



INNOVAIRS ÅRSKONFERENS

Internationellt samarbete Sverige-Brasilien

Ulf Anderini, 2017-09-20



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- Objective & Vision
- Enablers
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BACKGROUND



GRIPEN BRAZIL



DEVELOPMENT CENTRE
Gavião Peixoto



FLIGHT TEST CENTER
Gavião Peixoto



FIGHTER PRODUCTION
São Bernardo do Campo & Gavião Peixoto



Systems
Integration



Airframe Design
& Aerodynamics



Simulation



Maintenance
Optimization



Weapon Integration



Future Fighter
Design

BILATERAL AGREEMENTS SWEDEN-BRAZIL

- The **Brazil-Sweden Strategic Partnership New Action Plan** (Oct 2015) states *that*

“Brazil and Sweden reaffirm their satisfaction with the bilateral cooperation in defence matters, greatly strengthened by the industrial and technological partnership currently being established on the basis of the Gripen NG project. Both countries recognise the potential for expanding cooperation in this field, and express their commitment to identifying new initiatives of mutual interest.”

- One such initiative was establishing a High Level Group (HLG) on Aeronautics.
- **The Protocol** of the first meeting of the Brazilian-Swedish High-Level Group on Aeronautics on 19 October 2015 states *“During the Brazilian-Swedish Joint Committee on Economic, Industrial and Technological Cooperation held in Brasília on 21 May 2015, **Brazil and Sweden agreed to establish a High-Level Group (HLG) on Aeronautics, at Deputy Minister level, in order to broaden and extend the strategic collaboration in the field of Aeronautics. The HLG, formed under the additional protocol on innovative high industrial cooperation from 2009, is a sign of the shared ambition to develop and deepen the bilateral cooperation in Aeronautics, not only regarding military projects, but, regarding civil and dual use projects as well.”***

1) Brazil-Sweden Strategic Partnership New Action Plan, confirmed in Stockholm 19 Oct, 2015.

2) Protocol, Swedish Min of Enterprise and Innovation, ref no N2015/08122/FÖF, dated 20 Oct, 2015.

OBJECTIVE & VISION

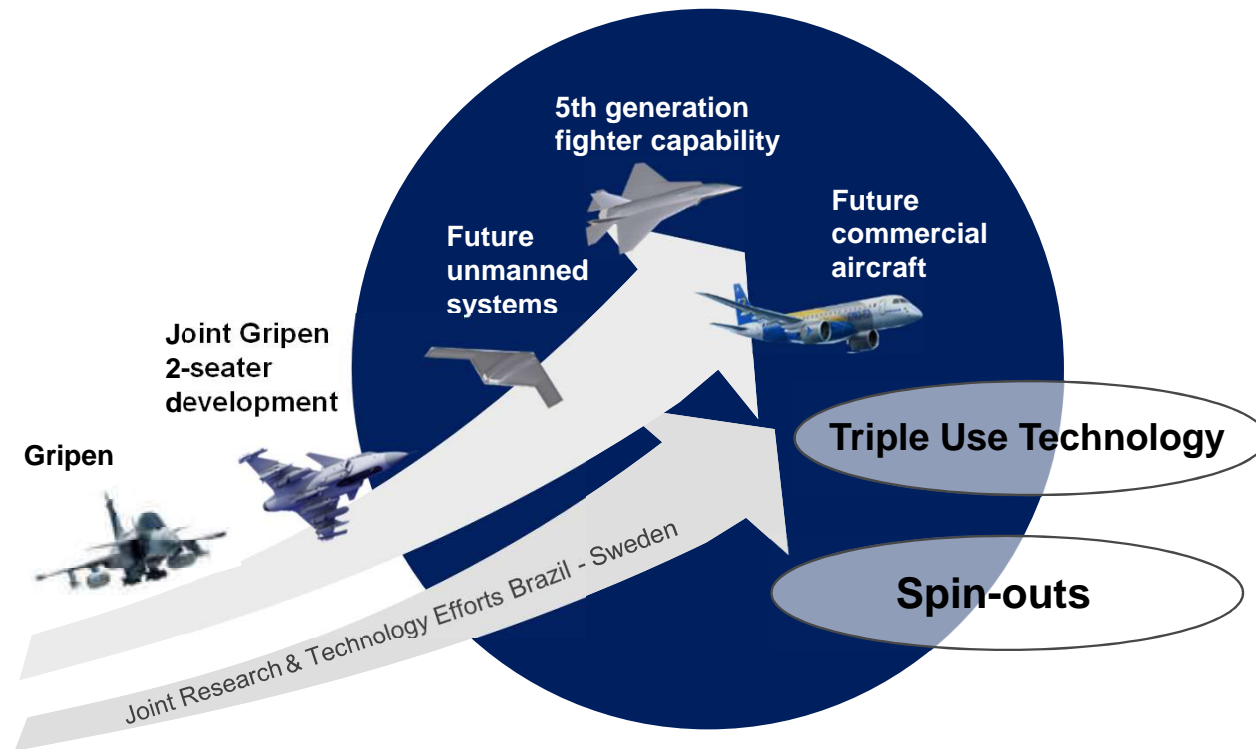


BILATERAL TECHNOLOGY PARTNERSHIP

Brazilian – Swedish Aeronautic Vision

Partnership Drivers

- Trade
- Technology
- Cost



ENABLERS



CISB A HUB BETWEEN BRAZIL & SWEDEN

- Swedish-Brazilian Research and Innovation Centre (CISB)
 - Private non-profit association
 - Acts as an international hub to promote dialogue and aims to create unique collaboration opportunities between industries, academy (education and research) and government.
- CISB's focus areas
 - Aeronautics, Defence and Security, Sustainable Energy, Transport and Logistics, Urban Development
- Members & Supporter
 - Swedish and Brazilian companies, universities, institutes, funding agencies, governmental institutions etc



PROFESSORS-CHAIR AT ITA

- Purpose
 - Networking
 - Research cooperation
 - Promote student exchange
- Content
 - 4 Swedish Professors alternating in place at ITA in Brazil
 - 3-4 months/year during 3-4 years
- Financed by
 - Swedish & Brazilian companies, universities, funding agencies









**CISB Swedish Professor of Aeronautics
 Endowed Chair at ITA in honor of Peter Wallenberg Sr**

Swedish Government through VINNOVA, Swedish Industry and Swedish Universities wish to extend the exchange of innovation and technology with Brazil in high technology areas. Aeronautics is a key technology area of bilateral interest, where all relevant Swedish parties are working together in the Strategic Research Program INNOVAIR to strengthen the ties with Brazilian Universities, Government and Companies.

As part of this initiative, an endowed professorship will be established at Instituto Tecnológico de Aeronáutica (ITA) within Comando da Aeronáutica (COMAER) as a catalyst to deepen bilateral research, education and innovation cooperation in aerospace technology.

Saab and CISB supported by Chalmers University of Technology, the Royal Institute of Technology and Linköping University, hereby present an endowed chair for professors from Sweden at ITA. The endowment also includes extended bilateral cooperation with Post Docs as well as PhD and Master Students. The chair will be a platform for the most prominent and entrepreneurial Swedish professors in the aeronautical field, and their research teams, to cooperate with Brazilian counterparts.

Brasília, Brazil March, 2015

 Marcus Wallenberg Chairman Saab AB	 Hilas Ruske CEO Saab AB
 Alexandra Helena Managing Director Centro de Pesquisa e Inovação Suro-Brasileiro	 Peter Gustafsson President Royal Institute of Technology
 Karin Markides President Chalmers University of Technology	 Håkan Östman President Linköping University

100 RESEARCH **SCHOLARSHIPS**

- 2011 – Gift from Saab to Brazil
 - 100 scholarships
 - Sandwich, PhD
 - 6 to 12 months of studies in Sweden
- 60 completed
 - Brazil CnPq – Science without Borders program
 - Tutors from Swedish universities and Saab
 - Applications from > 17 Brazilian universities
 - Swedish Universities KTH, Chalmers, LiU, Luleå, Skövde, Blekinge, Acreo



*Carolina Andrade PostDoc at UNICAMP/Chalmers
Emilia Villani PostDoc at ITA/Chalmers
Leonardo Oliveira PostDoc at PUCRS/Skövde University*

COLLABORATION ON ALL LEVELS

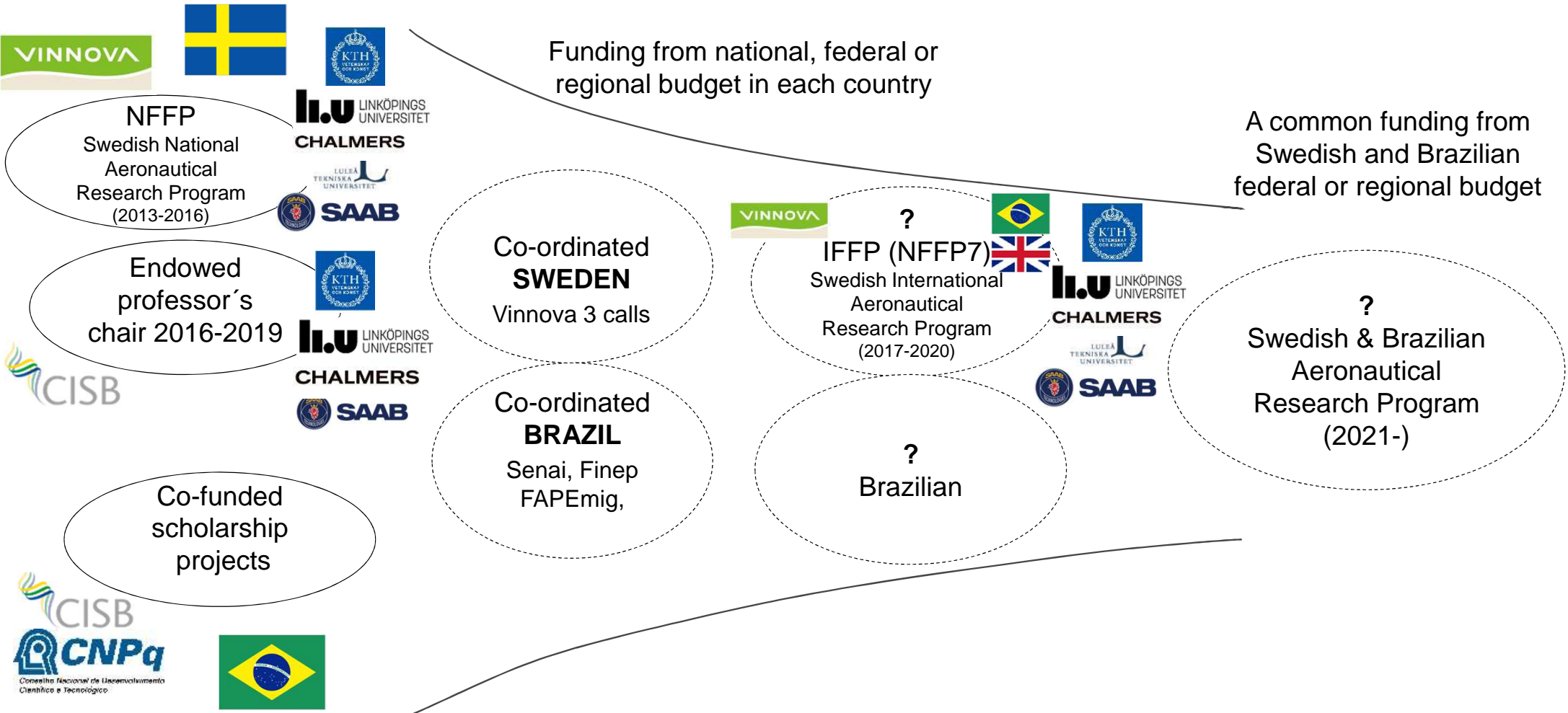
- Swedish-Brazilian Workshops in Aeronautics
 - 1-2 per year
 - Next October 25, 6th workshop
 - www.brasweaic.org
- Swedish-Brazilian Executive Committee on Aeronautics
 - Initiates and follows up activities decided by the HLG e.g. workshops, bilateral development projects
 - Proposes strategic plans for the cooperation.
- Swedish-Brazilian High Level Group on Aeronautics
 - Led by the ministerial level to outline the strategic direction of the cooperation. The HLG consists of representatives from government, industry and academia in both countries.
 - State secretaries , Heads of R&D funding agencies, CEO's of the main aeronautics companies, Directors of the main aeronautics industry organizations, Airforce Chiefs and/or Head of Materiel Administration, representatives for Academia



RESEARCH PROJECTS



AERONAUTICAL RESEARCH SWEDEN-BRAZIL



PILOT PROJECTS

MSDEMO

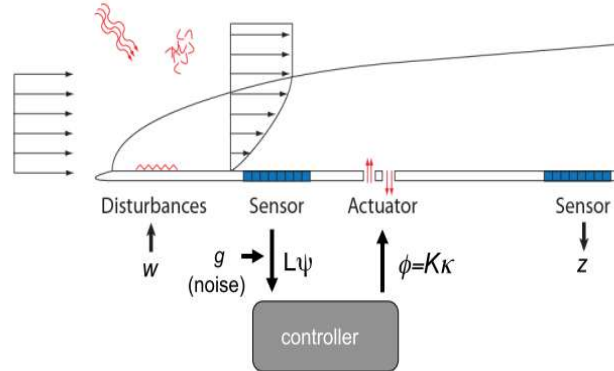


Area: Subscale model flight testing

Sweden: Saab, LiU

Brazil: ITA, USP

PreLaFloDes

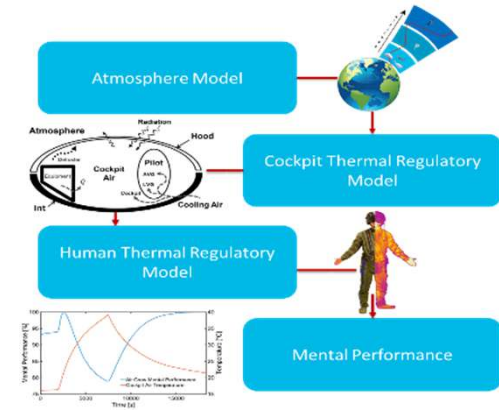


Area: Flow control and Flow Quality

Sweden: Saab, KTH, LiU

Brazil: ITA, USP

HumanFactorsLab

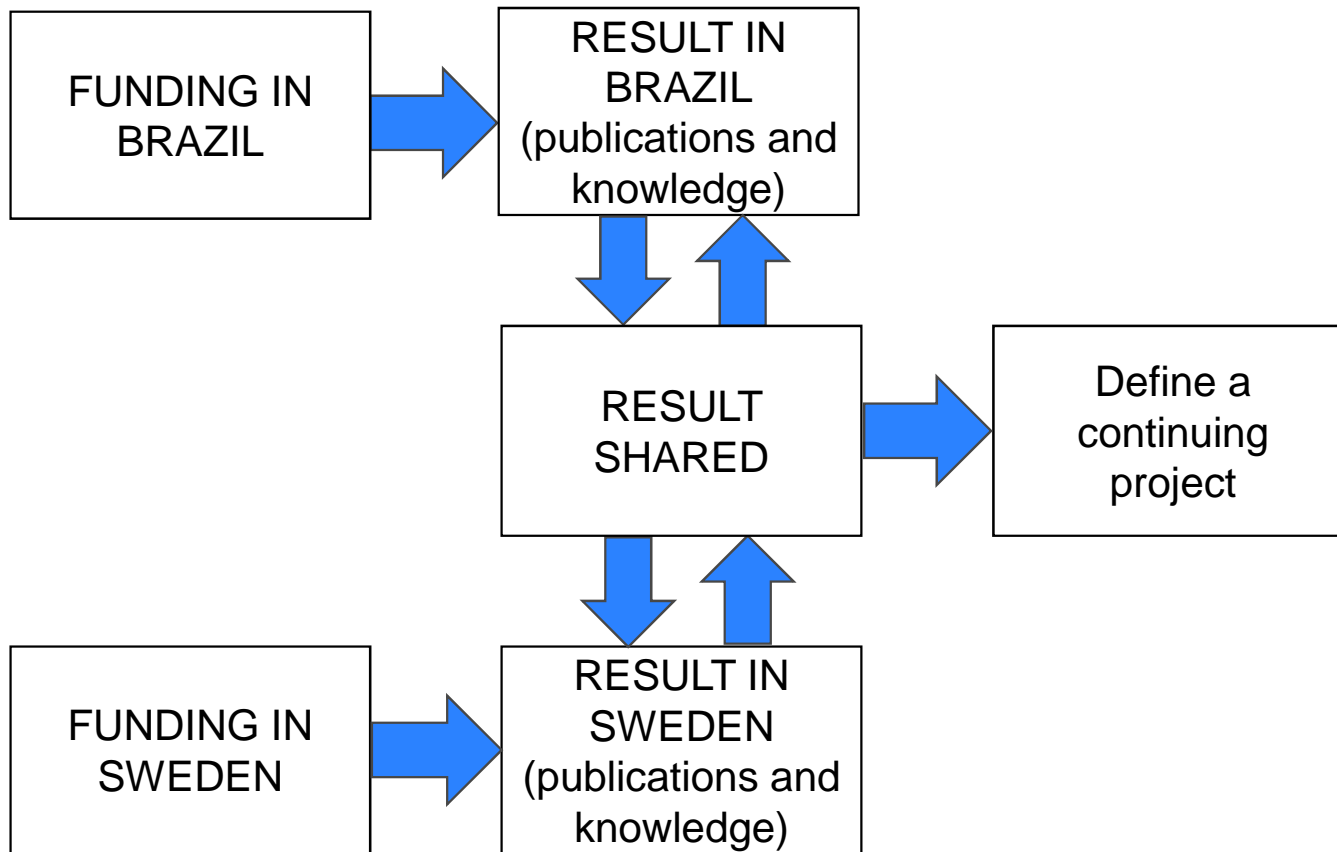


Area: Human interaction with intelligent systems

Sweden: Saab, LiU

Brazil: ITA

FUNDING AND RESULT OF PILOT PROJECTS



CO-ORDINATED CALLS



VINNOVA – SENAI AN EXAMPLE PROJECT

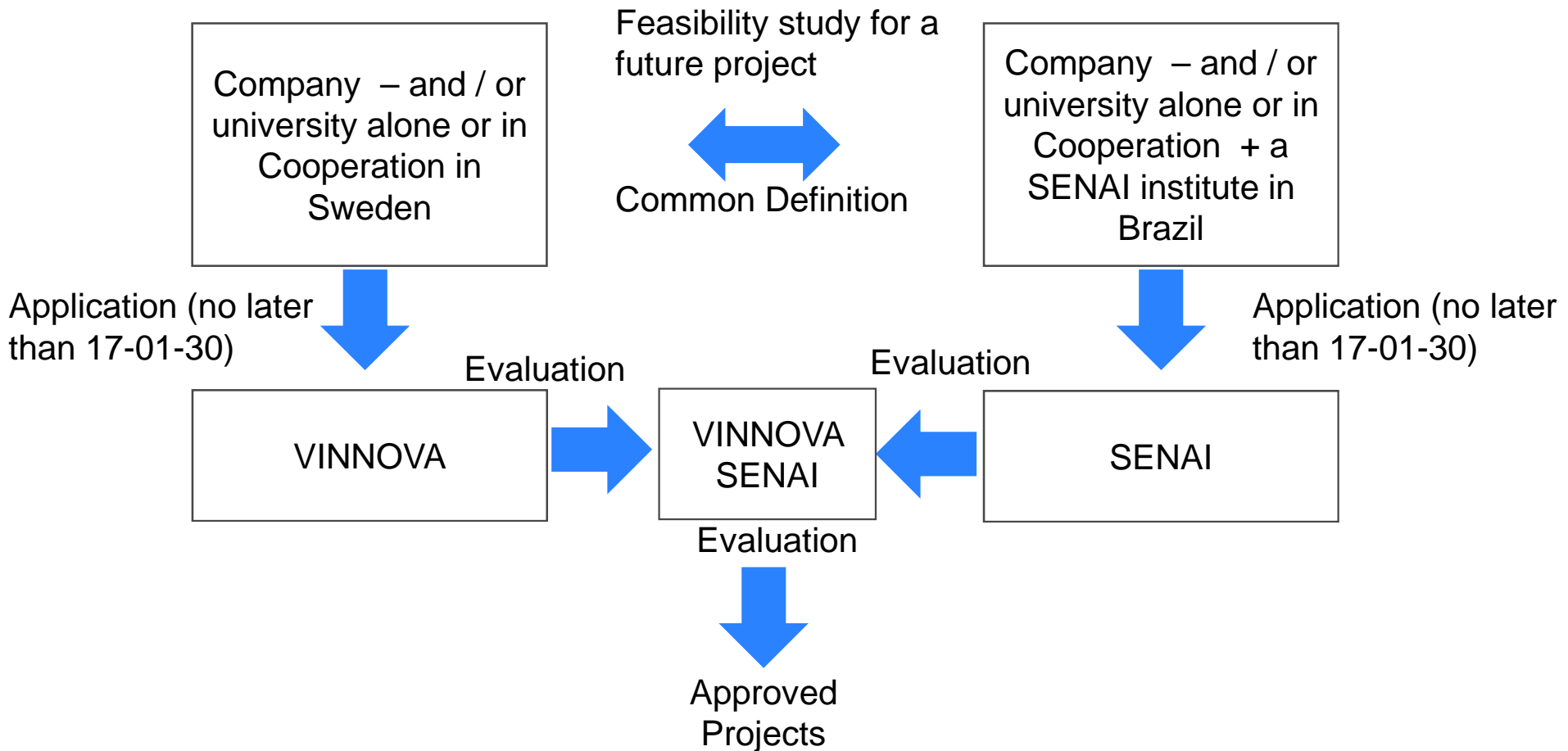
Internationellt samarbete Brasilien

Ulf Anderini, 2017-09-20

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VINNOVA – SENAI COORDINATED CALLS



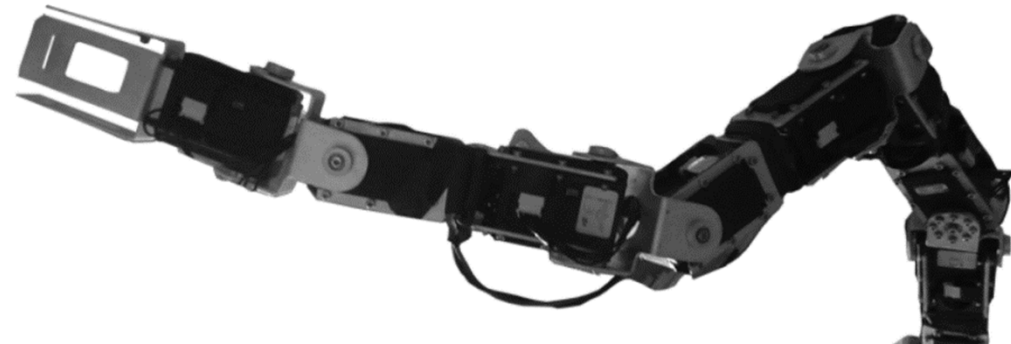
SNAKE ROBOT - CONSORTIUM & ROLES



- **Intelectron**
Inventor Snake-robot
- **ITA**
Brazil Air Force university supportive to Intelectron and experience of sealant dispenser. Robotic simulation
- **SENAI**
Funding agency as well as a role of the snake robot



- **Saab Aeronautics**
Requirements for the robot application
- **Linköpings University**
Human/Machine interface, quality control of application networking of Swedish-Brazilian Actors



EXPERIENCIES, FUTURE



EXPERIENCIES OF THE CALLS



Impressing footwork in establishing foundation for exchange of researchers - network

- CISB (Centro de Pesquisa Inovacao Sueco-Brasiliero)
- Scholarships
- Professors chair
- Vinnova
- Universities and others



Co-ordinated calls

- Brazilian innovation system
 - High TRL-levels
 - Industry funding (not in-kind)
 - Lots of details required in applications
 - Low Industry – academy research as of Triple Helix
- Sweden innovation system
 - Low TRL levels
 - Industrial hands-on
 - Reasonable degree of details
 - Triple Helix

FUTURE COLLABORATION

- Funding agencies, industry and academia exchange of knowledge for future calls with representative parties from Brazil and Sweden
- Rules and regulation understand differences / possibilities for harmonization of calls and project execution
- Build on existing agreements
- Horizon 2020 – EU programs (Brazil associated member)
- Governance organisation

