



## Global Roaming eXchange (GRX).

Services International Carrier Sales & Solutions (ICSS)

Life is for sharing.



# Global Roaming eXchange (GRX).

## Worldwide mobile data services at your customers' fingertips.

With the advent of GPRS and 3G, end users expect their mobile operators to provide them with mobile data services wherever they are. In an era where mobile phones have become an essential personal and business item and the use of mobile data services is becoming increasingly widespread, your GPRS/3G mobile customers expect you to offer them a comprehensive package of IP-based data communication services – whether mobile banking and payment services, e-mail, Internet and intranet access, or news feeds – both in their home country and abroad.

To provide your customers with global access to data mobile services from their terminals, you need to interconnect and roam with other GPRS mobile operators. GRX answers your requirements.

## Meet your customers' expectations through international data roaming services.

Provide your customers with global mobile data services thanks to ICSS's GRX solution. Using Deutsche Telekom's MPLS backbone network, GRX is an IP-based solution for national and international GPRS and UMTS mobile use, facilitating data roaming services for domestic and global mobile operators. The connection between mobile roaming operators is totally private, thus ensuring end-to-end management and optimum security.

## Discover ICSS's one-stop-shopping solution:

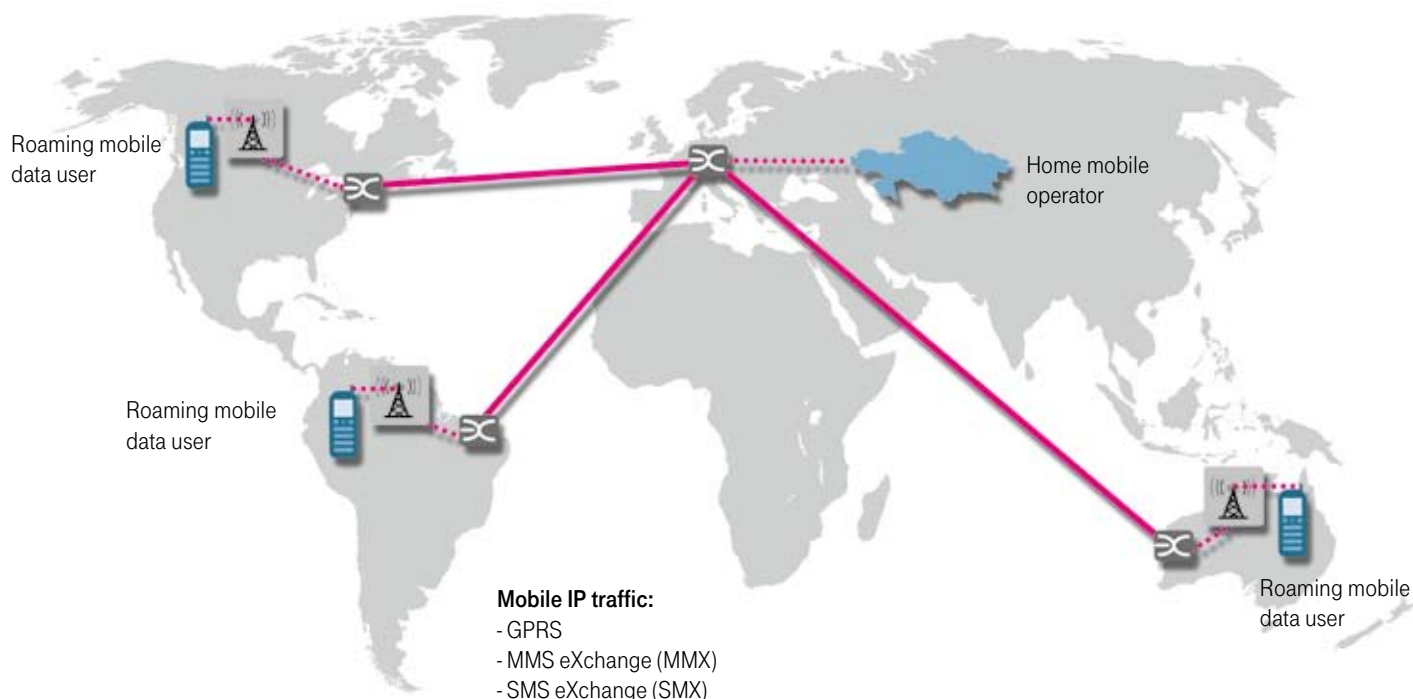
ICSS's GRX service is a one-stop-shopping solution opening your business to new opportunities.

- A single connection brings you new revenue streams: the solution enables you to reach a vast array of already connected data roaming and peering partners, therefore increasing your coverage and, by the same token, your revenues. Through a single connection, ICSS provides you with a complete GPRS roaming and coordination solution.
- A single interface eases your business: through a single point of contact, ICSS helps you develop your mobile data roaming business. Its experts handle the network monitoring and rerouting of your international GPRS/3G solution while you focus on what matters most to you, your revenue-generating mobile data business.
- A single contract and an attractive pricing scheme: only one contract is necessary to access to global GPRS roaming. ICSS has developed a straightforward and competitive pricing scheme consisting of:
  - A one-off installation charge based on the geographic location and technical requirements
  - A monthly flat rate for all traffic

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## GRX service overview

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## Why should you go for ICSS's GRX solution?

### Security: a cornerstone of GRX.

ICSS's GRX solution has been designed to provide you with optimum roaming and peering security. GRX has its own platform and is totally separated from the public Internet, thus doing away with the need for data encryption. Thanks to the inherent autonomous system (AS) of the solution, the GRX service is also free from third-party attacks on data from either the public Internet or other VPNs. Furthermore, IP connectivity is only permitted between mobile operators whose GPRS roaming agreements have been double-checked.

### Quality of service.

ICSS guarantees optimum quality of service based on the following criteria:

- Full compliance with the requirements of the GSM IR 34 standards
- Protection against network failure through automatic path rerouting
- Periodical updating of GRX DNS
- Accurate data and reporting
- Triggers and alarms notifications of dramatic traffic imbalances
- Different service level agreements providing the highest quality of service (QoS)
- Performance monitoring services using PE routers as measurement points and showing bandwidth parameters, delay, jitter and packet loss
- Trouble ticket reporting and tracking

### Experience and footprint of a reliable partner.

Trust the solid IP expertise of the Deutsche Telekom and its international wholesale arm, ICSS: Deutsche Telekom is an international leading provider of IP services and has a long-standing experience in installing IP VPNs worldwide. Thanks to its numerous mobile affiliates in Europe, its significant presence in the United States, its close cooperation with mobile operators around the globe, and its well-established peering connections with every other GRX in the world, Deutsche Telekom will guarantee that your GPRS/3G mobile data solution is reliable and internationally widespread. Furthermore, Deutsche Telekom strives to continuously optimize and expand its international network, thus helping you to expand your international mobile data business.

### Round-the-clock support.

A dedicated team of Deutsche Telekom staff provides 24/7 support in the following areas:

- Proactive fault management
- Help desk (English and German)
- CPE-to-CPE network management

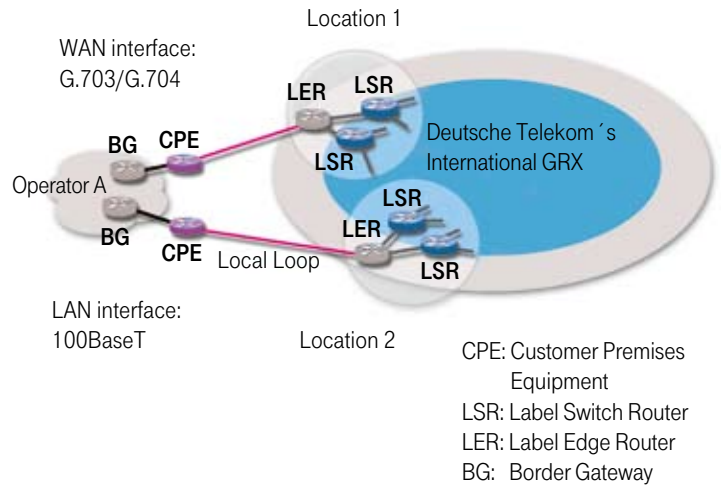
### Scalability and bundling: broaden your horizons with ICSS.

One platform for a wealth of value-added services: the GRX platform of ICSS can bridge you to other services like SMS eXchange (SMX) and MMS eXchange (MMX) and thus help you to develop your business further.

### How to access the service?

You can access ICSS's GRX service in two ways: either via Fixed or IPsec Access.

## Example of GRX access



### GRX Fixed Access.

- Deutsche Telekom can provide you with a physical access to its GRX node.
- Benefits of this access include:
  - Fully enabled for MPLS with CoS
  - Speed up to 2.5 Gbps
  - Low latency and packet loss
  - Virtual load sharing possible with two access links

### GRX IPsec Access.

If you do not have an upstream provider for Internet access, ICSS will be happy to provide you with this service. As a mobile operator, you should ensure that an IPsec gateway is set up and connected to the Internet and the Border Gateway. Benefits of the IPsec access include:

- Cost effectiveness and reliability
- Scalability
- Possibility to be used as a backup solution
- Fast setup and implementation
- Access to most of Deutsche Telekom's gateway services (e. g. MMX)

### About Deutsche Telekom ICSS.

ICSS, the international wholesale arm of the Deutsche Telekom Group, is one of the biggest voice carriers worldwide and an increasingly important IP player across a growing European market with excellent interregional connections between Europe, the Americas and Asia. With continuously changing markets, ICSS has redesigned its portfolio from traditional voice and transport services to advanced innovative wholesale services and customized IP solutions. The business activities and efforts of ICSS focus on serving the following market segments: broadband operators (ISPs, WISPs, and VoIP SPs), mobile operators and MVNOs, content, application and media providers, corporate service providers and VNOs, fixed voice carriers, and carriers' carriers and their customers through a worldwide sales network.

For further information, see

[www.deutschetelekom.com/icss](http://www.deutschetelekom.com/icss)

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