



PERFORMANCE+CONTROL

**OFTP2 – implementeringsaspekter.**  
**What is ENX?**  
ENX. Your Communications Network.

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# Agenda



Why ENX?  
What is ENX?  
Who is using it?  
What's next?

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**Why ENX?**

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# Why was ENX created?



- We should not forget about the risks in the real economy
  - If data get lost they might come back as *real* products and *real* advantages of our competitors
- ENX was created in order to
  - Provide users with *one single solution*
  - Control, reduce, avoid risks
  - Create a community of trust

# Agenda



Why ENX?

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# What is ENX?

- ENX is a private secure international multiprovider IP network
- It replaces Internet's Best Effort model with End-to-End *Quality of Service* and *Guaranteed Security*
- ENX is used as a *community of trust*

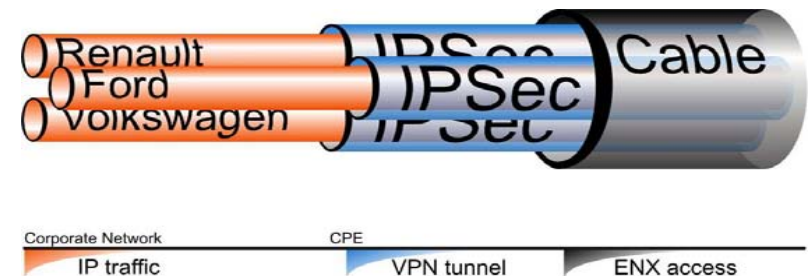
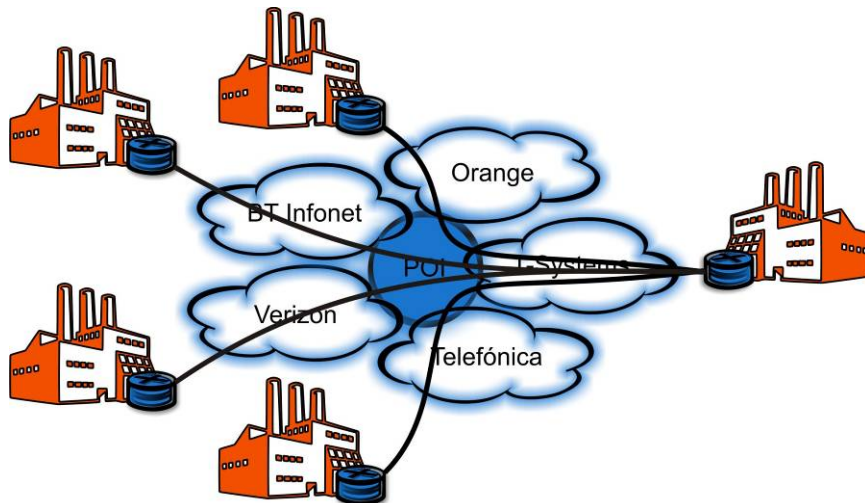
# What are the basics of any ENX access?

- ENX users can always rely on the guaranteed core elements
  - Registration and required community membership
  - Interoperable communication options with every other ENX user
  - Use of industry-standard cryptography end-to-end communications security
  - Provider-managed service for any mutually-requested communication link
- ENX products are offered for organisations of any size
  - Entry-level service with total cost of < 100€ - 300€ per month\*
  - Mid-range fixed-link services with various bandwidth and QoS options
  - Redundant, stateful failover, fiber-based HA solution
  - Globally available Internet- and 3G/4G Wireless-based services scheduled for launch in 2010

\* Subject to regional availability

# Why trust ENX?

- Security and Integrity: Build-in as standard feature
  - by symmetric IPSec encryption of the entire network traffic
  - by certain hashing methods
- Authentication: All users (legal entities) are authenticated
  - PKI-Integration (X.509 certificates / Trustcenter)





# Why trust ENX?

- Certification & Operation Requirements (ENX CORE)
  - IT Security, Governance & Control are important for the certification
- Certified service providers and processes
  - according to the ENX CORE
- Registered and authorised users only (ENX REGISTRY)
  - Terms and Conditions apply, authorisation by partner is prerequisite
- Trustcenter Deutsche Telekom TeleSec (ENX CA)
  - acknowledged as trustworthy, certified according to German “DigSiG”
- ENX IPsec Laboratory (ENX LAB)
  - Ensuring Interoperability, provider mtg accredited by the “BSI”
- Private Points of Interconnection (ENX POI)
  - Frankfurt & Paris

# Who trusts in ENX?

- Automotive Industry
- Third Parties co-operating with the Automotive Industry, e.g.
  - German Federal Bureau of Motor Vehicles and Drivers (KBA)
  - Criminal Police Offices
  - Bavarian State Office of Criminal Investigation (LKA Bayern)
  - French Gendarmerie Nationale
  - National Customs Administration
  - Insurance Companies & Associations
- Defence Sector
  - DGA (Délégation Général pour l'Armement)
  - OCCAR (European Defence Purchasing Agency)
  - EADS, Airbus, Dassault, Thales, ...
- An important organisation in the banking sector



# Who is currently offering ENX services?

- Carriers certified by ENX Association (“Certified Service Providers”)
  - BT Global Services
  - Orange Business
  - Telefonica
  - T-Systems
  - Verizon Business
- Carriers in certification
  - Türk Telekom
- Further carriers for ENX over Internet in certification process / pilot



# Who is the ENX Association?

- A non-profit organisation responsible for the ENX activities
  - founded in 2000 in Boulogne-Billancourt
  - operating from Frankfurt and Paris
  - membership by application & invitation only



BMW Group



BOSCH

Continental

DAIMLER



KARMANN

PSA PEUGEOT CITROËN



smart



VDA | Verband der Automobilindustrie

# Who is ENX Association?

- The ENX Board
  - representatives of all 16 members of the association
  - one company – one vote
  - meetings four times a year
  - in Frankfurt and Paris
- Presidium and Management
  - Prof. Dr.-Ing. Armin Vornberger (President)
  - Michel Le Méro, Renault (Vice-President)
  - Christian Chamailard, Galia (Treasurer)
  - Lennart Oly



# What does ENX Association do?

- Daily Operation
  1. to provide trustcenter services (certificate authority, key management)
  2. to operate Points of Interconnection for the providers (*ENX POI*)
  3. to certify service providers and to register users
  4. to provide escalation management & problem management
  5. to maintain IPSec interoperability lab
- Legal, Organisation & Conception
  1. Certification & Operation Requirements (*ENX CORE*)
  2. ENX framework of contracts (*ENX FRAME*)
  3. Central user registry (*ENX REGISTRY*)
  4. Intellectual Property Rights
  5. Continuous development (*FUTURE ENX*)

# Agenda



Why ENX?

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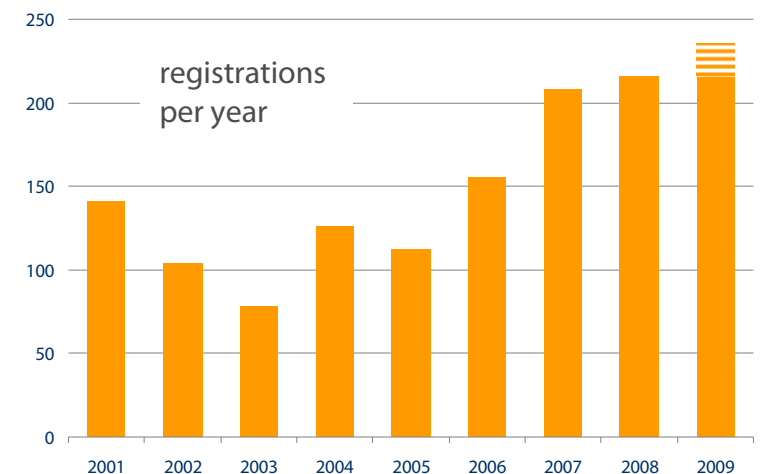
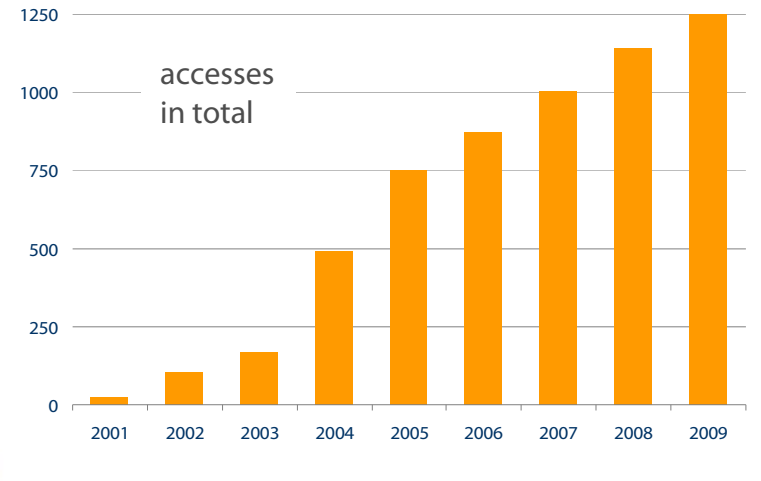
## New partners in 2009

- Having the choice among various solutions  
more partners than ever have joined ENX in 2009:
- ca. 200 suppliers and other partners
- OEMs
  - **GME / Adam Opel GmbH (September)**
  - **Jaguar Cars, UK (November)**
  - **Land Rover, UK (November)**
  - **Avtovaz, Russia (December)**
- Authorities
  - German Customs
  - French Customs



# Continuously growing use

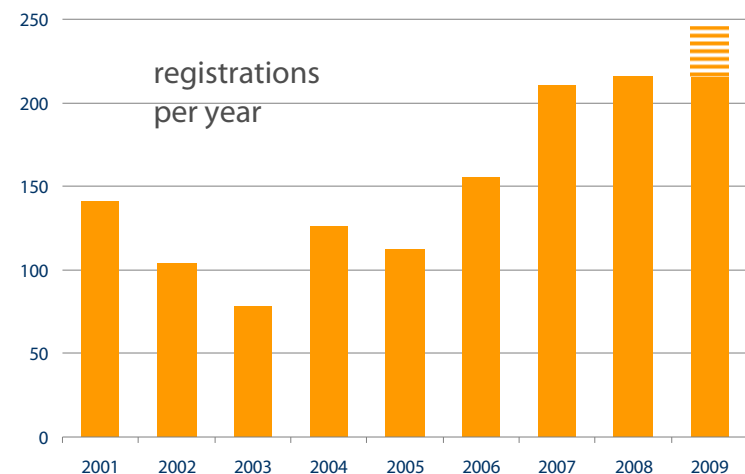
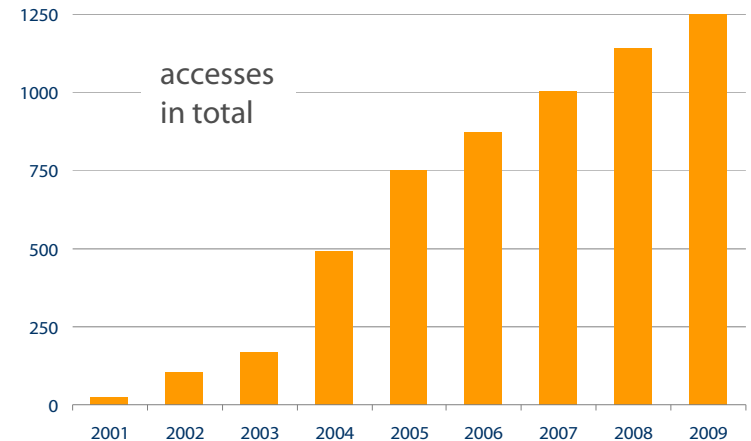
- Utilisation
  - 1.250 accesses
  - 1.000 companies
  - 100 countries covered
  - up to 500 connections / OEM
- Growth of registrations
  - growing for 120 months
  - speeding up since 2005
  - biggest growth in 2009
- Competitive environment
  - Public Internet
  - Corporate Extranets
  - Free decision of partners



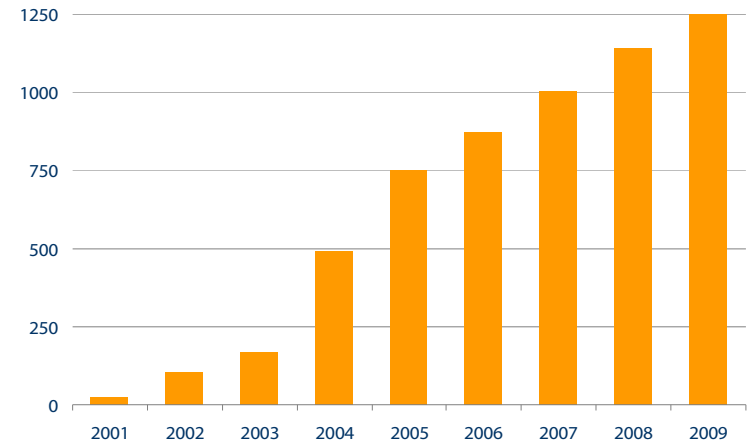
# Overview on utilisation



Austria, Belgium, Brazil, Canada, Croatia, Czech Republic, Denmark, Finland, **France**, **Germany**, Greece, India, Italy, Japan, Luxemburg, Monaco, Morocco, Netherlands, Poland, Portugal, Romania, Russia, Slovenia, South Korea, South Africa, Spain, Sweden, Switzerland, Tunisia, Turkey, UK, USA



# Overview on utilisation



Austria, Belgium, **Brazil**, **Canada**, Croatia, Czech Republic, Denmark, Finland, **France**, **Germany**, Greece, **India**, Italy, **Japan**, Luxemburg, Monaco, **Morocco**, Netherlands, Poland, Portugal, Romania, **Russia**, Slovenia, **South Korea**, **South Africa**, Spain, Sweden, Switzerland, **Tunisia**, **Turkey**, UK, **USA**

„Both the Fiat 500 and the new Ford Ka are based on the same platform. Ford’s IT department confirms that the cooperative development was able to significantly profit from ENX being a mutually accepted and already implemented standard.“

# What is ENX used for?

- ENX *supports* all types of applications, e.g.
  - File Transfer (e. g. OFTP is one of > 100 applications and protocols uses by partners)
  - Message, Email Exchange, Web Services
  - Web-based portals
  - Real-time communication protocols
  - ... and many more
  
- ENX *covers* a wide range of use cases today, e.g.
  - R&D data exchange and real time collaboration
  - Public Relations, Marketing, Launch Planning
  - Logistics, Supply Chain Management, Production Control
  - Channel, Sales, After Sales, Support, Services
  - Remote Access for IT and Production systems
  - Finance, Insurance, HR
  - Business-to-Administration
  - Business Services

# Sample Use Cases

## Launch Marketing

An independent photographer uses ENX to submit/upload photography of automotive prototypes to the OEM's marketing department and PR agency

Area: PR, Marketing, Launch Planning

Applications: EMail, File Transfer

Requirements: Data Privacy, Simple Setup/Admin

Advantages: Multiple Communication Partners, Simple setup on end system, guaranteed security, point-to-point communication

## Shared Engineering

A manufacturer and one of its tier-1 suppliers work on a major component in real-time shared collaboration with a number of engineers involved in both organizations R&D departments

Area: R&D

Applications: IM, Email, File Transfer, Shared CAD, Video Conf

Requirements: Data Privacy, Multiple Apps, Participants, HA

Corporate Security Guidelines, Low End to End Latency

Advantages: Guaranteed QoS, Independent CA, Network-level, transparent tunnel connection

## Procurement by Tender

France' ministry of defense opens a number of by-invitation tender activities with their registered suppliers through a private web portal provided through "Espace Partenaire"

Area: Supply Chain Management

Applications: Web Portal

Requirements: Data Privacy, Controlled Community

Advantages: Centralized Registration and Confirmation, End-to-End Security, High Security Standards, Strict Project Requirements mandating private network, ideal solution

## Remote Maintenance

A company operates IT and production systems requiring vendor access for maintenance and monitoring purposes

Area: IT

Applications: Web-based Admin Tools, Private Apps

Requirements: Data Privacy, Secure Remote Access,

Customers and Vendors with multiple access requirements, Corporate Security Guidelines

Advantages: Multiple Communication Partners, One Time Audit, IP Transparency

# Co-operation with other associations

- ENX is co-operating with its members organisations **ANFAC**, **GALIA**, **SMMT**, **VDA** as well as with other national associations such as **ACAROM** (Romania) and **OSD** (Turkey)
- In May 2008, ENX Association joined the **ProSTEP iViP Association** as regular member
  - This can be seen as the first step of a closer co-operation in the field of **European automotive IT standardisation**
    - ProSTEP concentrating on IT-based engineering
    - ENX concentrating on network, security and trust
  - Among others, the membership enables ENX to actively contribute to the **Enterprise Rights Management Project** "Secure Product Creation Process (SP<sup>2</sup>)"

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# Chances & Challenges

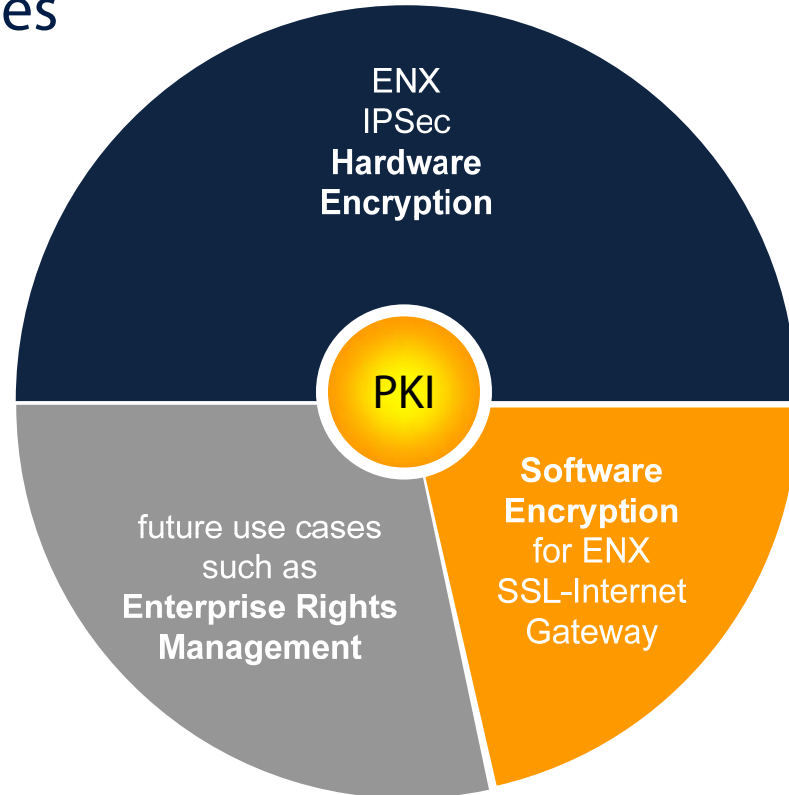
## Global Availability of an Internet based ENX entry level

ENX Association co-operates with its certified service providers as well as with several other carriers in order to extend the geographical coverage of seamless ENX entry level solutions



# Future of ENX Managed Security

- The ENX key management is modular and the processes established around it are modular
- Used exclusively for ENX today, the trust and the key infrastructure are independent from the ENX network and can be used for various additional purposes



# ENX Managed Security

today: „ENX Access“

ENX Managed Security

Central User Registration & Authorisation

Encryption & Authentication Mechanisms

Trustcenter & Certificate Management (PKI)

Interconnection & Interoperability (IPSec)

Quality by Service Level Agreements (SLA)

Scalable accesses into the MPLS backbones

Private IP infrastructure of Certified Providers

# ENX Managed Security

tomorrow: "ENX Managed Security"

ENX Managed Security

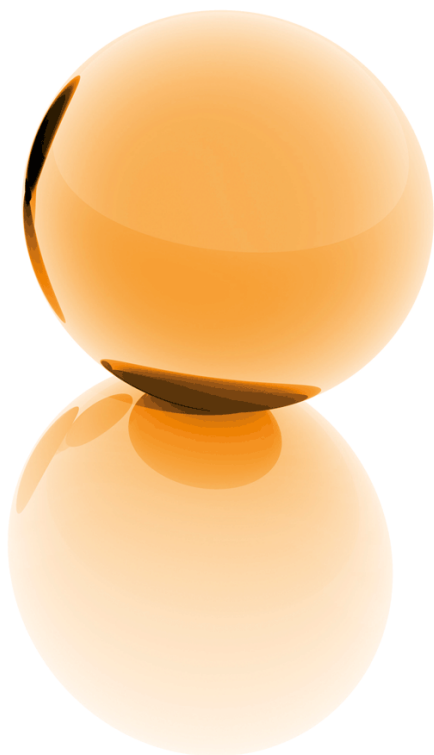
Central User Registration & Authorisation

Encryption & Authentication Mechanisms

Trustcenter & Certificate Management (PKI)

Interconnection & Interoperability (IPSec)

Pure Internet access *or*  
cross-company services such as  
conferencing, collaborative engineering  
Enterprise Rights Management, ...



Thank you very  
much for your  
attention.



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### **European Network Exchange Association**

an Association according to the French Law of 1901,  
registered under No. 12013317 at Boulogne-Billancourt, France.

### **The Members of the Association**

ANFAC, AUDI, BMW, BOSCH, CONTINENTAL, DAIMLER, DGA, FORD, GALIA,  
KARMANN, PSA, RENAULT, SMMT, VDA and VOLKSWAGEN

### **Presidium**

Prof. Dr.-Ing. Armin Vornberger (President)  
Michel Le Méro  
Christian Chamailard

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