



RESEARCH & INNOVATION IN THE SWEDISH MINING INDUSTRY

Mikael Ramström

Global Strategic Projects & Alliances

**EU-Latin America Dialogue
on Raw Materials**

April 25-26, 2016

Atlas Copco

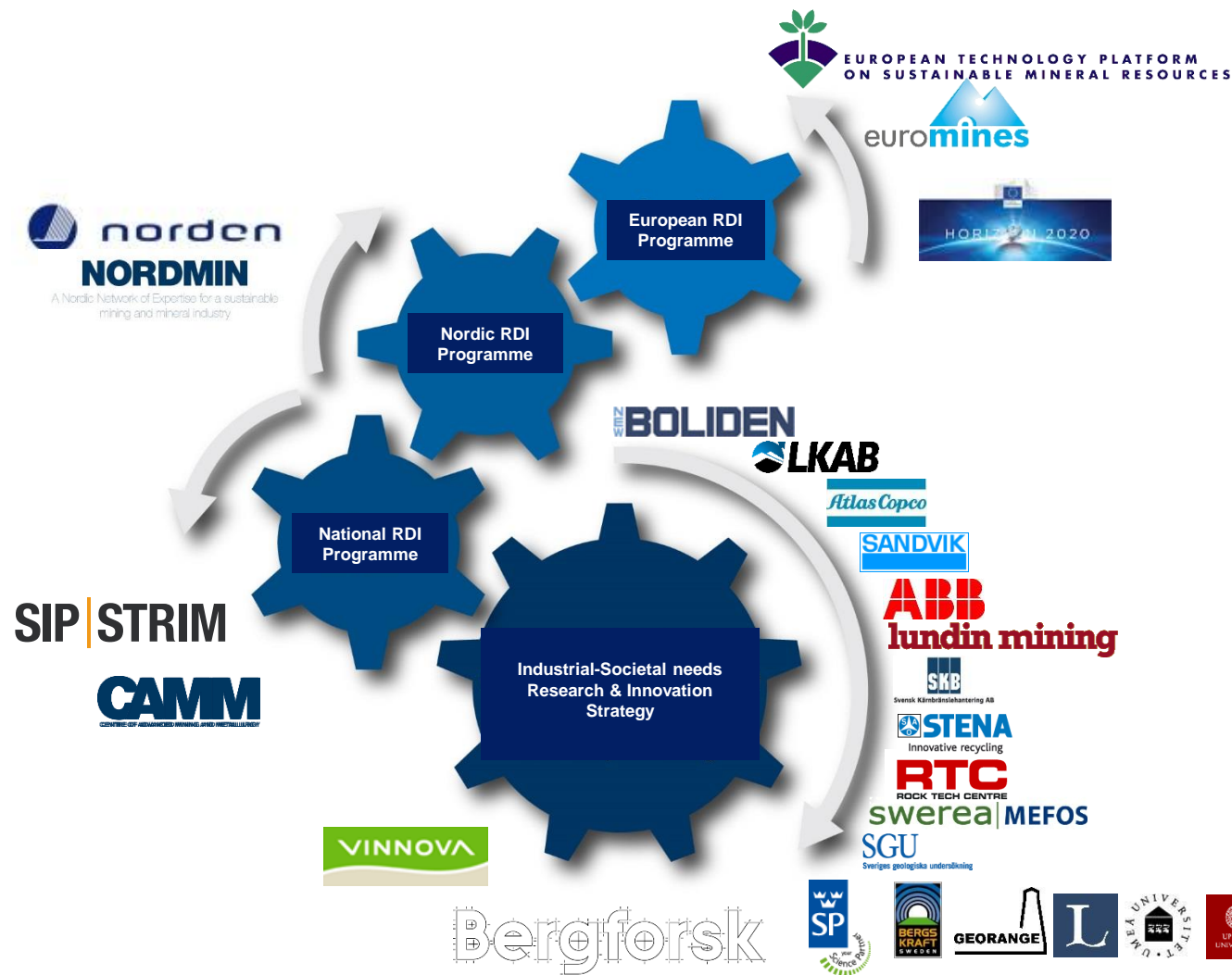
ATLAS COPCO

Established	1873 in Stockholm, Sweden
Four focused business areas	<ul style="list-style-type: none">■ Mining and Rock Excavation Technique■ Compressor Technique■ Industrial Technique■ Construction Technique
Global presence	Customers in more than 180 countries
Employees	More than 43 000 in over 90 countries
Annual revenues	BSEK 102 (BEUR 11.1)

Updated figures full year 2015.



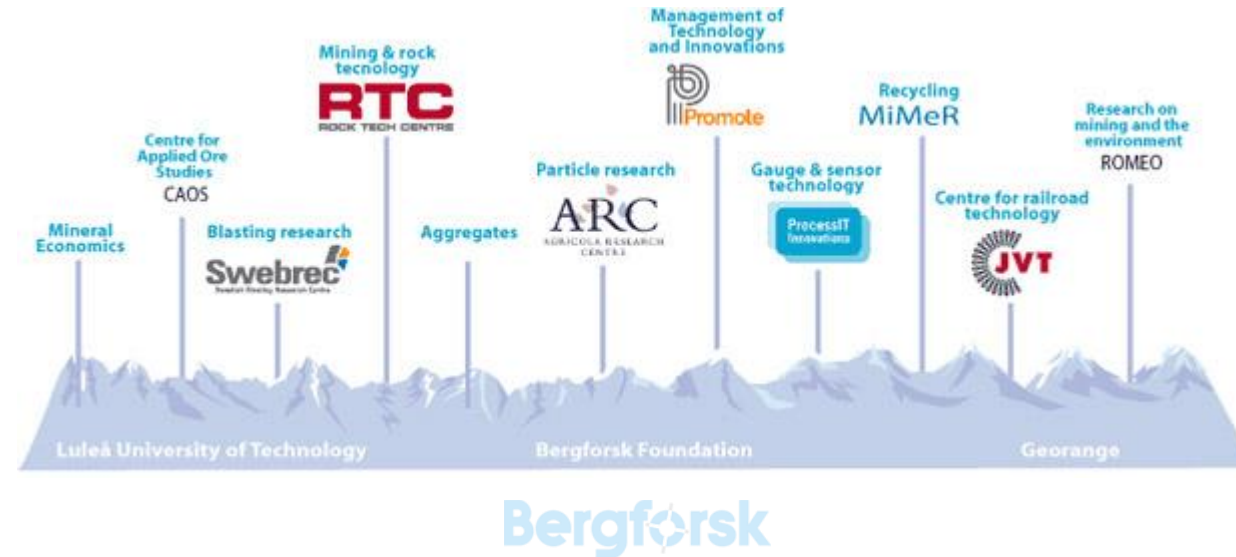
THE SWEDISH MINING CLUSTER



THE SWEDISH MINING CLUSTER

Bergforsk "think tank" and annual conference

- A Swedish research foundation for Swedish mining industry
- Annual conference in Luleå for dissemination of research results
- Strategy development on a 10-30 year horizon



SWEDISH MINING INDUSTRY FUNDED R&D

Rock Tech Centre – “Moving theory to practice!”

- Founded in 2005 the Nordic Rock Tech Centre AB (RTC) is seeking to identify and solve rock technology problems for the mining industry through collaborative industry funded projects.



Program MIGS II



Program ORESC

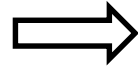


Program SMIFU

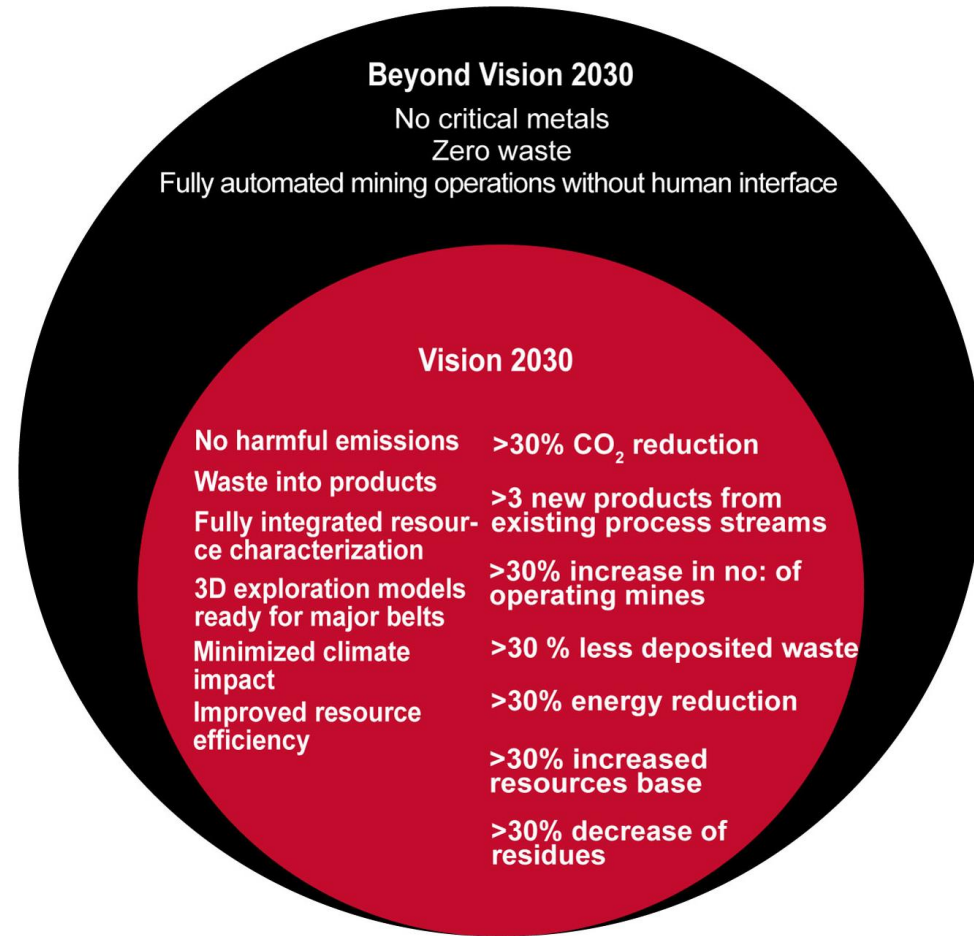


SWEDISH GOVERNMENT FUNDED R&D PROGRAM

Strategic innovation agenda



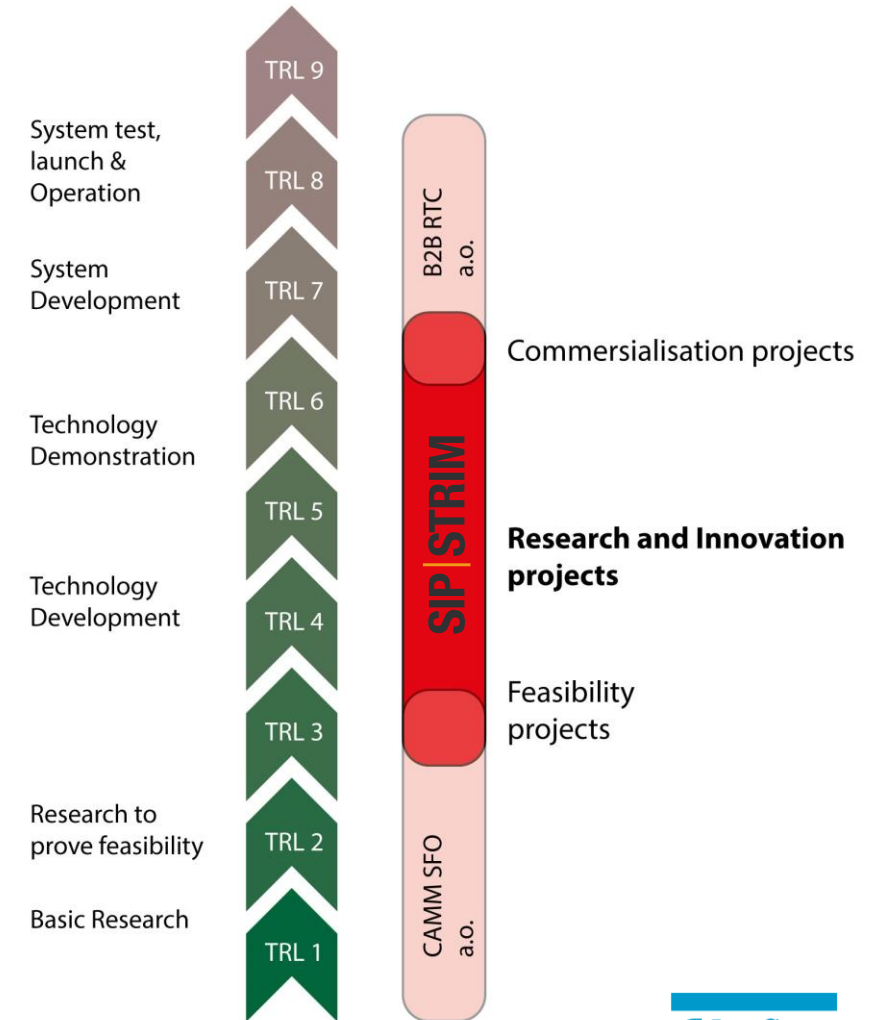
Strategic Innovation Program (SIP)



SWEDISH GOVERNMENT FUNDED R&D PROGRAM

SIP STRIM – Strategic innovation program for the Swedish Mining and Metal producing Industry

- Covers a broad thematic scope:
 - Innovative deep exploration
 - Secure and efficient mining methods
 - Resource efficient mineral technology
 - Recycling and metallurgy
 - Environmental assurance and environmental technology
 - Attractive workplaces
 - Gender patterns
- Technology readiness level (TRL) corresponding to 3–6
- 3 year budget: 180 MSEK (22,5 MUSD)



SWEDISH GOVERNMENT FUNDED R&D PROGRAM

CAMM – Centre of Advanced Mining and Metallurgy

- CAMM is a centre of excellence in mining and metallurgy at Luleå University of Technology.
- CAMM¹ had a 5 year funding (2010-2015): >100 MSEK (>12 MUSD)
- CAMM² soon to follow for one more 5 year period (2016-2020)
- Technology readiness level (TRL) corresponding to 1–3
- Five focus areas:
 - Exploration, Mining, Mineral processing, Metallurgy and Environment
- Executive management
Prof. Pär Weihed, Jenny Greberg, Sabine Mayer



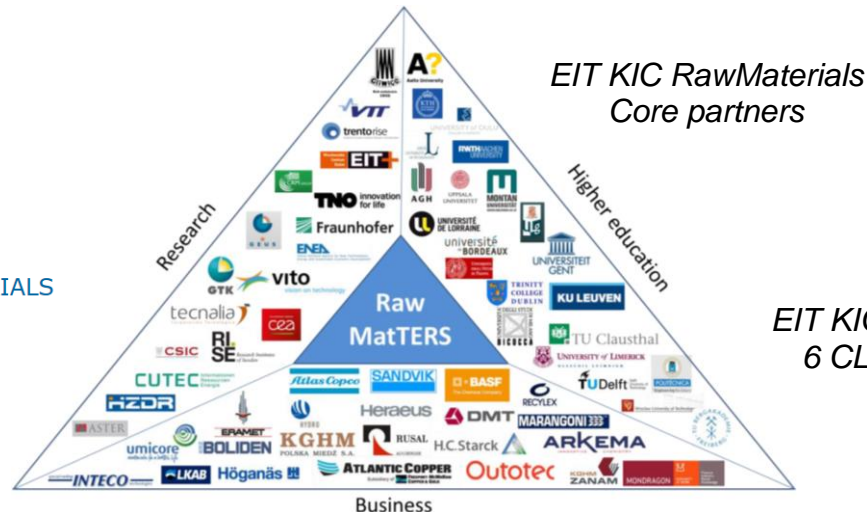
SWEDISH MINING INDUSTRY IN THE EU HORIZON 2020

EIP on Raw Materials and EIT KIC RawMaterials

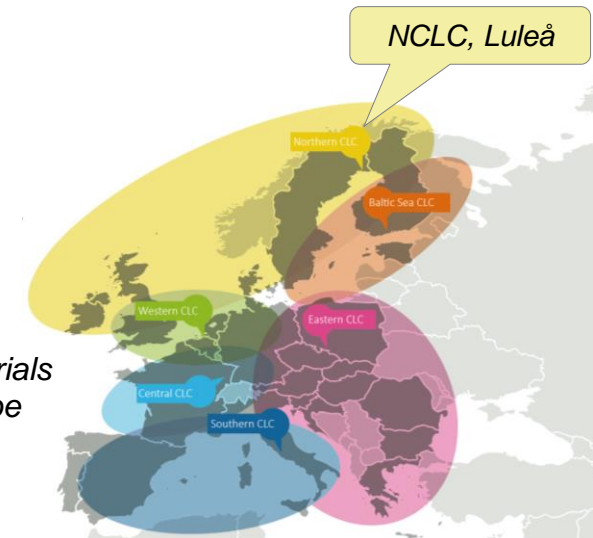
- EIP Raw materials, Swedish partners in High Level Group and Operational Groups
- EIT KIC on RawMaterials
 - More than 10 Swedish partners in EIT KIC RawMaterials consortium
 - One of 6 EIT RawMaterials Co-Location Centres (NCLC) are located in Luleå, Sweden
 - The NCLC in Luleå focuses is on Primary resources (mining) including:
“Exploration, mining, mineral processing and metallurgy; equipment, tooling and machinery for mining, mineral and metal producing industry.”



EIP ON RAW MATERIALS



EIT KIC RawMaterials
6 CLCs in Europe



SWEDISH MINING INDUSTRY IN THE EU HORIZON 2020

Preparing for – SIMS “Sustainable Intelligent Mining Systems”



WOULD YOU LIKE TO KNOW MORE?

Weblinks to more information:

- EIP on Raw Materials – <https://ec.europa.eu/growth/tools-databases/eip-raw-materials/en/content/european-innovation-partnership-eip-raw-materials>
- EIT KIC RawMaterials – <http://eitrawmaterials.eu/>
- Vinnova Innovation Agency – <http://www.vinnova.se/>
- Bergforsk foundation – <http://www.bergforsk.se/>
- RTC Rock Tech Centre – <http://www.rocktechcentre.se/>
- Strategic Innovation Program SIP STRIM – <http://www.sipstrim.se/>
- CAMM Centre of Advanced Mining and Metallurgy – <http://www.ltu.se/centres/camm>

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SUSTAINABLE PRODUCTIVITY.***



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