ENX connection guide to RENAULT SA and PSA PEUGEOT CITROËN

Connection roll out to
RENAULT SA and/or PSA PEUGEOT CITROËN
through ENX

English version of October 31th, 2014

Table of contents

1 Introduction

ENX is a private network for the automotive industry.
ENX is a non-proprietary solution, which allows any company, of any size, anywhere in Europe, to access to the automotive exchanging community with guaranteed reliability, security and confidentiality.
ENX network characteristics are also availability, performance and upgrade ability.
Furthermore, CSP propose options like guarantee of recovery time (in less than 4 hours), ENX line load statistics, etc…

Access to automotive applications (for some requiring a very strong interactivity) and data exchanges are made from point to point after establishment of an ENX tunnel between two companies (or between two sites of one company!), since they have both access to ENX network.
Only one ENX line allows to access to all connected partners.

The purpose of this document is to:

- give you a general framework to ease your connection to ENX network,
- give you a step-by-step guide to connect to RENAULT and/or PSA PEUGEOT CITROËN through ENX.

2 Your project of connection to ENX network

In order to achieve your connection to ENX, we highly recommend you to organize yourself in a context of a real project:

- multi-competences: this connection calls for several competences in your company (juridical, engineering, IT and telecom...),

- multi-tasks: it is a real project to drive with parallel tasks.

This project, driven by your ENX project manager, will bring into collaboration:

- people from different sites of your company,
- people from manufacturers/Partners with which you will connect,
- the CSP you'll have chosen,
- an IT services sub-contractor (if you wish one to assist you).

During the preparing phase, you will have to:
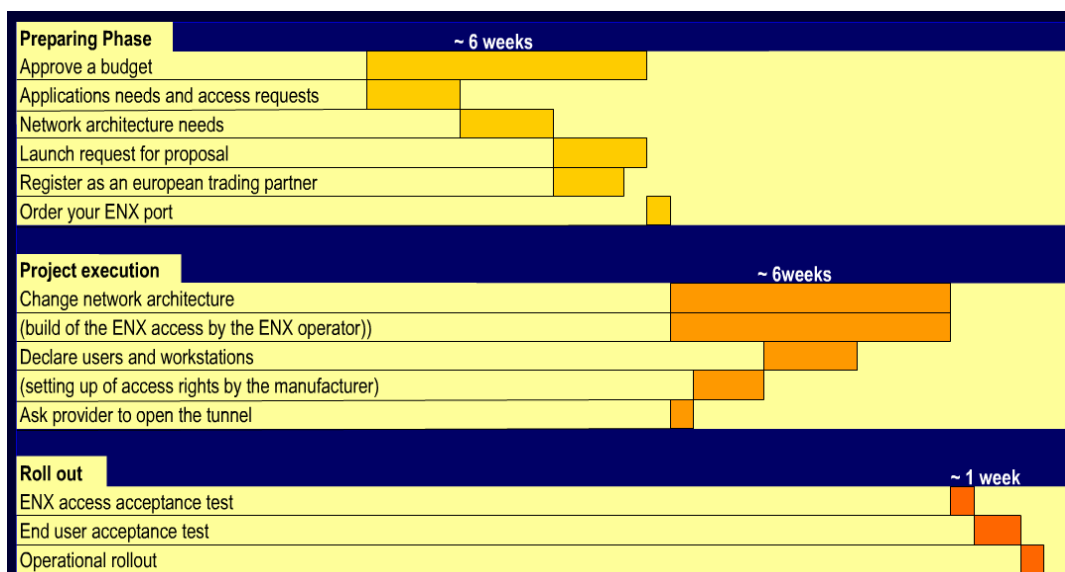
- approve a budget and assign resources:
  Expenses consist in:
  - ENX access,
  - IS architecture upgrade (firewall),
  - network engineering.

  The necessary resources are a network specialist and an application specialist. One person can do both tasks. Project duration is at least 3 months.

- evaluate your communication needs:
  Your ENX connection is initiated because you have a business relationship with a manufacturer. However, you certainly have other projects planned or running with other manufacturers or suppliers already connected to the ENX network.
  Do an overall study of all your communication needs with these different partners in order to correctly size your ENX access.

Example of planning:

Preparing Phase	~ 6 weeks
Approve a budget	
Applications needs and access requests	
Network architecture needs	
Launch request for proposal	
Register as an european trading partner	
Order your ENX port	
Project execution	~ 6weeks
Change network architecture	
(build of the ENX access by the ENX operator))	
Declare users and workstations	
(setting up of access rights by the manufacturer)	
Ask provider to open the tunnel	
Roll out	~ 1 week
ENX access acceptance test	
End user acceptance test	
Operational rollout	

3 Connect to ENX

3.1 Getting registered by the ENX authority

Every company wishing to connect to the ENX network has first to register as an ENX trading partner with the Association ENX by using the registration form available on the http://www.enxo.com site under the link "Registration".

3.2 Choose your ENX architecture

Having summarized your needs, you can now size your ENX line and define your LAN Architecture.

Establish your security policy: plan for a firewall or an isolated LAN, check your Internet access ports, maybe review your IP numbering scheme.

You will find in the following points technical elements to help you make these choices.

3.2.1 Multi-sites access

When your operations are distributed on several sites that have all to connect to the ENX network, you have the choice between two types of network architecture:

- Use a single ENX connection and transit all your applications streams coming from Various sites toward this ENX line.
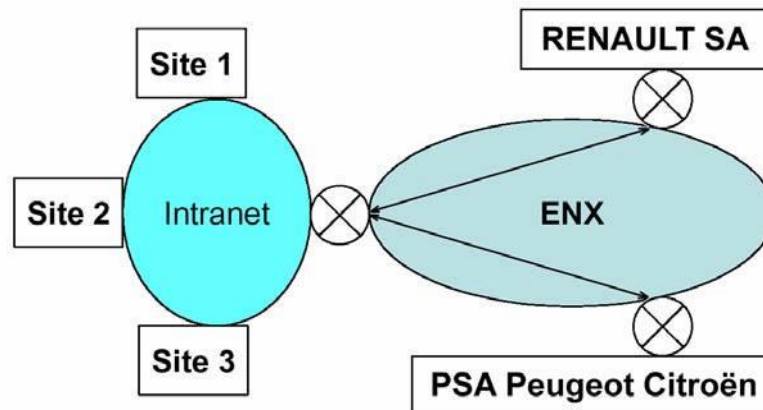
- Use an ENX connection per site: this solution allows you to use ENX as an inter-site Network ; in that case, every site has to be registered separately.
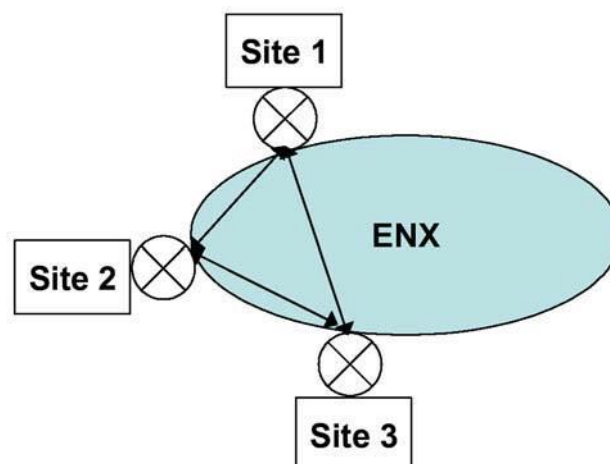
3.2.2 DNS

ENX have a specific DNS for each CSP.
ENX registration gives the right to use the name **partner.enxo.org**, like **renault.enxo.org** or **psa.enxo.org**.

As soon as you are connected to the ENX network, you can resolve names of type enxo.org by accessing the CSP DNS services. The DNS of all CSP are now interconnected (since end of January 2004). Therefore, you just have access your CSP DNS to access to RENAULT and PSA PEUGEOT CITROËN.

3.2.3 Security policy

ENX CSP guarantee the security on the communication link between two ENX Trading Partners. It is your responsibility to insure security on own intranet network and especially on the other gateways to public IP networks that may be accessing this intranet.

This security policy should prevent unauthorized connections and prevent indirect attacks: a hacker could use an authorized connection to your network to illegally connect to RENAULT or PSA PEUGEOT CITROËN network through your intranet, thus implying your liability.

RENAULT	PSA PEUGEOT CITROËN

• **If you use ENX with several partners**, then RENAULT asks you to use a firewall (see 7.1 and 7.2)
 	
• **If you use ENX exclusively with RENAULT** and don't want to install and operate your own firewall, then following security rules will be enforced by RENAULT (see 7.3):
    o Your workstations connected to the ENX are part of a LAN which is isolated from your network. The workstations are installed in a specific room with physical access control and they are not connected to any other public or private network.
    o RENAULT can audit your ENX.
	PSA PEUGEOT CITROËN recommends you but does not impose to install a firewall on your ENX connexion.

3.2.4 Other information

3.2.4.1 IP Addresses

IP addresses announced on the ENX network must be officially registered NIC addresses. Addresses can belong either to the partner or to the CSP.
For maximum security, outbound IP communication flows (IP packets going out from the partner's network to the ENX) should be translated or relayed on a DMZ LAN.

3.2.4.2 IPsec Tunnels

ENX implements the security of data transmission by creating encrypted virtual tunnels between the two network accesses of each partner.

An ENX partner must request from its CSP to set up tunnels with all the trading partners it wants to communicate with. Tunnels are set up by the CSPs only when an official request has been received from the two trading partners willing to communicate.

3.3 Choose your access type

Several CSP provide access to the ENX network by the means of permanent or switched lines or ADSL. The range of accesses bandwidth may vary from 64 kbit/s to several tens of Mbit/s.

The ENX bandwidth will be chosen depending on the number and types of applications in use and the number of users. You should implement an ENX access easy to upgrade in order to adapt to the increasing use of the ENX network.

For information, here are RENAULT and PSA PEUGEOT CITROËN recommendations:

RENAULT		PSA PEUGEOT CITROËN
For information, we recommend following classes of bandwidth:		
64 to128 kbit/s	*Occasional Access in consultation*	256 kbit/s
256 to 512 kbit/s	*Access to the digital mockup*	512 kbit/s
1 to 2 Mbit/s	*Partner in collaborative work*	1 to 2 Mbit/s

3.4 Send out RFQs

Several CSPs sell ENX service in the World.
The CSP sets up a router on your site. On this router, a special line and also
an encryption function are connected.
The CSPs provide different optional services as Firewall management, DNS management, etc…

Compare access costs but also the costs of additional services that you may need such as:
Firewall management, DNS management, etc…

Contacts with ENX certified telecommunication operators (CSP):
http://www.enxo.com/provider/

3.5 Order your ENX line

By contract, CSP are bound to deliver the ENX access 6 weeks after your order has been
Processed.
The day you order is an important milestone of the project.

3.6 Update your architecture

While waiting for the ENX access delivery, take the opportunity to upgrade your LAN and
Equipment and to implement the security policy (see 3.2).

3.7 Build of the ENX access by the CSP

This is the job of the CSP. However, the CSP needs a technical contact in your company to
Help them solve technical and logistical problems.

The acceptance test is then carried out by the CSP, which checks the network continuity
between the LAN interface of your ENX router and a test point located in the service area of
the CSP.

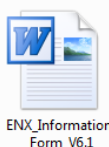**Once this acceptance test passes, you are connected to ENX!**

4   Connect to a manufacturer through ENX

4.1   *Communicate technical parameters of your ENX connection*

To achieve ENX connectivity with your site, you have to communicate to RENAULT and/or
PSA PEUGEOT CITROËN the following parameters of your ENX connection:

RENAULT	PSA PEUGEOT CITROËN

In all cases, you communicate to your RENAULT and/or PSA PEUGEOT CITROËN contact following information:
 	
• Your ENX Registration number
 	
• IP Address of your LAN (ENX router) (with subnet mask)
 	
• IPSEC Address (IPSec tunnel extremity) (to obtain from your CSP)
 	
• The coordinates of your ENX connection site
  o Business name:
  o Road or postal box:
  o Postal Code / Town / Country:
 	
• Your contact (ENX technical contact of your company):
  o First name and last name:
  o Service/Function:
  o Tel:
  o E-mail: ... @ ...
 	
• Your operator (CSP):
 	
• Pingable Address:	

Furthermore, you communicate to your RENAULT and/or PSA PEUGEOT CITROËN
contact the services to which you wish to access (Example 1: access to digital mockup
through ENX. Example 2: EDTI or EDI exchanges through ENX).

> For RENAULT : ENX information Form to be
> fullfilled and send to :
> enx.telecom@renault.com
>
> ENX_Information
> _Form_V6.1

4.2 Ordering ENX tunnel to your CSP

You are already connected to ENX network like are RENAULT and PSA PEUGEOT CITROËN. To establish ENX connectivity between your site and an automotive manufacturer:

1. You have to send to your CSP an ENX tunnel creation form (1 demand for Renault and/or 1 demand for PSA PEUGEOT CITROËN).
2. In the same time, the automotive manufacturer has to send to his CSP a tunnel creation form with your ENX access site.

Here are the RENAULT and PSA PEUGEOT CITROËN parameters to establish connectivity with your site:

RENAULT	PSA PEUGEOT CITROËN
ENX Registration number	
0010010001	0010460001
LAN IP Address (ENX router)	
193.56.119.0/24	194.206.111.0/27 + 81.80.201.32/27
IPSEC Address (IPSec tunnel extremity)	
212.234.206.33	212.234.206.5x (with x=5 or x=6: this choice of router is exclusively made by PSA PEUGEOT CITROËN)
Coordinates of your communication partner	
RENAULT 1 avenue du Golf 78084 Guyancourt Cedex FRANCE	*Business Name* *Road or Postal Box* *Postal Code / Town / Country*	PSA PEUGEOT CITROËN Route de Gisy 78943 Vélizy-Villacoublay FRANCE
Contact for the CSP for the ENX tunnel creation *(For technical contact for the supplier: see 5)*	
The Renault contact is already known by his CSP enx.telecom@renault.com	*Name* *Service/Function* *Tel* *E-mail*	The contacts are already known by the CSP of PSA PEUGEOT CITROËN contact-meeting@mpsa.com

CSP	
ORANGE BUSINESS SERVICES	ORANGE BUSINESS SERVICES

Pingable addresses	
193.56.119.254	194.206.111.28, 194.206.111.29 & 194.206.111.30 and 81.80.201.60, 81.80.201.61 & 81.80.201.62

Ports to open on your firewall	
To access to web services, you have to open on your firewall the outbound connections from your proxy to RENAULT servers through the following ports: http 80 https 443 all unprivileged ports (i.e. 1024..65535)	You have to open on your firewall the outbound connections from your proxy to PSA PEUGEOT CITROËN servers through the following ports: http 80

Depending on which services you want to access to, you will eventually have to open other ports (see the applicative form of the concerned application).

These parameters allow you to access:

- To the public portal of RENAULT (http://suppliers.renault.enxo.org) through ENX, and to login using your access keys (login + password) to access to the private area. Otherwise you have to enroll (also possible on Internet: https://suppliers.renault.com) to obtain your access keys,

- To the B2B Portal of PSA PEUGEOT CITROËN through ENX (http://b2b.psa.enxo.org) and to login using your access keys (login + password). Otherwise you have to enroll to the B2B Portal (also possible on Internet: http://b2b.psa-peugeot-citroen.com) to become a Company registered by PSA PEUGEOT CITROEN.

RENAULT	PSA PEUGEOT CITROËN
At the same time, communicate your parameters to the generic mailbox enx.telecom@renault.com in order we can authorize creation of the tunnel and open the communication in our firewalls.	At the same time, you are in relation with your Meeting contacts (contact-meeting@mpsa.com) of PSA PEUGEOT CITROËN (after your registration for the B2B Portal).

4.3 Final configuration and site acceptance

In order to establish ENX connectivity between with RENAULT and/or
PSA PEUGEOT CITROËN servers, you have to:

- parameter your routers and firewall,
- do internal route,
- implement a DNS solution,
- do the technical acceptance.

This task is carried out with the help of your operational contacts who will coordinate
necessary technical specialists within RENAULT and/or PSA PEUGEOT CITROËN.

4.4 Access to applications

Now that your interconnection with RENAULT and/or PSA PEUGEOT CITROËN is
operational, you can start on steps to access to other applications you want to use (which can
have specific necessities).

To do that, you will find all information on suppliers portals:

RENAULT	PSA PEUGEOT CITROËN
Through ENX	
http://suppliers.renault.enxo.org	http://b2b.psa.enxo.org
Or through Internet	
https://suppliers.renault.com	http://b2b.psa-peugeot-citroen.com

5 Help and contacts

RENAULT	PSA PEUGEOT CITROËN
For any complementary information, you can contact:	
RENAULT Helpdesk using following number: **0 811 88 39 39** depuis la France Ou **+33 1 70 36 04 84** depuis l'étranger https://suppliers.renault.com/pfr_visible/fr/ps/Services/178478.html	**PSA PEUGEOT CITROËN Helpdesk** using following number: **+33 (0) 3 84 46 90 00**
For any question concerning ENX, you can send an email to following **mailboxes**	
enx.telecom@renault.com	contact-meeting@mpsa.com

6 LEXICON

ENX **ADSL**: ENX Asymmetric DIGITAL Subscriber Line.
This term is sometimes replaced by LNPA (which means Numerical Line with Asymmetrical Pair) in the French-speaking countries.
This system permits on the same line to have a download channel (downstream) with high bandwidth and an upload channel (upstream) with average bandwidth.
Take care, contrary to the general public ADSL, on the same ENX ADSL line, there is no channel of telephony (called POTS in telecommunication which means: Plain Old Telephone Service).

CSP: Certified Service Provider (Telecom operators certified by ENX Association).

DMZ: DeMilitarized Zone. LAN where are located the servers which are in contact with the outside world. This LAN is highly secured.

DNS: Domain Name Server. Mechanism permitting to link a name (for ex. http://suppliers.renault.enxo.org or http://b2b.psa.enxo.org) to an IP address.

ENX: Secure communication network, connecting partners in the automotive industry.
For additional information, see http://www.enxo.com.

FIREWALL: Hardware connected between the outside world and your intranet. This device will filter out all unauthorized accesses.

IP: Internet Protocol.

IPSEC: Secure Internet Protocol suite of standards defining how to establish and use secured connections called tunnels on a public IP network.

LAN: Local Area Network.

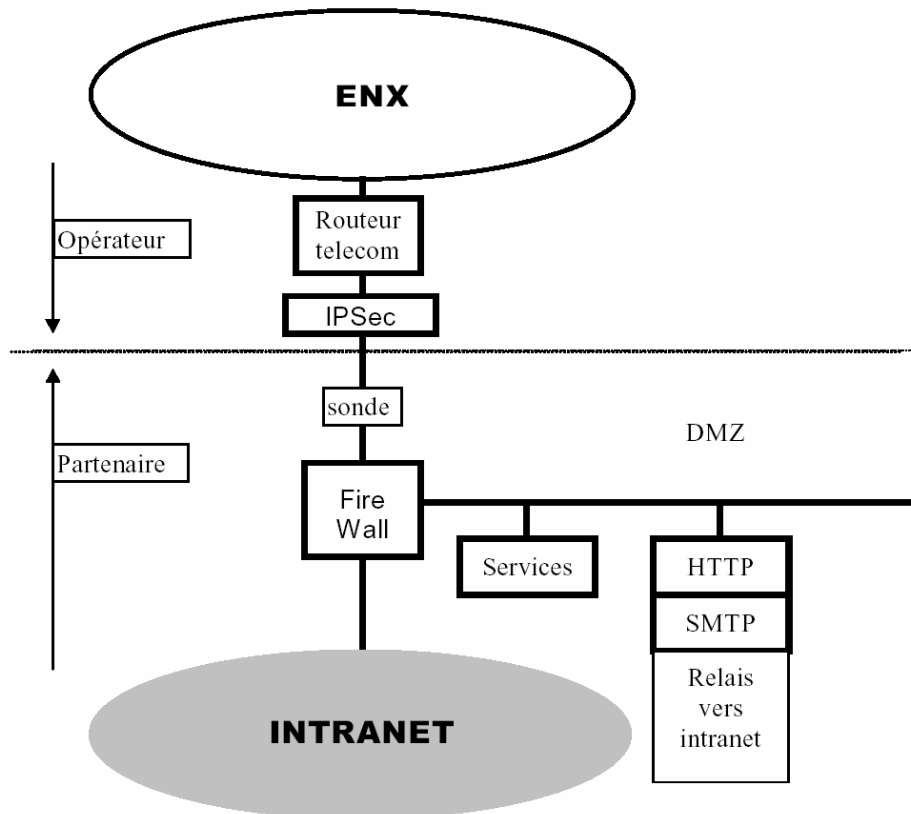**NIC**: "Nommage Internet en Coopération" = Internet naming in cooperation.

SONDE: Intrusion detection system, watch out traffic on a link.

TUNNEL: Authenticated and encrypted virtual IP connection between two ENX access ports.

7 Appendix

7.1 Example of architecture with firewall and ENX DMZ

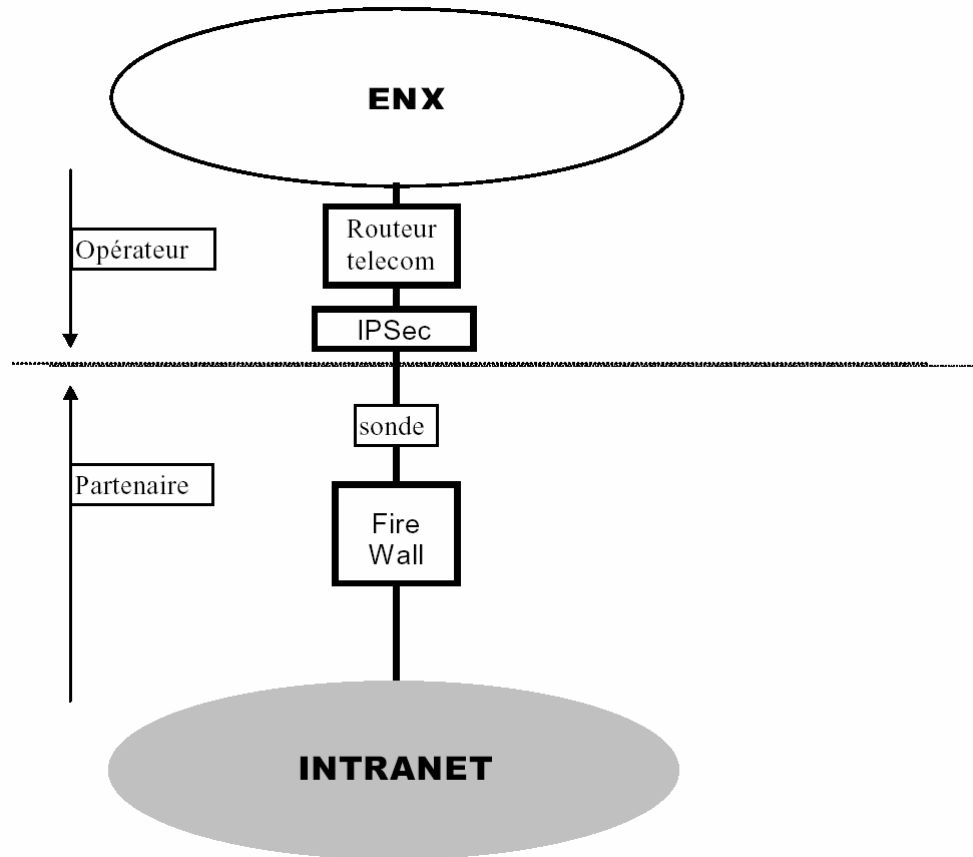Security is enforced by filtering at the IP connection level.

A typical "three LANs" architecture connected through a firewall:

- External LAN: extranet dedicated to the operators connection
- DMZ: LAN hosting servers and applications accessed by ENX external users
- Internal LAN: Trading Partner intranet – accessed only through the relay.

7.2 Example of architecture with firewall only

Security is enforced by filtering at the IP connection level.

This is a two LANs architecture connected through a firewall:

- External LAN: extranet dedicated to the operators connection
- Internal LAN: Trading Partner intranet

7.3 Example of architecture without firewall

When the Trading Partner communicates exclusively with Renault and do not want to install and operate its own firewall.
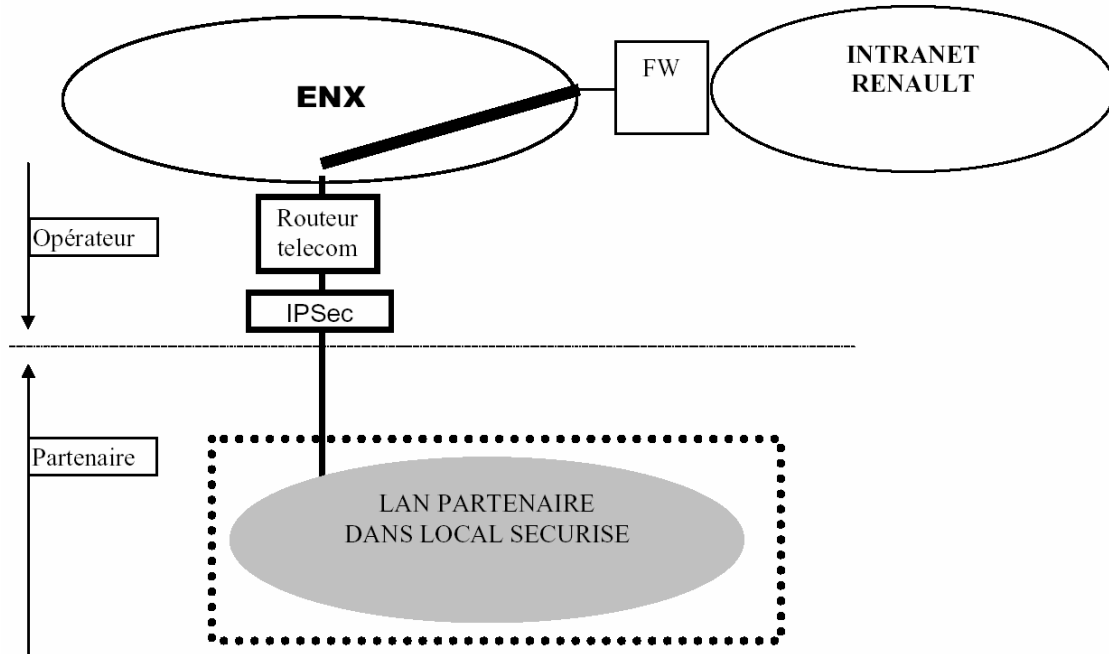
In that configuration, Renault will enforce the following security rules:

- The workstations of the trading partner connected to the ENX are part of a LAN, which is isolated from the partner network. The workstations are installed in a specific room with physical access control and they are not connected to any other public or private network.

- The Trading Partner has only one ENX tunnel – the one with Renault – apart from operators service tunnels.

- Renault can audit the ENX LAN of the Trading Partner.