

The background of the entire image is a deep space scene. At the bottom, the curved horizon of the Earth is visible, showing a thin blue layer of the atmosphere. A bright, glowing light source, likely the sun, is positioned on the left side, creating a large, bright yellow and orange glow that fades into the dark space. A thin, bright orange arc, possibly a comet or a satellite trail, curves across the upper half of the image. The sky is filled with numerous small, distant stars and a faint, hazy band of the Milky Way galaxy.

RIT2021

SPACE INNOVATION GROWTH COOPERATION

JOHANNA BERGSTRÖM ROOS

SPACE INNOVATION FORUM 8
19 - 20 February 2019

Professional experience

Élcio Jeronimo de Oliveira

Deputy Director of Space at Aeronautics and Space Institute (IAE)

Head of Space Systems Division at Aeronautics and Space Institute (IAE)

Professor at Vale do Paraíba University (UNIVAP)

Professor at National Institute for Space Research (INPE)

Professor at Technological Institute of Aeronautics (ITA)

Head of the SARA Project (Atmospheric Reentry Satellite)

Flight Test Coordinator – 14X Project (IEAv)

Commander of Military Unit (RADAR Station) for Air Defense & Air Traffic Control (CINDACTA I)

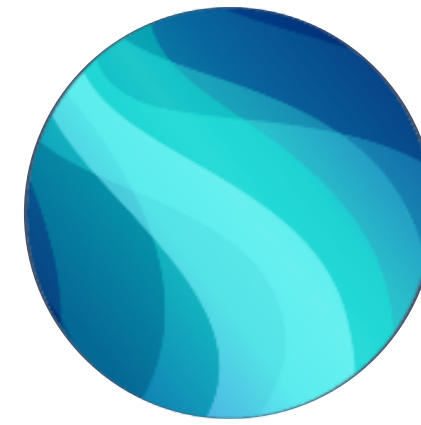


February 19 at Space Campus

- | | | | |
|--------------|---|--------------|---|
| 13.30 | Welcome to Space Innovation Forum
Johanna Bergström Roos, project manager RIT 2021 | 15.40 | The Innovations Support System for Space
Emil Svanberg, Head of Innovation Management, LTU Business |
| 13.35 | Presentation of RIT 2021
Johanna Bergström Roos, project manager RIT 2021 | 16.10 | Establishing a Cluster for Aerospace
Olle Persson, Head Centre of Excellence Space, LTU |
| 14.00 | New Space Company at Space Campus in Kiruna | 16.40 | R&D projects with Space Industry and Academia
Marta-Lena Antti, Head of Space Technology Grad School, LTU
Anna Öhrwall Rönnbäck, Product Innovation, LTU |
| 14.40 | A Testbed for Space Systems
Olle Norberg, Vice Rector in Space, LTU
Space Lab, Máté Kerényi, IRF
Northern Lights, Johan Kero, IRF | 17.10 | Wrap up and bus to Camp Ripan |
| 15.10 | Coffee and cake | 19.30 | Dinner at Camp Ripan |

February 20 at Camp Ripan

- 08.20 Global Watch Center – Opportunities for new businesses**
Lars-Eric Aaro, Senior Advisor ÅF
- 09.00 Sustainability for Better Business**
Johanna Bergström Roos, Project manager RIT 2021
- 09.30 Coffee Break**
- 10.00 Workshop in parallel sessions**
Session – Testbed Space Lab, Olle Norberg
Session – Space Innovation Summer – Project Ideation, Emil Svanberg
- 11.30 Presentations from the Workshops**
- 11.45 Closing Remarks**
Johanna Bergström Roos, project manager RIT 2021
- 12.00 Lunch**



Space Innovation Forum 9

SAVE THE DATE 3-4 SEPTEMBER 2019
LUNCH TO LUNCH

RIT 2021

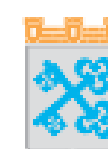
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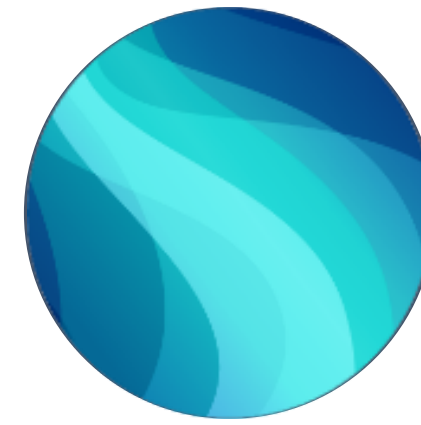
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LULEÅ KOMMUN

Sparbanken Nord





RIT2021

WE ARE WORKING TO BECOME
A STRATEGIC ASSET FOR THE GLOBAL SPACE ARENA
BY BUILDING UP AN OUTSTANDING ECOSYSTEM
THAT ATTRACTS PEOPLE, NEW ESTABLISHMENTS AND INVESTORS

TARGET GROUP

FOR THE RIT 2021 PROJECT

- ✓ The regional space community
- ✓ SMEs in other industries who could and would like to support the space business
- ✓ Academy in order to build excellence in specific areas needed in the space industry

PROJECT BACKGROUND

THE GOAL OF RIT WAS TO STRENGTHEN REGIONAL COLLABORATION BETWEEN
INDUSTRY, ACADEMIA & ACTORS WITHIN THE INNOVATION SUPPORT SYSTEM

BACKGROUND RIT

FROM INITIATING

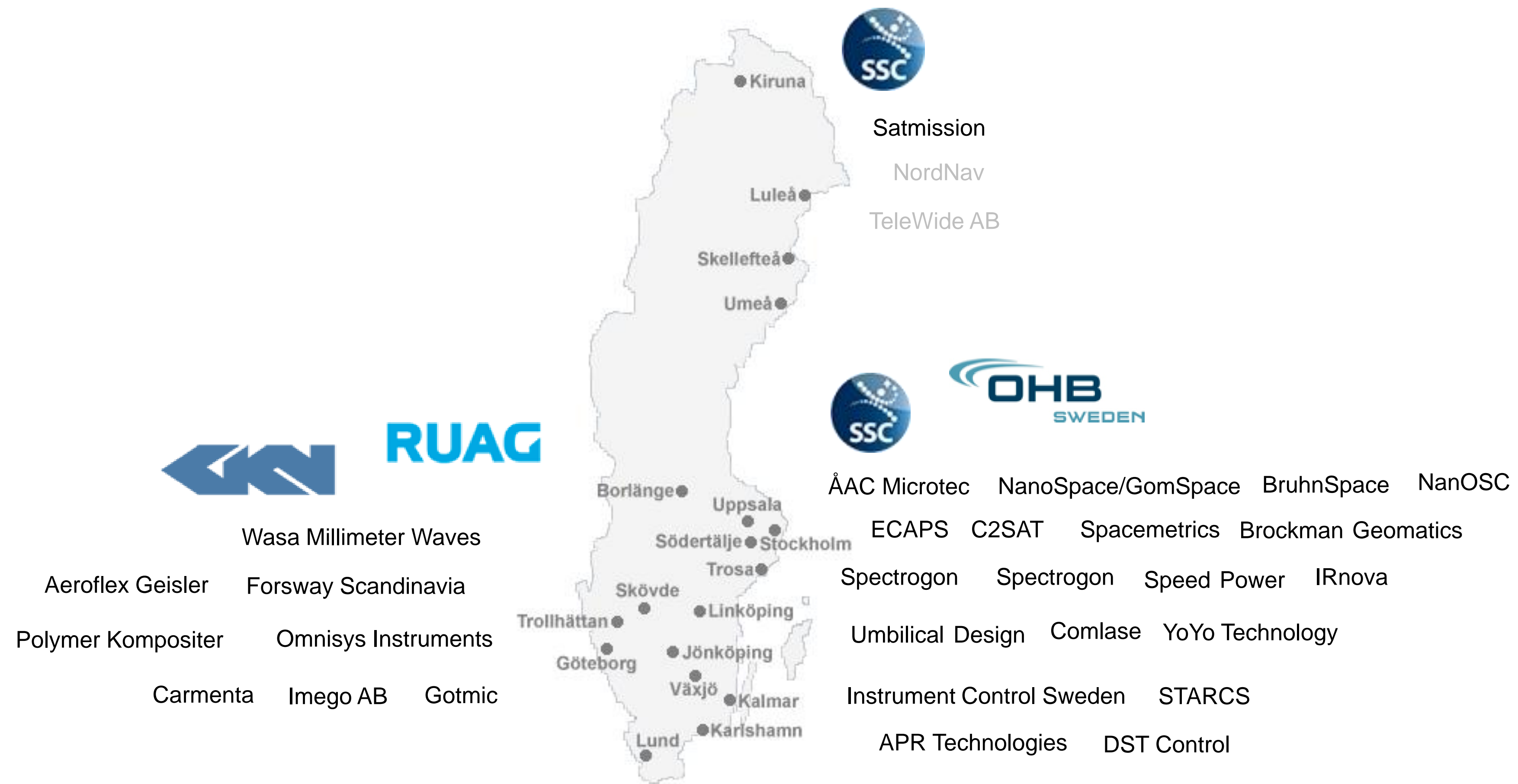
- R&D collaboration
- PhDs with the Space Industry
- Centre of Excellence for Space
- Space Innovation Forum
- New Innovation Support System for Space.

TO ESTABLISHING

All our achievements within the RIT project now
need to get established and further developed

SPACE SPIN-OFFs IN THE NORTH

AROUND 2015 BEFORE THE RIT PROJECT



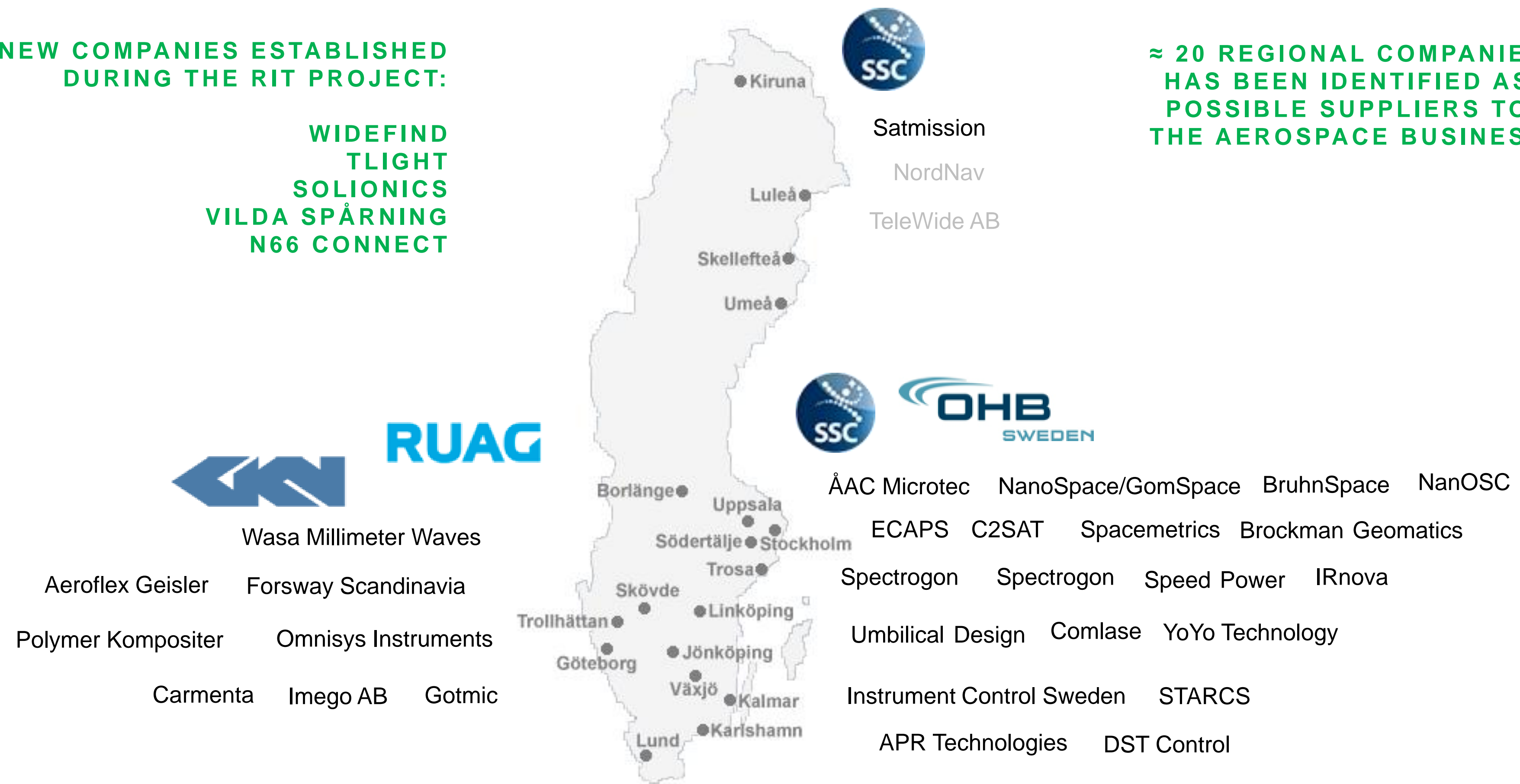
SPACE SPIN-OFFs IN THE NORTH

AROUND 2018 AFTER THE RIT PROJECT

5 NEW COMPANIES ESTABLISHED
DURING THE RIT PROJECT:

WIDEFIND
TLIGHT
SOLIONICS
VILDA SPÅRNING
N66 CONNECT

≈ 20 REGIONAL COMPANIES
HAS BEEN IDENTIFIED AS
POSSIBLE SUPPLIERS TO
THE AEROSPACE BUSINESS



NO COLLABORATION IN INNOVATION

AROUND 2015 BEFORE THE RIT PROJECT



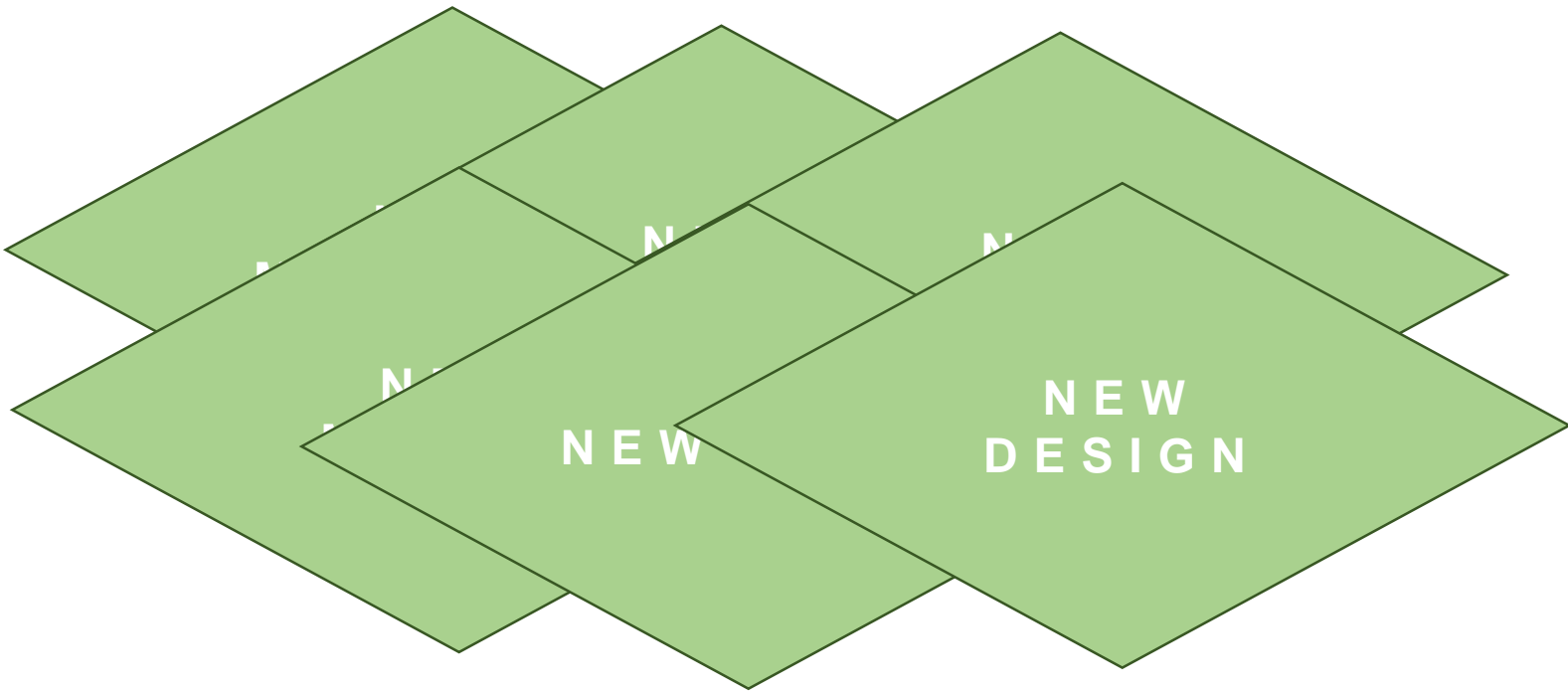
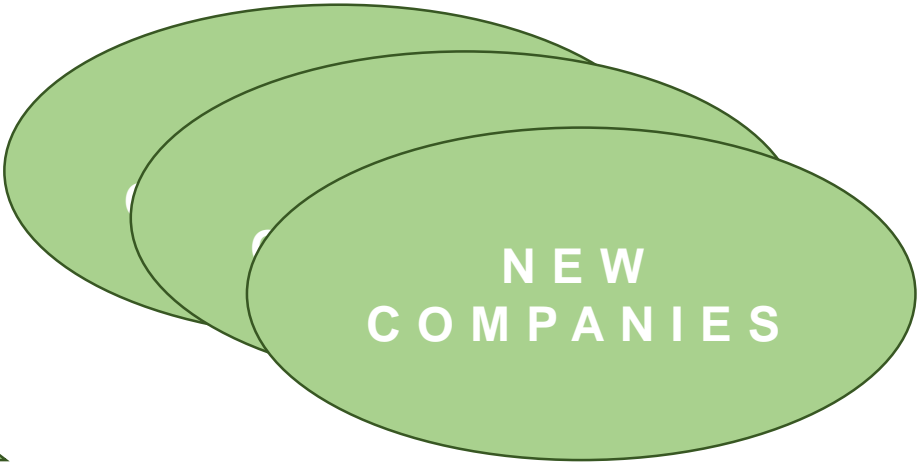
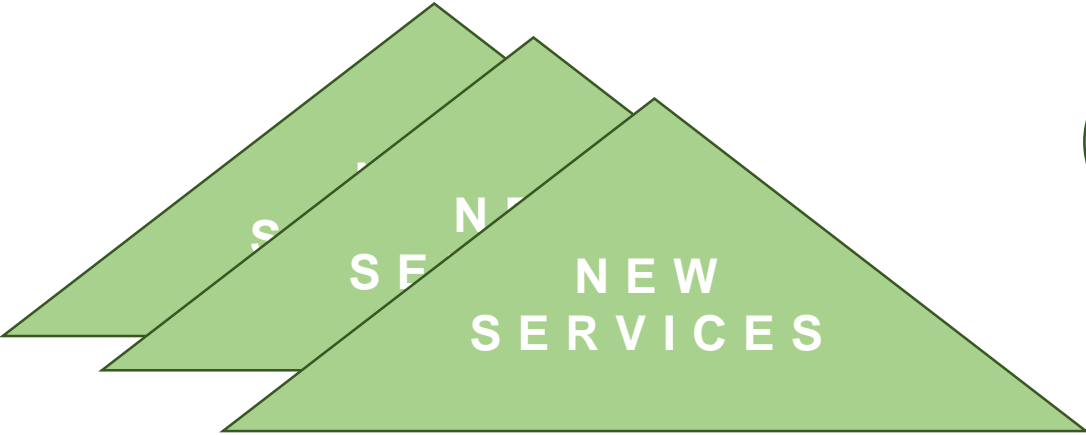
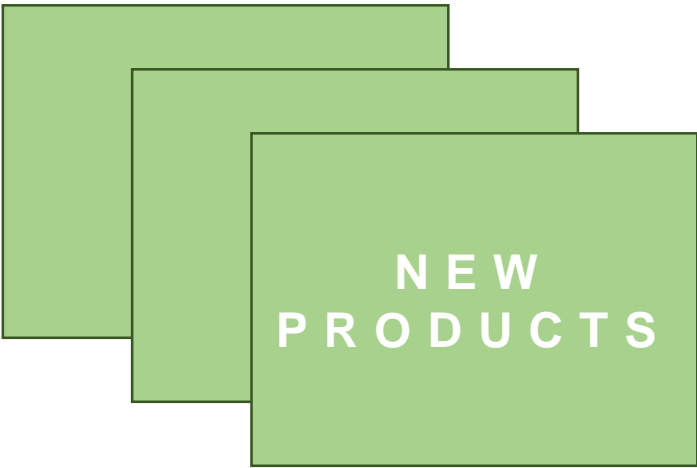
COLLABORATION IN INNOVATION

AROUND 2018 AFTER THE RIT PROJECT



ACADEMIA – INDUSTRY – INNOVATION SUPPORT

INDUSTRY – INNOVATION SUPPORT



RIT BY NUMBERS

GOALS WE PLANNED FOR AND EXTRA BONUS THAT CAME ALONG

- A Centre of Excellence
- 7 new Master Thesis
- 7 Innovation PhDs
- 8 “Space Innovation Forum”
- 4 initiated collaborations with SMEs
- Around 15 regional SMEs interested in the space business
- LTU has become a major player
- 6+6 research subjects at LTU are interested in Space
- Omnisys Instruments and RUAG also joined
- 3 new cross fertilization collaborations at LTU
- 1 new match making event “Lift-Off”
- 4 new regional space related start-ups
- 1 new regional space start-up
- 2 new national space related start-ups in Testbed Kiruna
- 1 new node for Aerospace Cluster Sweden
- 1 new node for Big Science Sweden

BETTER OPORTUNITIES TODAY

THE RIT PROJECT HAS PAVED THE WAY FOR REGIONAL DEVELOPMENT

- Space is a strategic area for the whole region
- LTU is expanding within the space area: new professors, PhDs, Postdocs, and lectors
- LTU has a vice rector with a focus on space
- LTUs space role in the region has strengthened
- An Innovation support system for space is identified
- A Swedish Space Incubator is in place
- “Space Innovation Forum” is initiated
- We have technical/knowledge transfer between academia and industry
- We have a better understanding of various driving forces in industry and academia
- SMEs have identified space as a potential market
- SMEs are more prepared to step into the space industry



We have a
stronger appeal
and external actors
want to collaborate
with us!

BETTER OPORTUNITIES TODAY

NEW SPACE IS A GAME CHANGER FOR THE BUISINESS

- We have a modern space race with a growing crowd of private investor
- Space is an important future industry for the goals of Agenda 2030
- The demand of small satellites has multiplied
- The Swedish government has launched a national space strategy
- The Swedish National Space Agency has launched a new space strategy
- Esrange is pointed out as a future launch site for satellites
- Several new important projects have started: EISCAT 3D, SmallSat Express, SpaceLab and Global Watch

4 WORK PACKAGES

R&D PROJECTS

Current PhD:s

New PhD:s

Postdocs

TESTBED SPACE

SpaceLab

New Business Models

Commercialization

INNOVATION SUPPORT

New Methods

New Processes

New Business Cases

Students in action

CLUSTER BUILDING

Aerospace Business

Networking

Collaboration

Training Programmes

SYNERGIES

BETWEEN THE DIFFERENT WORK PACKAGES IN RIT 2021

R&D PROJECTS

INNOVATION SUPPORT

- Programme for PhDs
- Programme for PosDocs
- Identify new cases
- Case to summer students

TESTBED SPACE

- New PhDs
- New PostDocs
- New Master Theses
- Project courses

CLUSTER BUILDING

- Collaboration Industry/Academia
- Master Theses
- Project courses
- Cases to summer students

SYNERGIES

BETWEEN THE DIFFERENT WORK PACKAGES IN RIT 2021

- Programme for PhDs
- Programme for PosDocs
 - Identify new cases
- Cases to summer students

R&D PROJECTS

INNOVATION SUPPORT

- Innovation support
- New business models
 - Identify new cases
 - Cases for summer students

TESTBED SPACE

CLUSTER BUILDING

- Programme for SMEs
- Tools for business management
- New business models (up/downstream)
- Cases for summer students

SYNERGIES

BETWEEN THE DIFFERENT WORK PACKAGES IN RIT 2021

- New PhDs
- New PostDocs
- New Master Theses
- Project courses

R&D PROJECTS

INNOVATION SUPPORT

- Innovation support
- New business models
- Identify new cases
- Ceses for summer students

TESTBED SPACE

CLUSTER BUILDING

- Collaboration Industry/Academia
- Business cases
- Partnerships

EXPECTED RESULTS

FOR THE RIT 2021 PROJECT

- We are Sweden's strongest space region
- We have a regional space strategy
- We have an outstanding ecosystem that creates growth
- 7 PhDs have delivered innovative solutions to the space industry
- 7 PhDs has graduated and are highly sought after by the space community
- 4 cases are mature for the space incubator
- 8 new PhD/PostDoc projects that meet the needs of the space industry have begun
- Space Innovation Forum is a well established national forum
- Knowledge & technology transfer leads to new business ideas and regional growth
- Twenty regional SMEs are suppliers to the space business

EXPECTED RESULTS IN THE LONG RUN

LONG AFTER THE RIT 2021 PROJECT

- We have a strong regional space industry
- Esrange Space Centre is Europe's launch site on European ground for polar satellites
- SpaceLab is offering attractive state-of-the art testing facilities on the global space arena
- EISCAT 3D is contributing to world leading science and space applications for commercialization
- LTU is a world leading space university with a well respected Centre of Excellence for Space
- IRF has further consolidated its role as world leading in space physics
- Aerospace Cluster Sweden is well established and connected to the global space arena
- We design, build, test, launch and operate satellites

EXPECTED RESULTS IN THE LONG RUN

LONG AFTER THE RIT 2021 PROJECT

IN ADDITION

We have an outstanding eco system for space which contributes to regional growth

- A strong ability in R&D collaboration creates good effects for the space community/society
- More students are competing to study at Space Campus
- Space students are considered to be one of the most important target groups for recruitment
- SMEs are well integrated as suppliers to the space business
- We attract skilled people, investors and new establishments
- Etc.....



THANK YOU

SPACE

INNOVATION

GROWTH

COOPERATION