



INNOVAIR

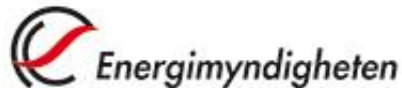
Strategiskt
Innovationsprogram Flyg

Strategic Innovation Programme Aeronautics

www.innovair.org/en

Anders Blom
Programme Director

Med stöd från:



STRATEGISKA
INNOVATIONS-
PROGRAM

AERONAUTICS, A HISTORY OF INNOVATION IN SWEDEN 1937-

- 1st Ejection Seat
- 1st A/C modified from propeller to jet engine
- 1st Swept Wing Jet in Europe
- 1st production A/C with afterburner
- 2 world speed records
- 1st Saab Supersonic A/C
- 1st Saab System A/C ex Radar
- 1st Double Delta Wing
- 1st Canard configuration in production
- 1st A/C w Central Computer
- 1st Tactical Data Link bw A/C
- 1st Digital FCS
- 1st Auto Gun Aiming
- 1st HUD in production
- 1st virtual target training aid
- 1st metal bonded wing panels in Mach 2 A/C
- Unprecedented capability- size ratio
- First Nato fighter of 4th generation
- First fully autonomous flight in Europe
- First fighter to fire Meteor
-
-

J21 (prod.1944-47)



J21

Tunnan (1st flight 1948)



Tunnan

Tunnan

Lansen (1st flight 1952)



Lansen

Draken (1st flight 1955)



Viggen

(1st flight 1967)

Viggen

Viggen

Viggen

Viggen

Viggen

Viggen

Viggen



Gripen



Gripen

Sharc

Gripen



Gripen

Gripen

NATIONAL RESEARCH & INNOVATION AGENDA



Written by Industry,
Universities and
Government Authorities
with Innovair as
Coordinating Forum

Aeronautics in Sweden 2016

More than 12.000 employees with a turnover of +20 billion SEK/year. Export of 70%
SME turnover 500 million SEK/year

Aeronautics in Sweden 2050

Turnover doubled to + 40 billion SEK/year with an export of 90%
SME turnover fivefold increased to 2.5 billion SEK/year

n Sea



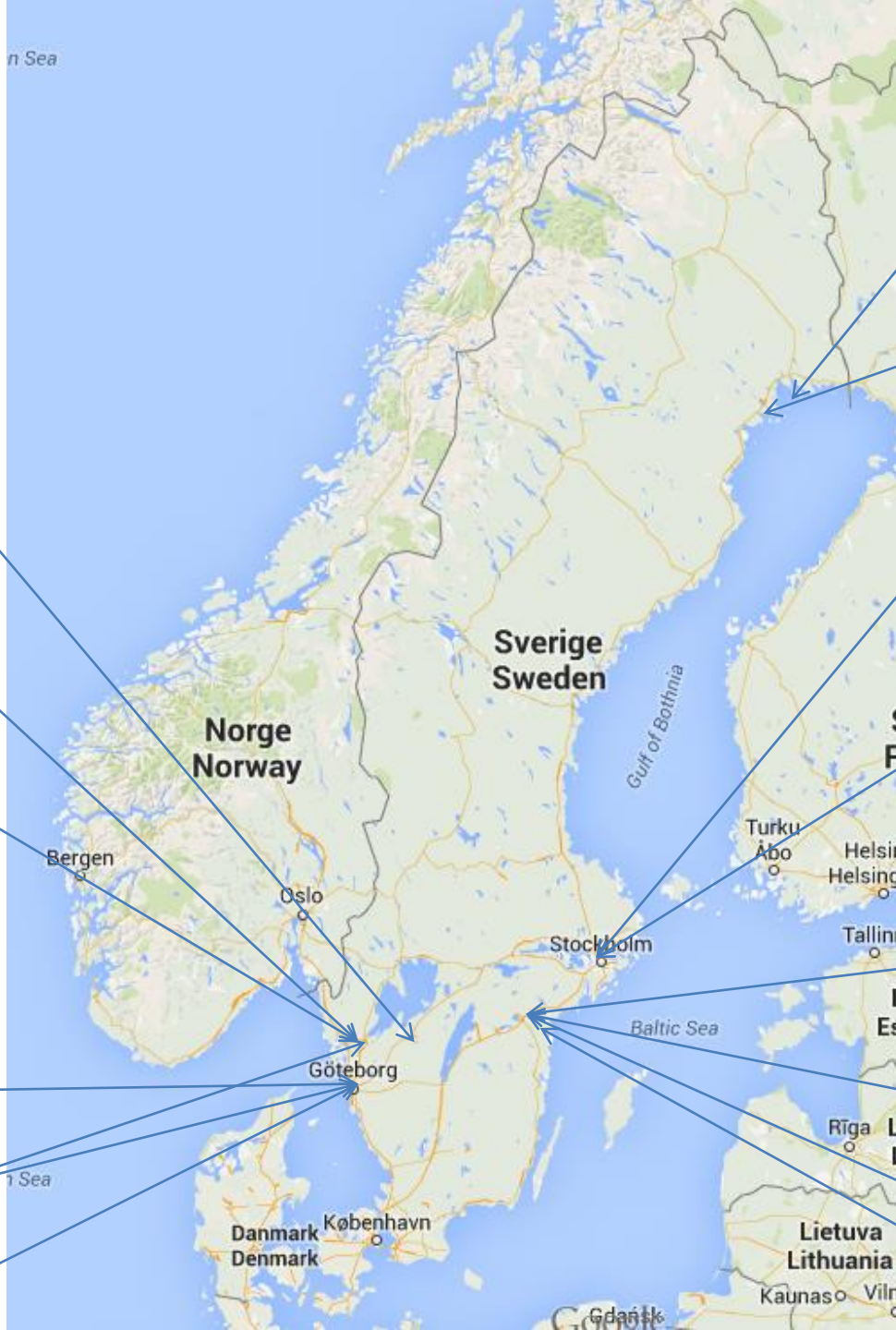
swerea|SICOMP



Linköpings universitet

COMPRASER LABS

swerea|SICOMP
swerea|IVF



Sverige
Sweden

Norge
Norway



HÖGSKOLAN
I SKÖVDE



UNIVERSITY WEST

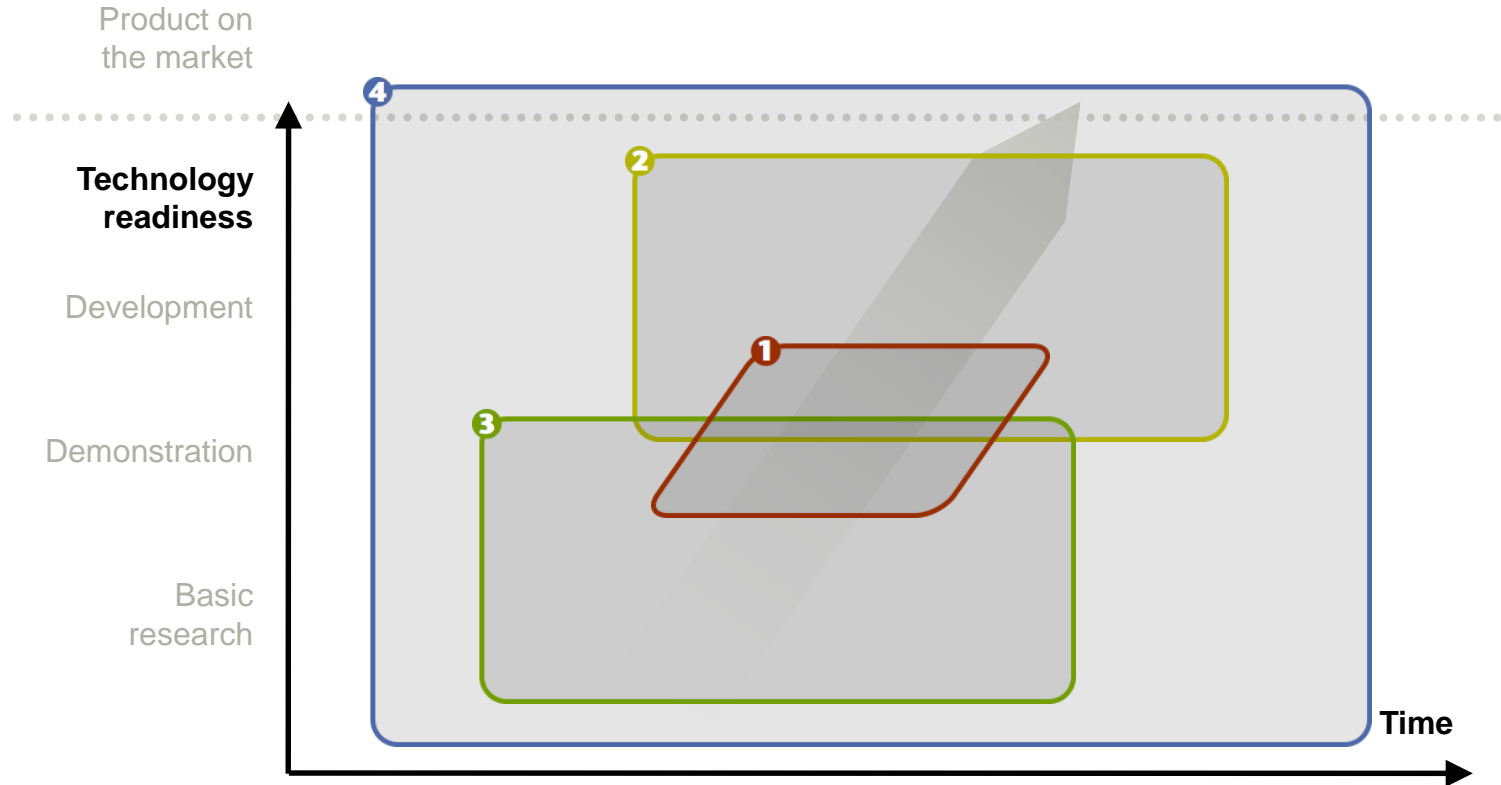
INNOVATUM
TEKNIKPARK



Chalmers

swerea|IVF
swerea|SICOMP

Strategy for near term activities



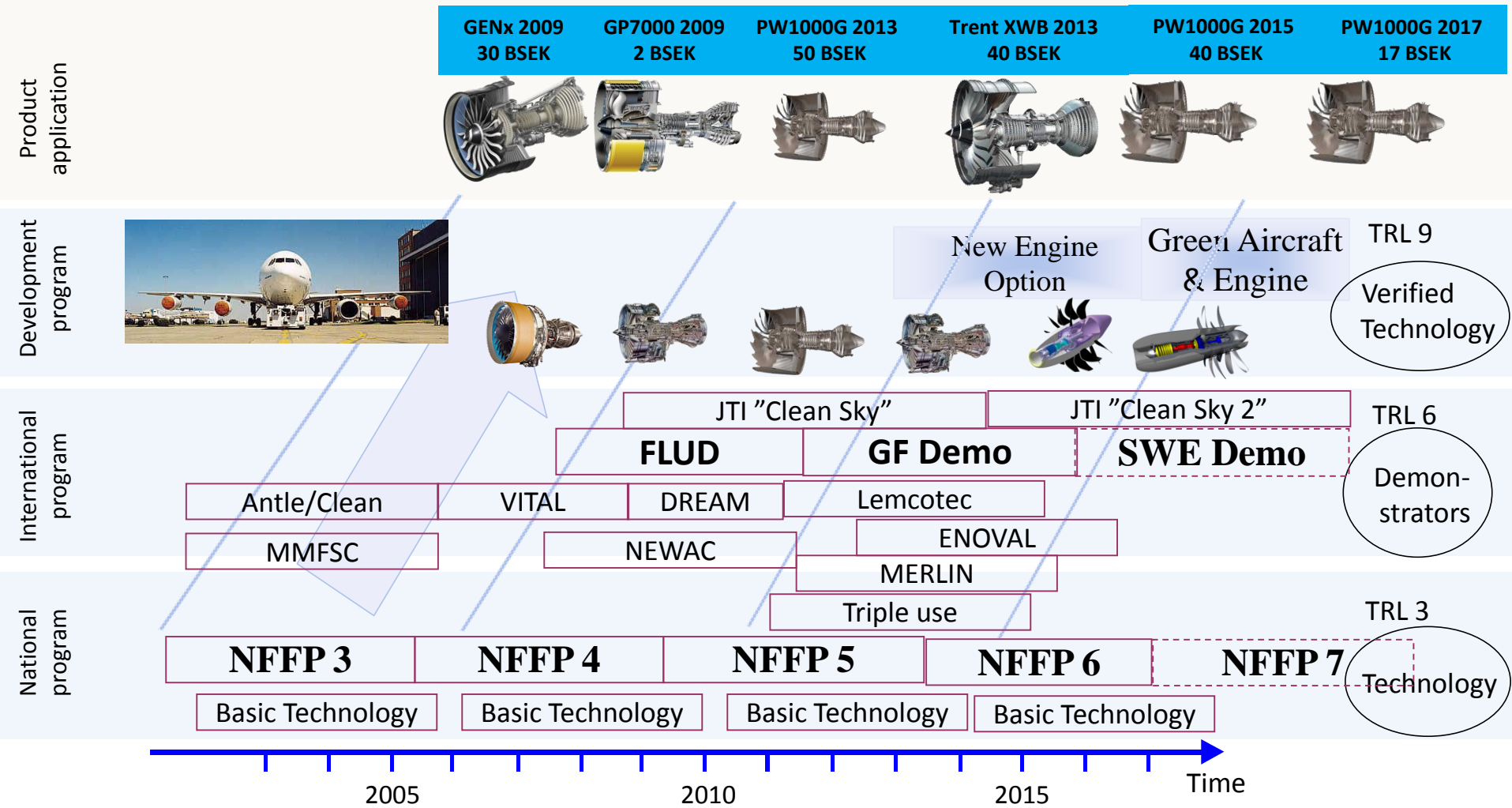
On what should we focus Swedish aerospace research and development?

How do we bring about the best possible conditions for domestic production?

How can academia best work to encourage innovation?

How do we secure consensus for and governance of the Swedish aerospace sector?

GKN roadmap



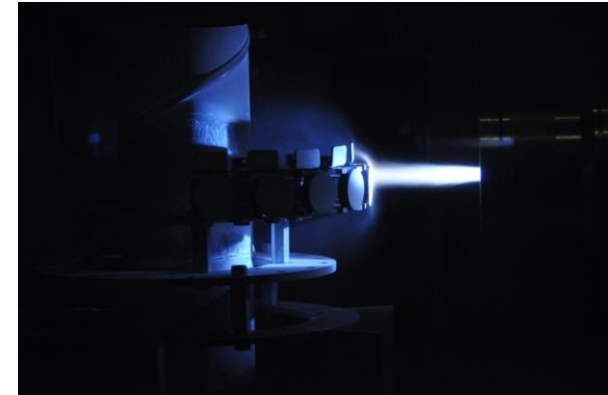


Clean Sky – SAGE4 Engine Test



Composite Fan Structure

Production Technology Center Innovatum at Trollhättan



Industries
SMEs

Academia

- Flexible industrial automation
- Metal cutting
- Additive manufacturing
- Thermal spraying
- Welding

Research Institutes



Arena for collaboration



Saab Roadmap

INNOVAIR

Product application



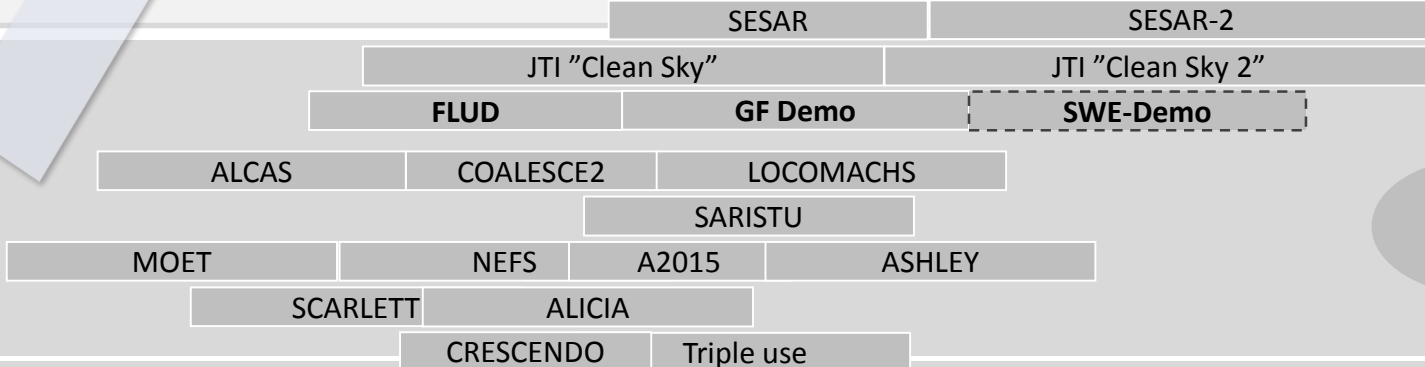
Double turnover in aeronautics

Development Programs and Full-scale Demonstrators



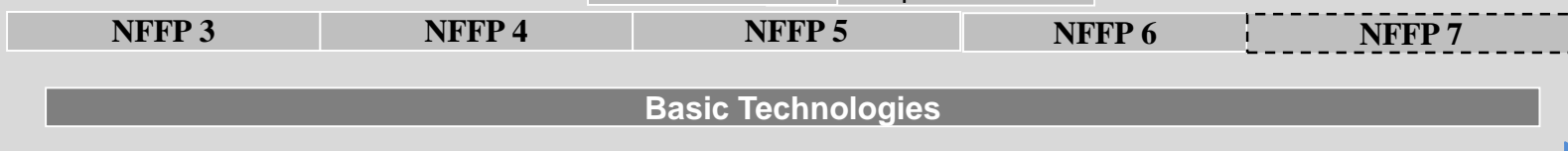
TRL 9
Verified Technology

International programs



TRL 6
Demonstrators

National programs



TRL 3
Technology

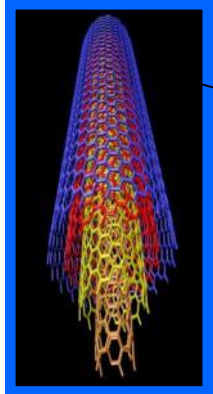
2005 2010 2015 2020 Time

Integrated Wing Leading Edge and Upper Wing Cover in carbon-fibre-reinforced composites for **BLADE** (Breakthrough Laminar Aircraft Demonstrator in Europe) flight demonstrator, part of the Smart Fixed Wing Aircraft (SFWA) project

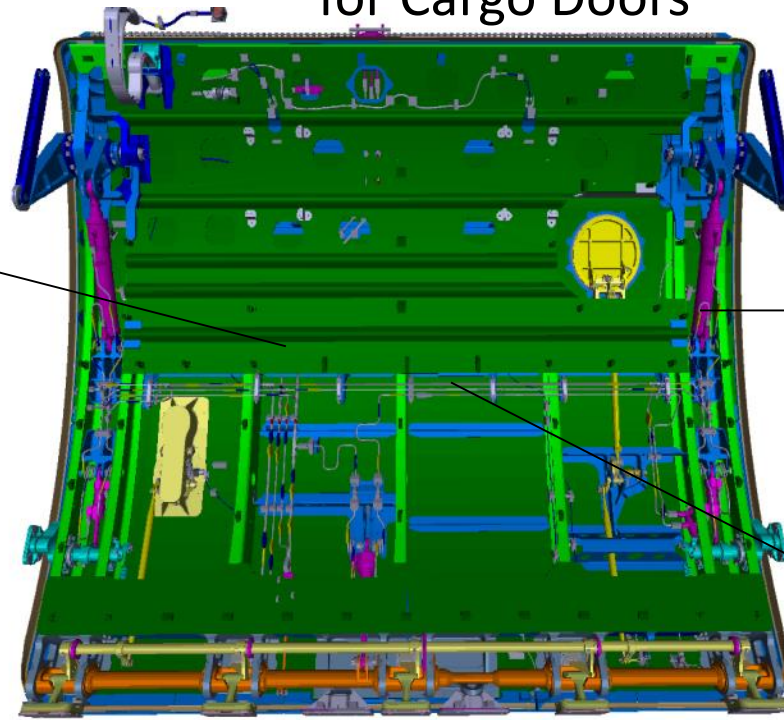


Airbus statement – “Most advanced and integrated wing upper cover ever produced so far in the world”

GF Demo: Next Generation Light Weight Structures for Cargo Doors



Multifunctional materials

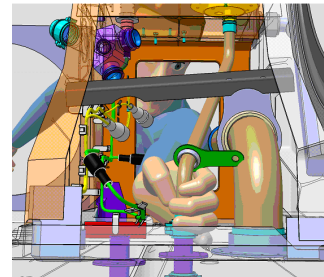


Lighter actuation system



Automation of assembly for High Rate Production incl conventional and orbital drilling

Design for high-rate manufacturing



Integrated composite structure

optimized manufacturing process

Innovative and cost-efficient
Non-destructive testing

