail Video Analytics Testbed



Security Claims Evaluation Testbed



Smart Airline Baggage Management



Smart Energy Management Testbed



Smart Factory Machine Learning for Predictive Maintenance



Smart Factory Web Testbed



Smart Manufacturing Connectivity



Smart Printing Factory Testbed



Smart Water Management Testbed



Time Sensitive Networking



Track and Trace Testbed

NNSS – Nevada National Security Site



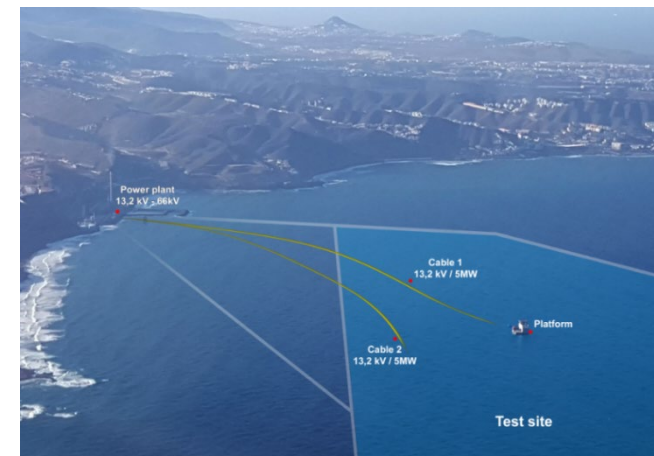
- Nevada national security site är ett område bestående av 28 olika siter ute i Nevadaöknen. Det byggdes från början för att bedriva testverksamhet för kärnvapen – men har senare utvecklats till ett test- och forskningsområde för explosiva och radioaktiva material.
- Området ägs och kontrolleras av den amerikanska energimyndigheten.
- **Industri:** Tester av explosiva och radioaktiva material
- **Service:** Fullt utrustad testbädd – inkl. uppsättning och mätning/utvärdering av test
- **USP:** Lång erfarenhet. Började redan på 1950-talet med de första kärnvapentesterna
- **Miljö:** Ödemarken i Nevadaöknen
- **Kanaler:** Endast egen hemsida
- **Plats:** Nevada, USA



PLOCAN – Ocean platform, Canary Islands

PLOCAN
consorcio

- Konsortium för marina experiment och tester. PLOCAN erbjuder en multifunktions-site för olika tester som utförs i vatten och på offshoreplattformar. Erbjuder både faciliteter och expertis inom området. Främst fokuserade på förnyelsebar elektricitet utvunnen ur havet.
- **Industri:** Marinindustrin – Fokus på förnyelsebar energi i marina miljöer
- **Service:** Fullt utrustad off-shore plattform – inkl. båtar och andra transportmedel
- **USP:**
- **Miljö:** Marin
- **Kanaler:** Endast egen hemsida
- **Plats:** Kanarieöarna, Spanien



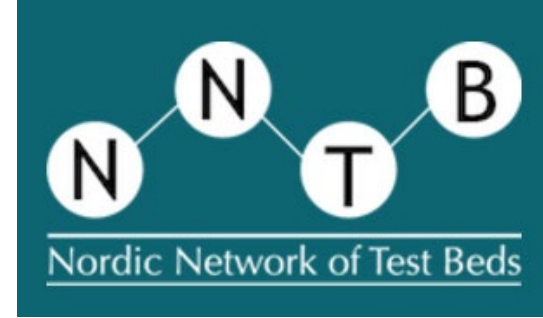
DEKRA – Large-scale test site



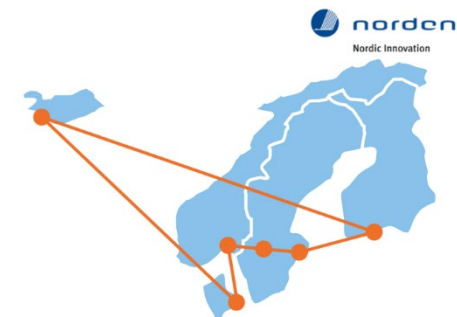
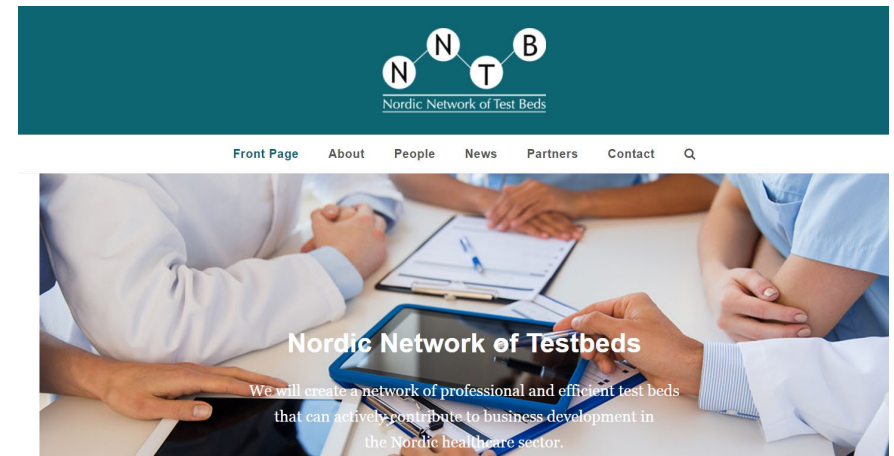
- Dekra är ett multinationellt bolag med tjänsteuppdrag inom teknisk kontroll för fordon och industri som kärnverksamhet. Dekra har investerat stort i testsiter av olika slag, och framförallt inom 5G och uppkopplade fordon. De har köpt två egna områden i Malaga och Tyskland för att bedriva denna testverksamhet.
- Den testbädd som är öppen för externa aktörer är en utanför Chicago
- **Industri:** Explosiva och andra högenergetiska tester på material
- **Service:** Fullt utrustade faciliteter
- **USP:**
- **Miljö:** Ödemark
- **Kanaler:** Del av Dekras hemsida
- **Plats:** Chicago, USA



Nordic Network of Test Beds: samarbete mellan offentlig och privat sektor i fem nordiska länder för att med testbäddar utveckla hälsovårdsindustrin



- **A network of professional and efficient test beds that can actively contribute to business development in the Nordic healthcare sector.** With a “one point of contact” for all the test beds we also aim to match the companies with the testing facility that best fit their need.
- **Our Goals**
 - Increase the number of companies utilizing test beds
 - A reduction in the processing time and cost of each client utilizing the services
 - Promote Nordic test beds regionally and internationally
- **Our Activities**
 - Develop infrastructure for collaboration
 - Secure a sustainable business model
 - Establish common clinical and administrative procedures
 - Branding, marketing and dissemination



DNV GL - Spadeadam



- DNV GL är ett norskt "Klassifikationssällskap" som erbjuder tester inom en uppsjö av olika branscher för att mäta och sätta bransch standarder.
- En av dears testbäddar är Spadeadam i norra England för tester inom olje- & gasindustrin. Snyggt promotat med film för den specifika siten. (Se länk i kommentarer)
- DNV GL erbjuder även testsiter inom andra industrier – så som Material och konstruktioner.
- **Industri:** Olje- & Gasindustrin
- **Service:** Fullt utrustade faciliteter
- **USP:** Stort område för farliga tester
- **Miljö:** Ödemark
- **Kanaler:** Del av DNV GL nätverk
- **Plats:** Carlisle, England

