# Sennheiser/e-GITS

*A Qt Customer Success Story*

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**Summary**

When audio technology pioneer Sennheiser teamed with partner e-GITS to develop NET 1, a sophisticated new application for managing and monitoring sound networks, Sennheiser and the development team opted to employ an advanced development platform – Qt from Trolltech. A cross-platform C++ application framework that enables developers to write a single source that runs natively across multiple target platforms, Qt proved an ideal solution for the four-person development team. Powerful, flexible and easy for developers to use, Qt helped e-GITS create an application that intuitively customizes the display of back-end information so NET 1 users see only what they need to. The verdict? Sennheiser made its product launch deadlines by delivering a robust, quality application, and e-GITS is already developing another, even larger product with Qt.

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Sennheiser is, quite literally, the company heard 'round the world.

For 60 years, the name Sennheiser has been synonymous with top-quality products and tailor-made solutions for every aspect of the recording, transmission and reproduction of sound. The company provides wireless microphone systems for the broadest range of performances – from the world's most revered philharmonic orchestras to pop artists like Madonna and the punk band Simple Plan – and delivers flawless sound for globally televised events like the Academy Awards.

And today, with more than 1,600 employees and annual revenues of approximately $379 million US, Sennheiser continues to forge new ground in audio technology.

Sennheiser, together with its service provider partner e-GITS, recently embarked on a new project for its line of wireless microphone systems: a desktop application that allows users to maintain a clear overview of an entire network of multi-channel sound systems.

The sophisticated application comes complete with real-time monitoring and remote control of all relevant receiver and transmitter parameters.

The application is part of Sennheiser's new NET 1 system, was officially launched in March 2006 at the prolight+sound conference, the world's largest international trade fair for event and communication technology and audio-visual production and entertainment. To use the NET 1 application, users need only connect a PC to the rack-mountable NET 1 hardware appliance.

While previous systems were developed using MFC as the underlying architecture, e-GITS and Sennheiser quickly realized that the sophisticated new NET 1 application demanded something more.

**A sound solution in Qt**

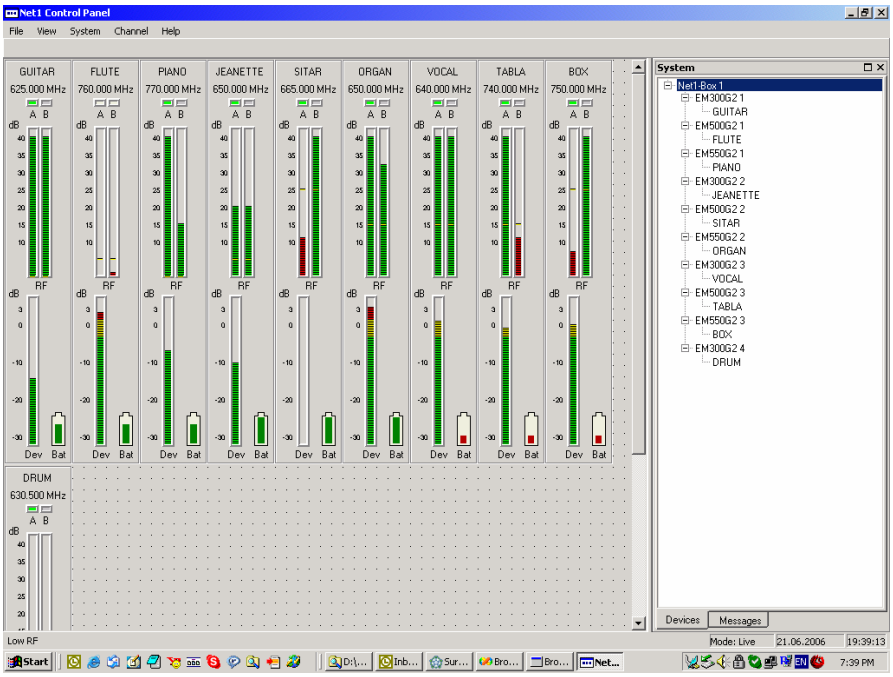
After exploring several alternatives, the team chose Qt by Trolltech. A cross-platform C++ application framework, Qt enables developers to write a single source that runs natively on multiple target platforms. Qt's elegant object-oriented architecture enabled e-GITS' team of developers to design the NET 1 application quickly and easily.

**"Qt was intuitive. We only needed a couple of weeks to get up to speed."**

"We saw immediately that Qt was going to be easier to use," says Sven Liess, managing director of global IT solutions provider e-GITS. "We saw that the libraries, the way Qt is structured, and its object-oriented design were going to give us the flexibility we needed." In particular, e-GITS and Sennheiser liked Qt's use of SQL, XML and Model/View architecture. The latter, in fact, became extremely important as the project progressed.

e-GITS began its Qt programming with no official training. "It was intuitive," Liess recalls. With four dedicated programmers working a total of 24 man months (across seven calendar months), more than 10,000 lines of code make up the user interface and

back-end structure of the NET 1 system. “We only needed a couple of weeks to get up to speed,” he added. “We ramped up quickly.”




**Qt 4: Programming made easier**

Key to the success of the project was the use of Qt 4. In this latest version of Qt, Trolltech introduced a new set of item view classes that use a model/view architecture to manage the relationship between data and the way it is presented to the user. The separation of functionality introduced by this architecture gives developers greater flexibility to customize the presentation of items, and provides a standard model interface to allow a wide range of data sources to be used with existing item views.

For Sennheiser and the programmers at e-GITS, splitting data between the application's front and back end is useful for efficiently displaying information to users. The back-end data contains all relevant information about connected devices, and the front end data conforms to user-selected settings and information views. With NET 1, an individual user can easily design his or her own look and feel of the front end, and the application stores and reloads those settings on demand. This "plucking" concept will be extremely important for supporting new devices that come onto the market – and as such, it makes the NET 1 system a wise investment for Sennheiser customers.

**"With Qt, we know we can deliver quality applications in time."**

Though initially available only on Windows PC-based systems, developing with Qt has shown e-GITS how easily the system could be made available on Apple Macintosh or other platforms when customer demands dictate the need.

For now, the second Qt-based project for Sennheiser has already begun. "It's a bigger project than our first Qt project," says Liess. "With Qt, we know we can deliver quality applications in time."

For Sennheiser and its audio system customers worldwide, that's a song worth hearing.