

RAKEL for Swedish Emergency Management Agency

Securing communication for a safer society

Saab Communication

Who am I? – Anders Åkeson

Leader for the consortium building RAKEL

- Born 1957, Reserve Officer Air Force
- M Sc Industrial Economics and Industrial Engineering, LiTH
- 17 years with Ericsson, 4,5 years with 3GIS AB
- Saab Communication since 2006
- Main focus has been Customer Project Management and Operations for Mobile Networks
- Lived in USA, Poland and Taiwan (ROC)



OUR MISSION

Securing communication for a safer society



In a changing world, communication is a key to building a safer society. Securing this communication is our mission.

WHAT WE DO

Integrated solutions in communication



For more than four decades Saab has developed integrated communication solutions for defense and civil security and provided qualified communication services and robust telephony-, data and radio communication solutions.

OUR APPROACH

From projects to life cycle commitments



From defined projects to life cycle commitments – through the system's entire life cycle we are offering a wide range of customer adapted solutions and a broad spectrum of consultancy services.

Project Definition for RAKEL



- To rollout a Swedish national TERrestrial Trunked RAdio (TETRA) network RAKEL for the Swedish Emergency Management Agency (SEMA)
- To operate a Swedish national TETRA network RAKEL on behalf of SEMA

Our partners in the RAKEL Consortium



EADS Secure Networks is a world leading provider of:

- Professional radio communications
- Infrastructure
- Mobile terminals
- Services for professional users

Eltel is one of the leading Infranet service companies in Europe with the prime focus on building and operating Electricity and Telecommunications networks.

A bit of facts

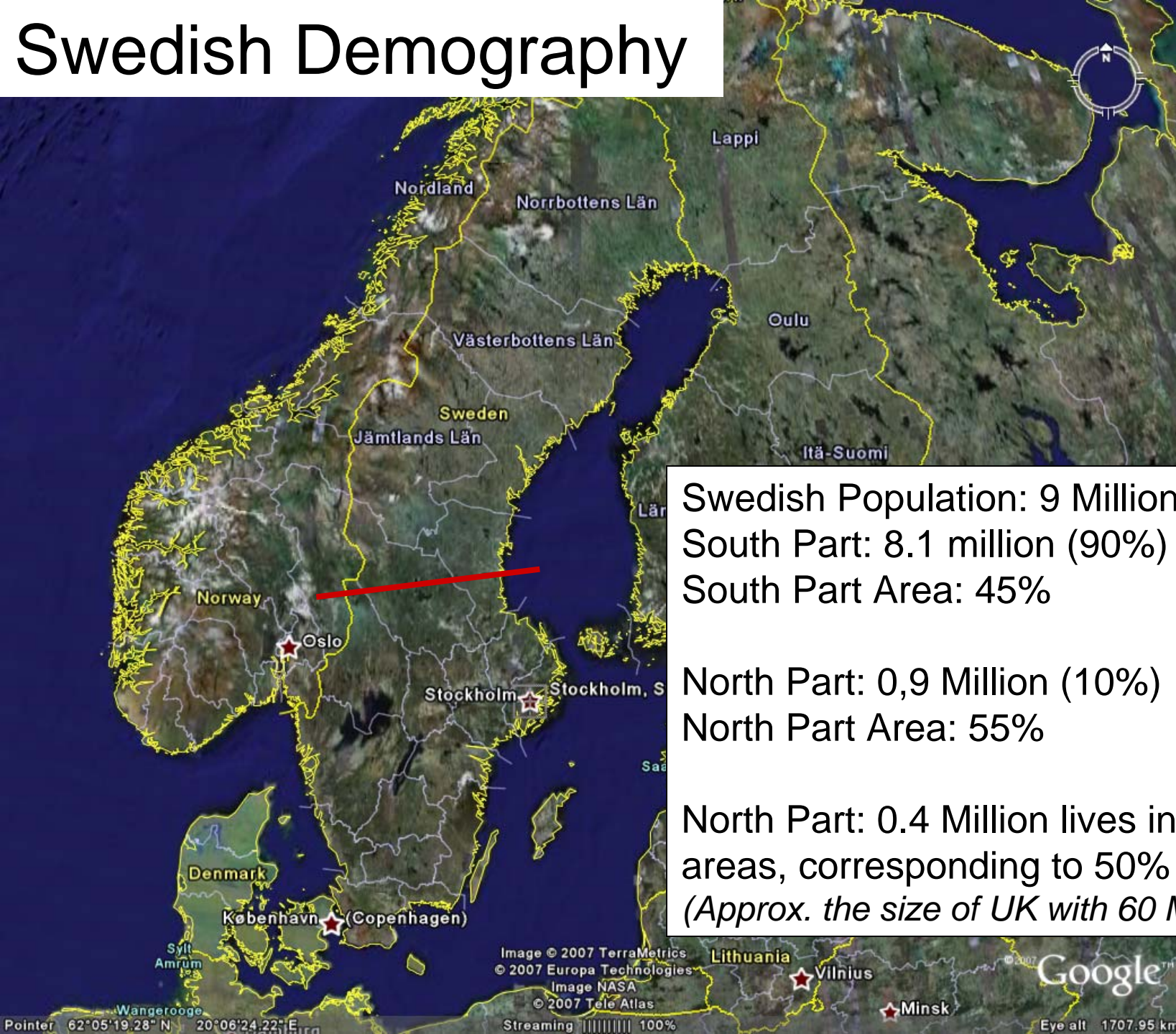
Sweden

- Total Area 449,964 square kilometers or 173,732 square miles
- 1500 kilometers long (930 miles)
- 320 kilometers wide (200 miles)
- Population of 9,0 million

California

- Total Area 404,000 square kilometers or 156,000 square miles
- 1100 kilometers long (680 miles)
- 340 kilometers wide (210 miles)
- Population of 35,0 million

Swedish Demography



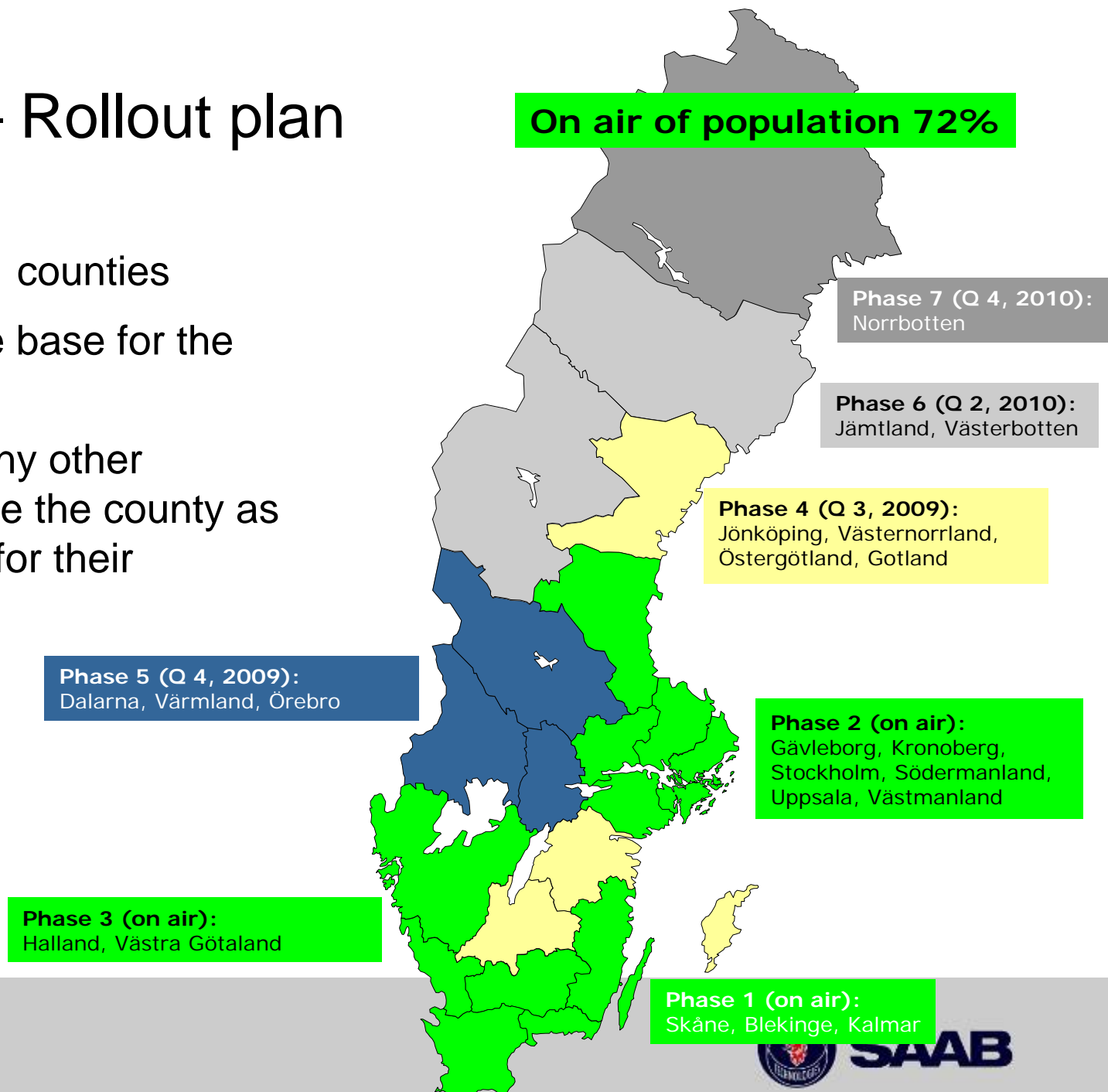
Swedish Population: 9 Million
South Part: 8.1 million (90%)
South Part Area: 45%

North Part: 0,9 Million (10%)
North Part Area: 55%

North Part: 0.4 Million lives in rural areas, corresponding to 50% of Sweden
(Approx. the size of UK with 60 Million)

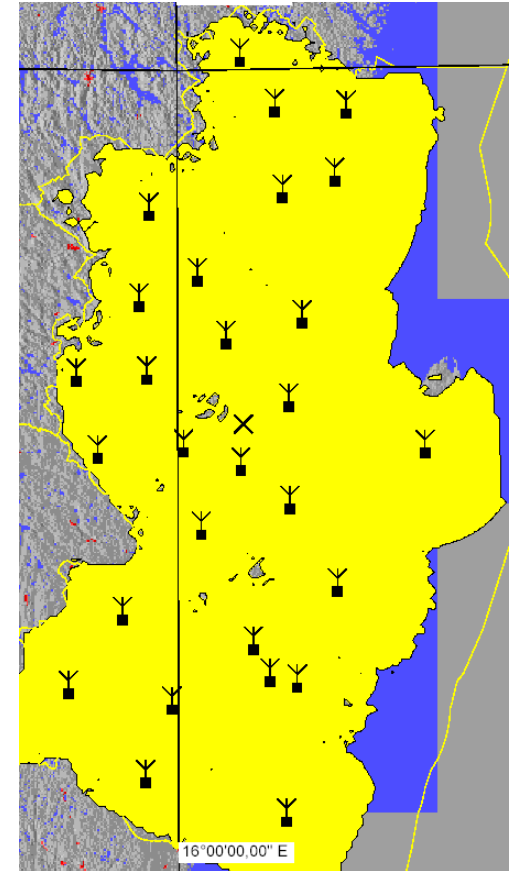
Sweden – Rollout plan

- Divided into 21 counties
- Counties is the base for the rollout plan
- Police and many other authorities have the county as building block for their organization



Considerations when designing a Public Safety network

- System **Availability**
 - core system design
 - transmission network
 - radio coverage
 - site design
- **Security** issues
 - secure communication
 - secure identity
- CAPEX and OPEX
- Scalability



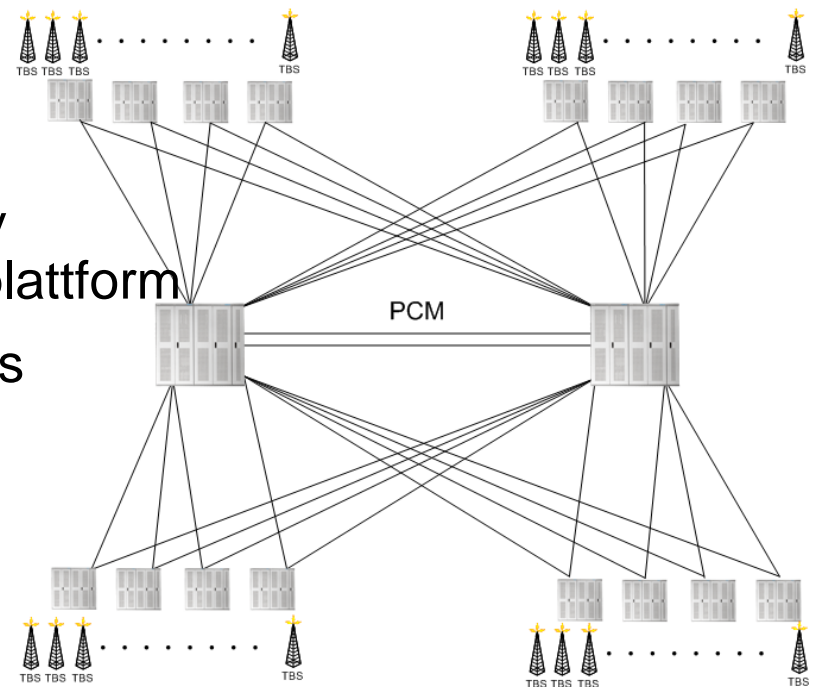
Network and Project Facts

- Approx. 2000 TETRA radio basestations (380-400 MHz)
- Reuse of existing infrastructure to reduce costs for SEMA
 - Phase 1-3 = approx. 10% new shelters, 2 new masts
- Indoor solutions to secure radio coverage in vital areas such as Sport arenas and Airports
- 5 switch locations spread out over the country
- Access transmission based on radiolinks and fixed line
- Mix of leased line and new transmission equipment owned by SEMA



Network and Project Facts

- 2-layer hierarchical network topology
- 2 fully redundant main nodes with interface to end user systems and networks (PABX, applications etc.)
- All TETRA switches based on the fully redundant and proven Nokia DX200-plattform
- No single-point of failure in switch sites
- Complete IP and Transport backbone between switch sites
- Centralized O&M of all active equipment in the network



Key system features – TETRA and RAKEL

- Air interface encryption
- End to End encryption possible
- Authentication of all users in the system
- Virtual Private Network
- Individual, group, broadcast and emergency call
- Fast call setup (<300msec)
- Fallback Mode and Direct Mode function
- SDS, Status Messages and Packet data
- Integration towards PABX



RAKEL

The Consortium has created for Swedish Emergency Management Agency:

- A secure network
- A reliable network
- Efficient operations of RAKEL
- Within the agreed Capex and Opex frame

For First Responders:

- An effective tool



The background of the image features the Saab logo, a stylized griffin head, rendered in a light blue color against a dark blue background. The griffin's head is shown in profile, facing right, with its wings and tail feathers visible. The logo is slightly blurred and appears to be part of a larger, larger-scale graphic.

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