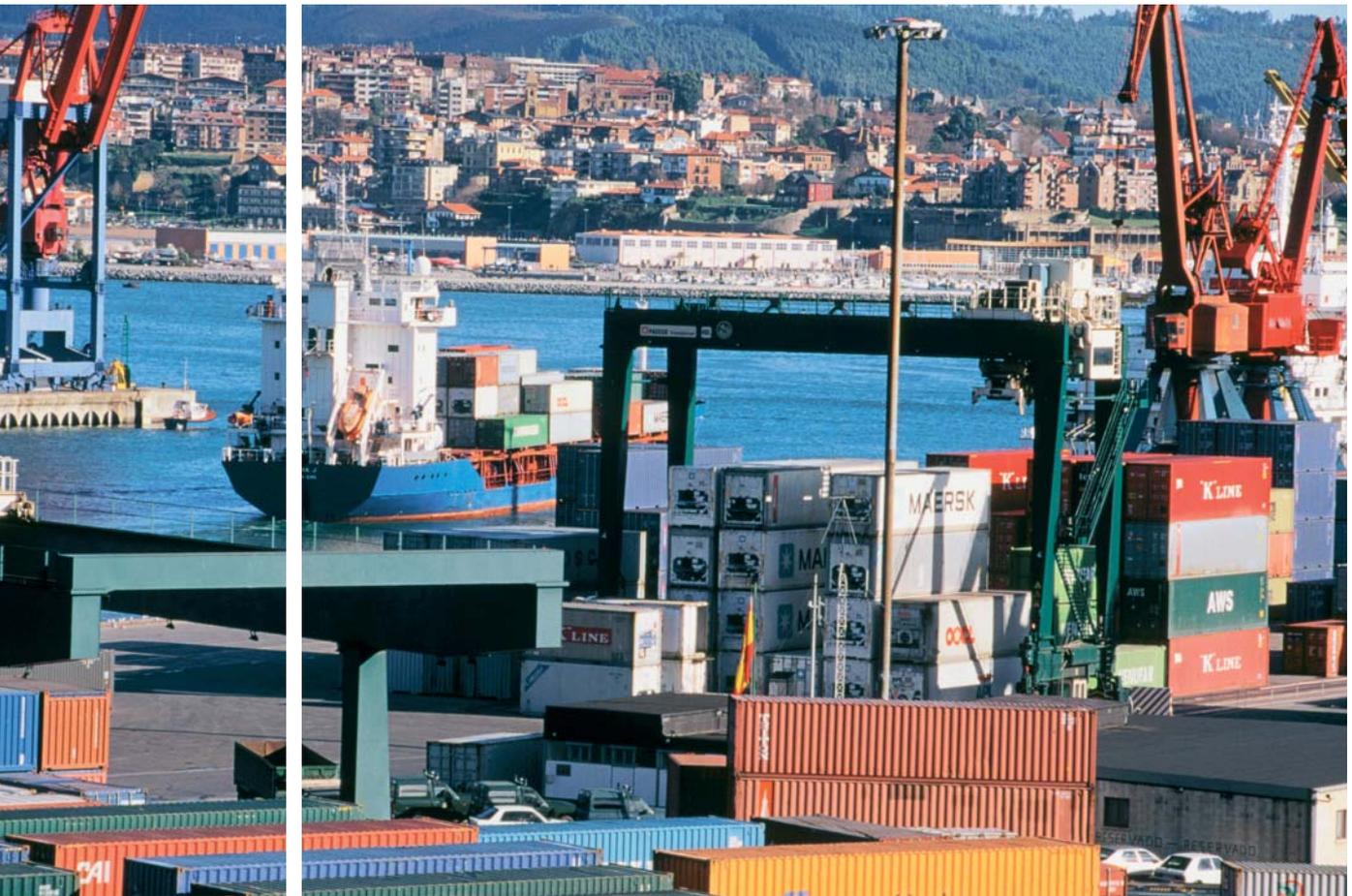# CommerceGuard™ Secure and visible global trade

Advanced security solution

Today's global economy depends heavily on containerized goods transport. The total container traffic volume of the top container ports reached 297 million Twenty-foot Equivalent Unit (TEU) in 2005. With inexact container location data, long delivery times, variable inventory levels and risks of container breaches, managing such a volume of shipments is a real challenge for port operators and logistics companies around the world. Add to this the modern security threats, such as terrorist attacks, theft or smuggling, and the use of a state-of-the-art security solution becomes essential.

Siemens brings decades of experience in security solutions to help ports, logistics companies and customs organizations meet today's challenges: The CommerceGuard™ solution was specifically designed to report security breaches and to track and trace containers at checkpoints along the supply chain, thus improving its efficiency and security.

Improved supply chain management

Increased security and visibility for your container shipments.

■ **Improved security for every shipment**
CommerceGuard™ is a global, cost-efficient electronic system consisting of devices located inside containers combined to a global information network. This networked system tracks the passage of freight containers at critical checkpoints along the supply chain, and logs key data to build container status reports. CommerceGuard protects containers and deters tampering, theft, smuggling and possible terror incidents.

■ **Traceable container movements**
CommerceGuard includes an Internet-accessible Data Center. Authorized importers, shippers and government officials can access the Data Center on any personal computer via a secure Internet portal – from anywhere in the world. They then have access to secure records and status reports and can use tracking information to secure and streamline the supply chain.

■ **Designed to meet international standards**
The 166 member states of the World Customs Organization (WCO) approved a new Framework of Standards to Secure and Facilitate Global Trade. CommerceGuard has been designed to meet, support or exceed all expected WCO and other international standards related to the development and implementation of trusted shipper regimes under the "government-to-industry" pillar of the Framework. In exchange for efforts to increase security and visibility, businesses should be offered benefits such as expedited processing and other measures.

Siemens is a member of the International Container Security Organization (ICSO).

Highlights

■ Security for every shipment

■ Secure, safe and efficient tracking and tracing of containers

■ Improved visibility via Internet with access to secure records and status reports

■ Designed to meet international standards

Smart and economical container tracking

Good reasons to choose CommerceGuard™.

■ **Reliable tracking**

The CommerceGuard™ system is based on an economical, electronic Container Security Device (CSD) that secures freight containers and provides visibility of container movements throughout the supply chain. The CSD can be installed within seconds inside the container, providing immediate protection against tampering. The device detects intrusion incidents and reports container status through encrypted communications at critical checkpoints along the supply chain.

■ **Comprehensive system**

The CommerceGuard system includes Container Security Devices (CSDs), Fixed Readers for dynamic environments and Handheld or PC Readers for static environments. The readers communicate CSD status in real time to a server for back-end reporting. A wireless communication unit transmits event data to backbone servers when no LAN connection is present.

■ **Cost-effective information network**

The economical CSD stores access event information. Integrated sensors on the CSD detect if a container's doors are opened. As the CSD and its assigned container pass through the supply chain, the CSD's low-power radio securely transmits to the compatible global reader network. Readers are easily installed at key transaction points such as factory gates, ports, terminal yards, depots and railheads. Secured data records are transferred to the CommerceGuard Data Center; these include the container's location, time, date, user and security status. The data are available to shippers, customs officials, or other authorized parties via a secure website.

Key supply chain locations

- Verify status at checkpoints, embarkation and debarkation
- Report date, time, location

Factory loading

- Snap-in the CSD
- Load the container
- Arm the CSD
- Upload user, location, status

Unloading

- Review shipment records
- Disarm the CSD
- Remove CSD for reuse

Global information network

- Access secure records and status reports via Internet (global authorized access)

Global container security and visibility with CommerceGuard™.

■ **A more controlled and efficient supply chain**

Authorized supply chain participants track a container's progress as it journeys from the point of loading to that of unloading. Logistics personnel obtain their shipment information from the CommerceGuard Information Network to use for supply, factory and transportation planning. Supply chain participants can also share this information with government officials, since CommerceGuard's secure servers can be integrated with government information systems.

Outstanding technology for your security

New benchmark in container security.

Container Security Device (CSD)

Fixed Reader

Handheld Reader

Global access to secure Data Center

Highlights

- Accurate, reliable and re-useable CSDs
- Easily deployable Fixed Readers
- Convenient and easy-to-use Handheld Readers
- Ideally suited for high-volume moving traffic

■ Container Security Devices (CSD)
The heart of the CommerceGuard™ system, the CSD, detects intrusion and tamper attempts and stores data from all container transactions. Accurate, reliable and affordable, the CSD secures cargo containers and provides supply chain visibility and security for cargo owners. A CSD is installed in seconds, snaps into legacy containers, reports status at critical points in the supply chain and withstands harsh maritime environment to name just a few of its outstanding features.

■ Fixed Readers
The CommerceGuard Fixed Readers are ideally suited for high-volume moving traffic. They read data from the containers when they pass through critical checkpoints along the supply chain and transmit the information to the CommerceGuard Data Center. Cargo owners can use this data to track the progress and status of their shipments while being assured that any tamper and intrusion attempt has been communicated to the appropriate authorities. The Fixed Readers are installed rapidly, read moving traffic and provide secure data communication.

■ Handheld Readers
CommerceGuard Handheld Readers are ideally suited for outdoor use and offer a convenient option in areas where mobility and flexibility are needed. These smart portable devices let authorized users arm, disarm and check the status of the Container Security Devices (CSDs) on standard containers. They are quickly programmed with a plug-in flash card and arming codes can be downloaded as and when needed with GSM/GPRS. The access to the more sensitive data can be protected through user authorization.

■ Data Center
At any checkpoint along the supply chain Fixed Readers verify and authenticate the CSD status using a highly secure method called Challenge/Response. The CommerceGuard Data Center generates a data message to backend systems (EvSS). The secured data records include the container's location, time, date, user and security status and are available to shippers, customs officials, or other authorized parties via a secure website.

Technical overview

A summary of outstanding features.

	CommerceGuard™
CSD reading range	30 m
Radio frequency	2.4 GHz, license-free ISM band
Operating temperature CSD Fixed Reader	– 30 to 60 °C
Operating temperature Handheld Reader	– 20 to 55 °C
Fixed Reader / Com Unit reliability in poor GPRS coverage	stores messages for 24 hours
Passing reading speed	up to 36 km / h
Handheld Reader	rugged PDA
Protocol	secure communication with encrypted data
Battery lifetime	8 years
Installing CSD inside container	within seconds

Welcome to the world of innovative thinking

■ Innovation

Siemens invests a great deal in both manpower and research and development. This results in a steady stream of new insights, technologies and inventions that enable us to improve the reliability of our products and systems, ensuring the securest products and making our systems even more simple and convenient to operate.

Advances in digital technologies are creating a whole new world of possibilities. Siemens is at the leading edge of progress in this field and continues to redefine both current and future technologies.

■ Reliability

With a history of over a hundred years, if you need an established, reliable partner you are in the very best of hands with Siemens. System expansions and upgrades can be continuously made over a period of years, which ensures your investment for the future.

■ Security

Siemens products and systems provide you with security. Today, tomorrow and for decades to come. That's why countless customers around the world place their trust in Siemens.

The information in this document contains general descriptions of technical options available,
which do not always have to be present in individual cases. The required features should therefore
be specified in each individual case at the time of closing the contract.

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