

# ESG

ENGINEERING SERVICES GROUP

Technical Consulting

Customized Workshops & Training

Network Design & Deployment

Network Optimization & Technology Evolution

Network Applications Services

## **QUALCOMM Engineering Services: Partnering to Accelerate Your Success**

*Design, deployment, optimization and technology evolution services for wireless networks worldwide*

The convergence of high-speed wireless and personal electronics into multi-use devices and the implementation of enhanced broadband services are driving new revenue streams and increased network use. For the telecommunications provider, this warrants increasingly advanced wireless networks, in-depth insight into technology evolution and upgrade paths.

ESG partners with operators and vendors worldwide to deliver network engineering services that meet current and future wireless communications needs.

# End-to-end System Engineering

ESG offers expertise in 3GPP and 3GPP2 standards including the current, most promising developments in wireless: CDMA2000/EV-DO, WCDMA/HSPA, OFDM and IP-based technologies.

Our hands-on engineering approach allows us to deliver customized solutions throughout the network lifecycle such as RF design, coverage and capacity planning, network and applications optimization and new technology trials.

## Technical Consulting

*Offering individualized guidance in making technology decisions*

ESG assists operators and vendors in understanding the rapidly changing wireless technologies and standards to enable sensible, reliable technology decisions. The combination of program management expertise and engineering experience produces a cohesive team dedicated to solving the unique challenges these wireless providers face while planning for a successful future.

### Evaluate and develop such areas as:

- Acceptance test plans
- Key performance indicators
- RFPs and technical proposals
- System settings and parameters
- Technology guidelines

## Customized Workshops & Technical Training

*Providing in-depth insight and hands-on, comprehensive knowledge in released wireless standards*

ESG training offers a collaborative learning environment to share the latest technology information and best practices for a complete solution and practical implementation. Course material is created and taught by engineers who share years of standards-based and applied experience in network planning, deployment and optimization across the globe.

### Offerings:

- Classroom training
- Customized, hands-on workshops
- E-learning, white papers and other documentation

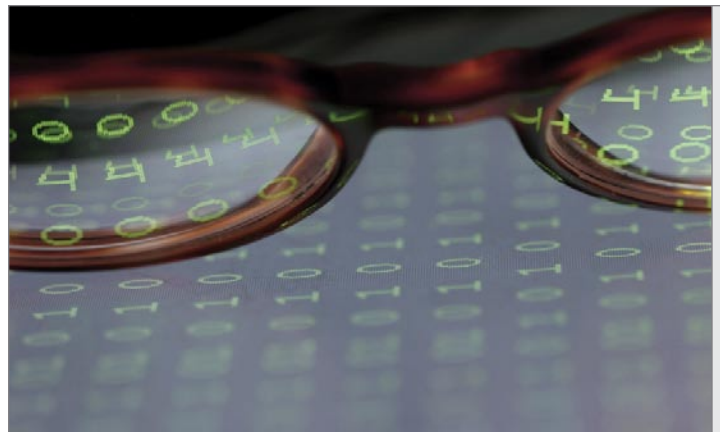
## Network Design & Deployment

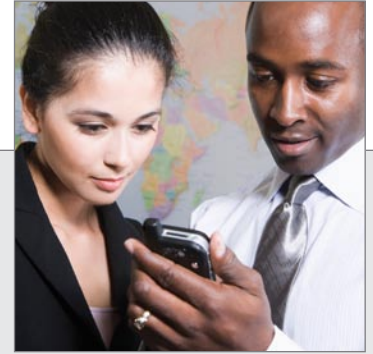
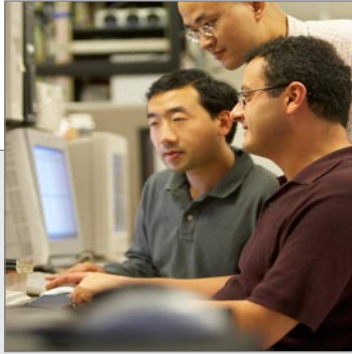
*Delivering a time-to-market advantage and high-quality networks*

Helping to design and deploy hundreds of wireless networks across the globe that service the vast majority of the third-generation wireless subscriber base, ESG seasoned engineers are an industry authority on network design and deployment.

### Offerings:

- Coverage and capacity planning and dimensioning, including in-building
- System parameter setting and key performance indicator validation
- Technology trial support
- Network performance assessments
- System parameter and RF design optimization
- Spectrum management plans and recommendations





## Network Optimization & Technology Evolution

*Delivering optimized network performance and expertise in next-generation wireless technologies that will compel further evolution of wireless communications*

ESG engineers focus on detecting the root causes of system issues, enabling timely, thorough solutions that deliver peak network performance.

ESG is engaged with next-generation wireless technologies from their inception through their commercialization, enabling unique insight into future directions of wireless communications.

### Offerings:

- End-to-end network and application optimization
- Integration of automatic optimization tools
- End-to-end troubleshooting
- Timely resolution of system issues
- Insight and growth path planning for future technologies

## Network Applications Services

*Minimizing implementation challenges and optimizing performance obstacles*

Considering the operator's distinct network, ESG provides appropriate guidance, helps eliminate technical hurdles, and addresses implementation and testing issues to ensure peak applications performance over a variety of networks and technologies.

### Offerings:

- Location-based services – support deployment and optimization of personalized services such as asset tracking and personal networking based on the user's location
- Media/Video – improve end-user experience with value-added media services such as video streaming and video telephony
- Roaming – enable rapid implementation of international roaming services

**Unmatched wireless technical expertise and industry-wide experience enable ESG to deliver meaningful results: the latest in technology innovation, advantages in time to market and optimized network performance.**

ESG is committed to helping operators worldwide leverage existing technology investments and attain the highest-quality, most profitable network.

#### ESG Presence Worldwide

- USA
- China
- Hong Kong
- India
- Germany
- Middle East

#### Industry Involvement

*ESG actively participates in industry initiatives and technology standards groups that enable faster commercialization of new technologies, devices and applications.*

**3GPP** – 3GPP produces, maintains and develops globally applicable technical specifications and reports based on GSM technologies (GPRS, EDGE, WCDMA, UMTS, HSPA and future evolutions). [www.3gpp.org](http://www.3gpp.org)

**3GPP2** – 3GPP2 produces, maintains and develops globally applicable technical specifications and reports based on CDMA technologies (CDMA2000 1X, CDMA2000 1xEV-DO, and future evolutions). [www.3gpp2.org](http://www.3gpp2.org)

**CDMA Development Group (CDG)** – The CDG helps to ensure interoperability and roaming among systems and operators, while expediting the availability of 3G CDMA technology to consumers. [www.cdg.org](http://www.cdg.org)

**Global Handset Requirements for CDMA (GHRC)** – A CDG initiative, GHRC develops device and application requirements documents for use by CDMA operators and suppliers to enhance time to market and availability of devices. [www.cdg.org/cdg/teams/ghrc.asp](http://www.cdg.org/cdg/teams/ghrc.asp)

**CDMA Certification Forum (CCF)** – The CCF streamlines the way 3G devices are tested and prepared for commercialization through a standardized global certification process. QUALCOMM is a founding member of the CCF. [www.globalccf.org](http://www.globalccf.org)

**International Roaming Team (IRT)** – A CDG technical team, the IRT assists CDMA2000 operators in all aspects of international roaming. [www.cdg.org/irt](http://www.cdg.org/irt)

Accelerate your success by contacting ESG today:

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