

# Helping 3GIS compete smarter in its shared network with Nokia Siemens Networks



In Sweden, two 3G operators made a network sharing agreement covering a significant part of their network to help lower capital and operational expenditures, speed up network rollout and improve the business case.

To build and deliver their network, they established 3GIS. Nokia Siemens Networks is providing a comprehensive range of Managed Services to 3GIS. By turning over the operation, maintenance and handling of the shared network, 3GIS is delivering the most cost-effective network possible to its owners.

Two mobile operators in Sweden, Hi3G Access (3 Sweden) and Vodafone Sweden, came together to establish 3G Infrastructure Services AB (3GIS). This joint venture is providing a shared UMTS network that will ultimately cover 70% of the nation's population.

Nokia Siemens Networks has played a central role in delivering the 3GIS network. In October 2001, 3GIS chose Nokia Siemens Networks to be the exclusive supplier of its UMTS core and radio network. Subsequent agreements have followed, the most recent announced in February 2007 and which renews the contract, confirming our role as sole supplier for managing the network. The new agreement provides 3GIS with the competence needed to manage the network, and helps 3GIS offer enhanced services to its client operators.

In addition, the capacity of the 3GIS transport network is to be upgraded by the implementation of Nokia Siemens Networks SDH microwave radios to ready the network for future mobile broadband services.

Today, we operate the 3GIS network from our Network Operations Center (NOC). Moreover, we are providing a full range of services that include technical front office, network monitoring, second line maintenance, performance and configuration management, multi-vendor spare part management, as well as field and site maintenance services.

To ensure operational efficiency and optimal network management, optional Nokia NetAct™ functionalities have also been provided to 3GIS' Operations Support System as part of the agreement.

#### **Shared infrastructure saves costs and reduces risk**

3GIS' mission is straightforward: "To deliver cost-effective network coverage and capacity to our owners and customers in accordance with their requirements," said Magnus Zetterberg, the company's CEO. The impetus for 3 Sweden and Vodafone Sweden to cooperate in building a common network infrastructure was cost savings and risk reduction. Noted Zetterberg: "There are very significant cost savings from having a shared infrastructure in areas where there is low density population, especially in Sweden's rural areas. You can save a lot of money."

#### **The establishment of 3GIS**

In Sweden, regulators require UMTS operators to cover a minimum of 30% of the population individually, while permitting the remaining 70% to be covered in a shared network arrangement.

To take advantage of the benefits of a shared network, two mobile network operators, Hi3G Access (3 Sweden) and Vodafone Sweden, came together in April 2001 to form 3G Infrastructure Services AB (3GIS). 3GIS' mission is 'to deliver cost-effective network coverage and capacity to their owners and customers'.

“3GIS and Nokia Siemens Networks have together developed a highly effective mode of operation that allows successful cooperation and management of one of the largest 3G networks in the world,” says Magnus Zetterberg, Chief Executive Officer, 3GIS. “It is great to have a reliable supplier who can provide us solutions and operations that enable significant cost savings and allow us to focus on other areas.”

3 Sweden and Vodafone Sweden have achieved many benefits by adopting a shared network. First of all, by using one network infrastructure, each party covers only 50% of the CAPEX and OPEX required. Secondly, sourcing equipment as a single entity enables volume purchases, and the resulting economies of scale mean further savings.

And finally, choosing a single vendor contributes to a faster rollout, fewer technical and process issues and more harmonious integration of all network functionalities and services.

#### **Unique challenges, innovative approaches**

In the nationwide rollout of the shared 3GIS network, Nokia Siemens Networks successfully met the customer's specific challenges. These included:

**Exceptionally rapid deployment**  
Regulators in Sweden require that UMTS license holders meet a standard of more than 99% population coverage, which alone meant exceptional logistical challenges and deployment schedules. Nokia Siemens Networks met 3GIS' rollout on schedule and both network owners were among the first in the world to launch their 3G services.

**Protect competing owners' data**  
As this network was the first case in which competing 3G operators share the same network infrastructure, unique procedures had to be implemented to protect each owner's data.

**Need for innovative configuration tools and deployment processes**  
Due to the rapid deployment demands, usual lead times between site deployment and commissioning were no longer workable and required new approaches as well as new tools from Nokia Siemens Networks to expedite the entire process.

#### **Early seamless GSM/UMTS coverage**

Concurrent with rolling-out the UMTS network, ubiquitous geographic coverage was a necessity even in un-served UMTS areas to ensure seamless voice call handoffs and data access for users, and thus required dual UMTS/GSM functionality and solutions from Nokia Siemens Networks right from the beginning.

Beyond several deployment challenges that faced Nokia Siemens Networks, 3GIS had to be sensitive to the concerns of their competing owners. “Working out the responsibilities among shareholders can be complex, but it's important,” said Zetterberg. “You cooperate in rural areas for coverage, but you still compete on service offerings – there is a good payback for this cooperation.”



### **Flexible, end-to-end services for 2G/3G networks**

Nokia Siemens Networks was well prepared to take on this multi-faceted job. For more than a decade, we have been developing our WCDMA solution, and as of the end of January 2005 had over 45 customer references and 25 system deals, 14 of which we are the sole supplier.

Nokia Siemens Networks offers the widest portfolio of WCDMA radio access solutions for both indoor and outdoor coverage, and allows for remote control capabilities thus reducing costly site visits.

Nokia MSC Server System architecture can simultaneously support GSM, EDGE and WCDMA access systems, and the Nokia NetAct network and service management system provides integrated 2G/3G management of multivendor networks with a single system.

Specific to the 3GIS case, Nokia Siemens Networks brought competence and proven experience in operating a network. Also noteworthy for 3GIS was our integrated supply of System, Care Services and Operations and Maintenance know-how. In particular, Nokia Siemens Networks is providing monitoring, configuration management, performance management and system administration using Nokia NetAct tools such as Traffica and Service Quality Manager. The strengths in our offering were instrumental in reconciling time schedules, service level targets and usage agreements among the co-owners of the network.

### **A benchmark for similar deployments**

To date, the 3GIS network has been delivered on time, on budget and is functioning as specified. In addition to the delivery of more than 4,000 base station nodes and the gateway core network, we have been operating the network from Nokia Siemens Networks NOC.

Cooperation between Nokia Siemens Networks and 3GIS has also been excellent. Observed Magnus Zetterberg, 3GIS CEO: "Nokia Siemens Networks is perceived to be very dedicated to support 3GIS, and has worked very hard to meet our objectives, even if we face a lot of challenges."

The 3GIS shared network case has given the mobile telecommunications industry an exciting example of how competing operators – in partnership with a dedicated supplier – can achieve significant savings while lowering their risks in deploying their network. Similar cases have followed, for example in Australia. The results can be a win for all parties. "The experience of Nokia Siemens Networks as a partner in rolling out the network and working with us has been good, and they have delivered a network which performs very well," summarized Zetterberg.

### **The challenges**

#### **For the operator:**

- Reduce CAPEX and risk levels
- Meet regulatory service and coverage timetables

#### **For Nokia Siemens Networks:**

- Provide implementation services to achieve UMTS nationwide coverage under an extremely challenging schedule
- Provide concurrent 2G and 3G coverage during rollout
- Deliver a comprehensive set of network services that allow 3GIS to outsource the operation of its shared network

### **The benefits**

- Faster roll-out and launch of UMTS network
- Shared CAPEX investment
- Improved business case
- Outsourced operation of the network, allowing network owners to allocate resources for other purposes, for example customer acquisition and retention, service creation, operation of specific areas of their own network
- Full range of services and support, with flexibility in delivering only those requested by network owners
- Customized service definition to meet network owners' requirements with ensured confidentiality of each owner's data

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