



# Nordic Positioning Service- a short overview

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- Project proposal 2000
- Achievements since 2000
- The future

Edited by Bo Jonsson



# Background

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- A Mission from the Directors General to NKG early 1999:  
How can a Nordic Real-time Positioning Service be established?
- Reaction from NKG:  
A proposal for the design, operation and development of such a service was developed as a "Task force" in NKG:  
the project Nordic Positioning Service



# Nordic Positioning Service – project design 2006-2010

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## Steering Committee

Denmark: Lolita Bahl  
Casper Jepsen

Norway: Line Langkaas  
Per-Erik Opseth

Sweden: Andreas Engfeldt (secretary)  
Bo Jonsson (chairman)  
Peter Wiklund

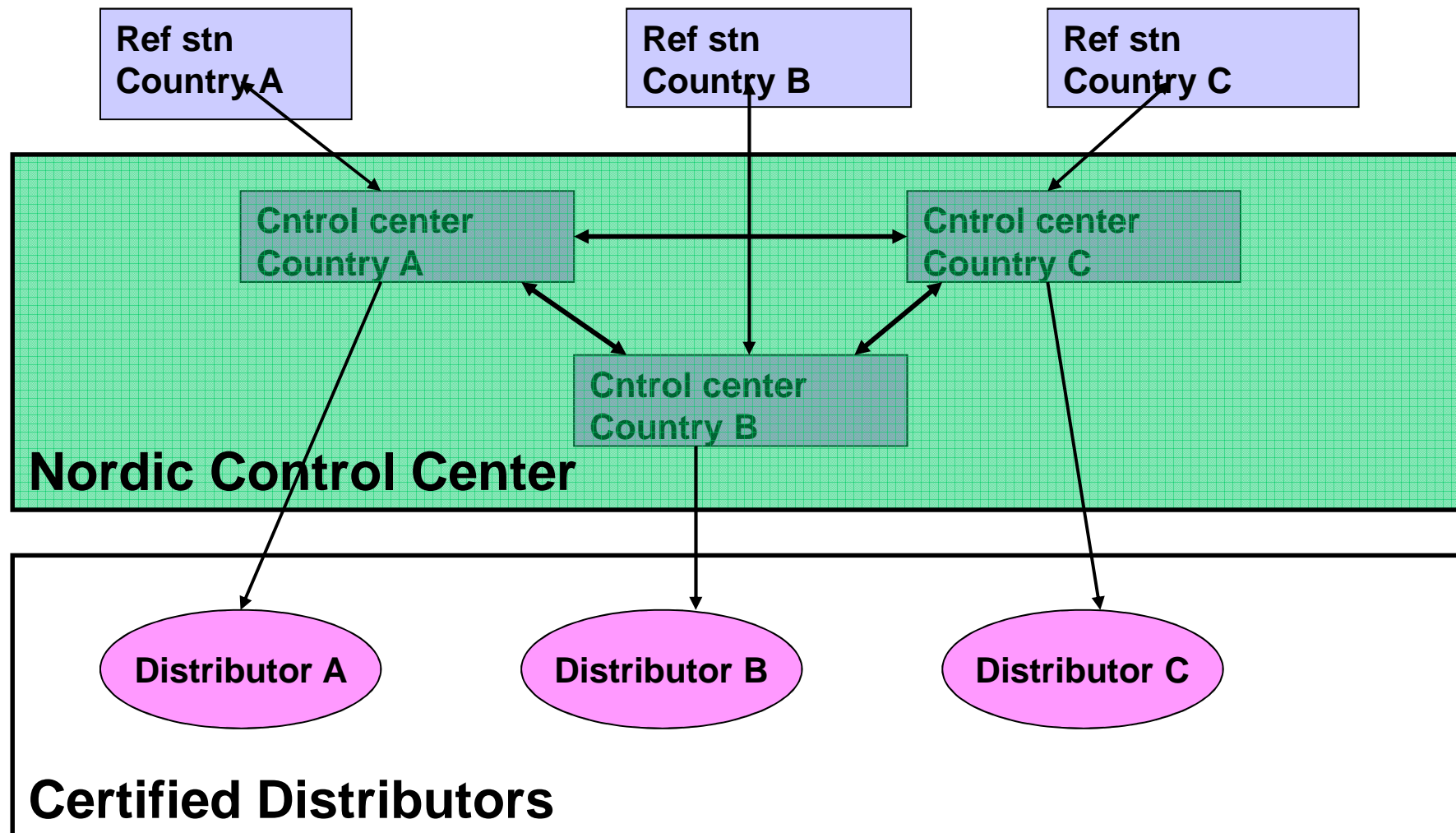
Tasks in the project are carried out by assigned Working groups



# A Nordic Real-time Positioning service

Proposed design – January 2000

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# Establishment and budget

Sub-project	Completed	Required Personnel resources (MM = Man Months)	Travel expenses	Required economic resources
Project management	December 2001	31 MM	425.000 Kr	3.000.000 Kr Project leader + secretary
Nordic Internet download service	October 2000	7 MM	210.000 Kr	200.000 Kr Consultant Computer
Automated Post-processing service	March 2001	8 MM	245.000 Kr	200.000 Kr Consultant
Real-time Positioning Service. Half-metre accuracy.	November 2000	12 MM	120.000 Kr	800.000 Kr Leased lines for two years
Test of distribution channels	February 2001	6 MM	50.000 Kr	700.000 Kr DARC, WAP and DAB
Network RTK softwares, test-bed, test and evaluation	December 2000	15 MM	385.000 Kr	395.000 Kr RTK-software Communic. Consultant
Market analysis	March 2001	4 MM	50.000 Kr	300.000 Kr Consultant
Design of a Nordic real-time Service	September 2001	14 MM	210.000 Kr	
Procurement of an Operational Network RTK software	August 2001	6 MM	70.000 Kr	1.000.000 Kr RTK software
<b>Totally</b>		<b>103 MM =5.150.000 Kr</b>	<b>1.765.000 Kr</b>	<b>6.595.000 Kr</b>
<b>Total project cost</b>			<b>13.510.000 Kr</b>	



# Responsibilities between the Nordic countries

Sub-project	Responsible country
1-A0: Upgrade of existing Nordic reference stations	Denmark
2-A1+A2: Establishment of a Nordic Internet data downloads service and an automated computation service	Denmark
3-B: Establishment of a Nordic real-time service with half-meter horizontal position accuracy (95 %)	Norway
4-C1: Test of distribution channels	Norway
5-C1B: Establishment of a test bed and evaluation of available network-RTK algorithms	Sweden
6-C1C: Market analysis	Sweden
7-C2A+C2B: Design of a Nordic Real-time Positioning Service and: Procurement of an operational network-RTK software	The Technical Management Group



# **A Nordic Real-time Positioning Service - project proposal**

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## **Benefits**

- **Transfer of know-how**
- **Common development work**
- **Standardisation - larger user groups**
- **Less operation costs**

## **Draw backs**

- **Higher development/implementation costs during an initial period (13.510 KKR)**



# **A Nordic Real-time Positioning Service - project proposal**

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## **Some Challenges**

- **Unix – Windows**
- **Only prototypes of Network-RTK-software available**
- **Interoperability between different brands of receivers and data formats**





# Decisions about the project proposal

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- No extra funds was granted from the Director Generals
- No funds was granted from the Nordic development council
- NKG decided to run a reduced project "Nordic Positioning Service" with available resources at the Mapping Authorities



## Some achievements of the project (1)

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- Agreements about exchange of data from reference stations signed by the Directors General in 2002
- First operative collaboration was demonstrated 2002 at a Director Generals meeting in Denmark
- A classification for reference stations has been developed
- Initiator to the Nordic campaign about the EUREF realization
- Increased use of data from networks of permanent reference stations



## Some achievements of the project (2)

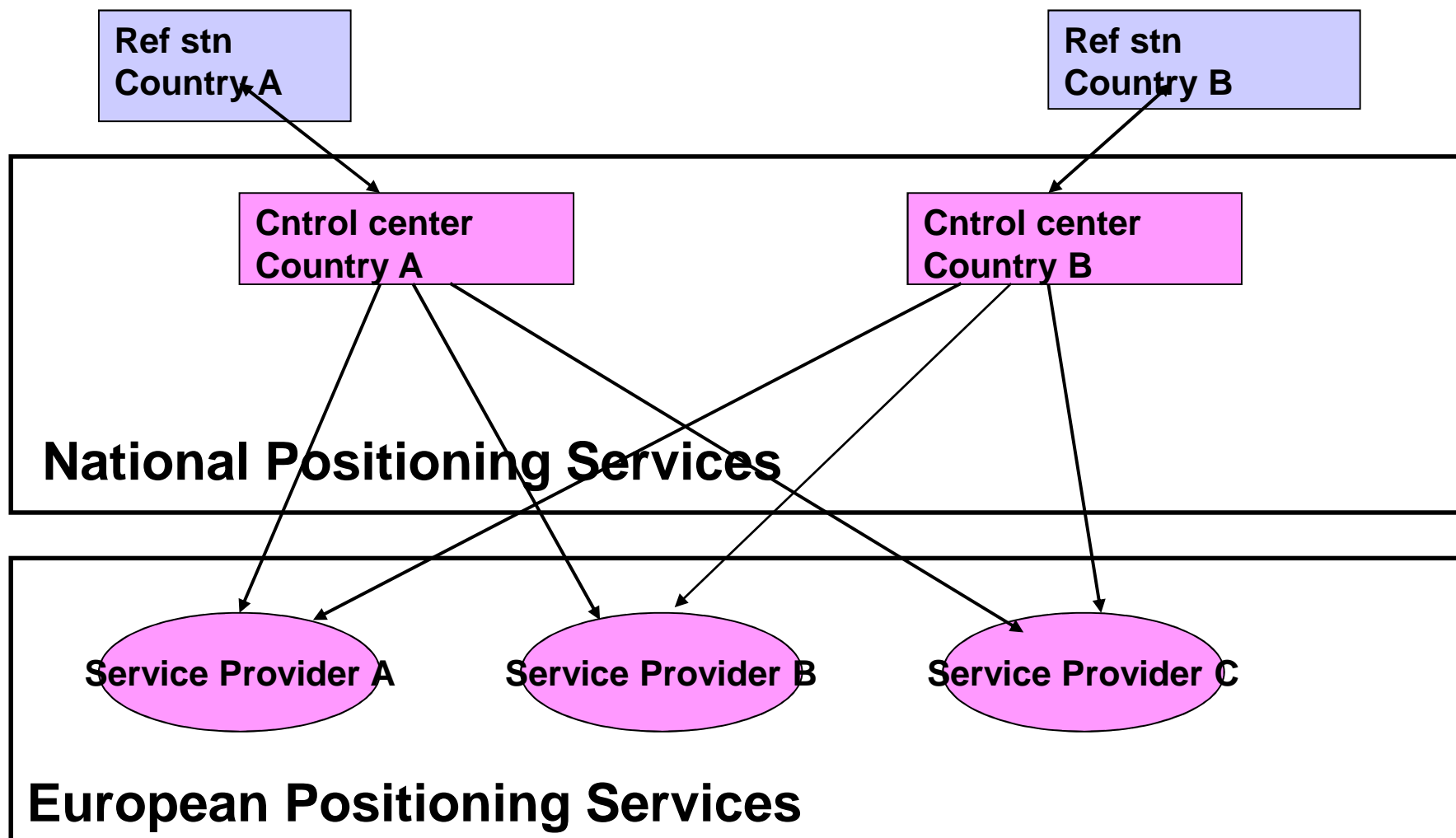
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- Exchange of know-how concerning use of data from networks of permanent reference stations and operation of networks of permanent reference stations
- Exchange of reference station data along the borders Finland-Sweden, Norway-Sweden, Denmark-Sweden for the national Network-RTK-services – reduce the number of national reference stations
- An inter-Nordic subscription on Network-RTK-services in Finland, Norway and Sweden



# Trends today

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# Challenges for the Mapping Authorities

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Certify that positioning services operate in the national reference system

- laws for Positioning services
- provide raw data from "national" reference stations to Positioning services