



# Nera Integrates Telecommunication Systems with IONA

## Customer Information

|                      |                    |
|----------------------|--------------------|
| <b>Customer:</b>     | Nera               |
| <b>Headquarters:</b> | Bergen, Norway     |
| <b>Industry:</b>     | Telecommunications |
| <b>Solution:</b>     | IONA Orbix         |

## Customer Overview

Nera Networks develops and manufactures fixed, wireless, and satellite communication equipment and systems, and is a supplier of an extensive range of microwave radio products to customers worldwide. Nera uses its 50 years' experience to create market-leading solutions based on innovative technologies.

Nera CityLink is a compact radio relay communication system. CityLink is designed for low cost, rapid system implementation, and is used specifically for high-capacity business networks, multimedia over radio services, and broadband radio access networks. Nera has worked with other telecommunications vendors to create an interface between Nera CityLink and third party management systems.

Nera chose to develop this interface with Orbix because of IONA's reputation as a market leader, and because of IONA's experience with telecommunication infrastructure.

*"Our ability to integrate Nera CityLink with major third-party management systems has given our customers the ability to expand their optical networks quickly and at low cost. We needed a stable and reliable interface between the two management systems. Orbix provided this interface plus the flexibility to reuse it for other products in the future."*

*Lars Søråas  
Group Leader, Management System Development  
Nera Networks*



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## Challenge

Microwave radio solutions are an alternative to underground fiber optic lines, and are a cost-effective way to provide service to remote areas and where digging conditions are difficult. Nera saw the potential of the product to expand into the radio frequency market. Nera began a project to integrate third-party management systems with the CityLink management system, NEW-NMS.

Nera looked for a technology that would allow them to create the interface quickly and in a standards-based way, so that it could be used with other management systems in the future. Stability and reliability was also of major importance.

## Solution

The interface has created a powerful telecommunications solution. Within cities, optical fiber is usually used as the transmission medium because the road infrastructure allows for optical cable to be put underground with little difficulty and at relatively low cost. With the Orbix interface, CityLink allows telecommunications operators to extend their network outside the city quickly using radio frequency transmission instead of optical fiber. This removes the need to lay cables, which is expensive and not always possible.

New mobile telecommunication operators can use this method as a way of getting into the mobile market quickly. The cost of using radio frequency transmission is much lower than that of an optical network. Also, radio equipment is easy to install and work with. Small companies use CityLink to communicate between remote locations. At each location there is one indoor and one outdoor device. The system can be operating within two days.

## Results

Nera wanted to ensure that the interface would be reusable for other similar products in the future. The TeleManagement Forum provides technical standards for protocols and equipment within the telecommunications industry. It provides standards for ATM networks and, in this case, it provided Nera with a standard to integrate NEW-NMS with third-party management systems. Nera adhered strictly to the standard during the development of the interface. This gives Nera the ability to use the interface for any other standards-based management system in the future.

The interface allows other management systems to request information from CityLink's management system, NEW-NMS. It can request network information such as notification of new nodes on the network or the type of equipment being used at a particular node. Also, NEW-NMS can send event notification that details the state of the network, including equipment problems, errors in a transmission, or the deterioration of the signal below acceptable levels.

"With the growth of mobile telecommunications, we have seen an increase in the use of radio frequency communication. This is mainly due to the speed, low cost, and relative ease of implementation. Using Orbix to integrate CityLink with an optical network management system has opened a new market for us and increased our customer base," said Mr Søråas.

## Why IONA

- **Market leadership** - Nera had no CORBA experience, and wanted a mature product from an established and trusted vendor who had a strong support organization
- **Reusable, standards-based solution** - reusability was critical to Nera, and IONA's strict adherence to standards made Orbix an easy choice
- **High-performance, high reliability** - Nera had stringent performance and scalability requirements for the new architecture, and they chose IONA for its worldwide reputation for supporting business-critical applications

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