

LonMark® France

Agor@Lon 2017

Passerelles, Historisation et SCADA

Automate Serveur L-INX
Passerelle L-GATE

Paris, le 23 mars 2017

LOYTEC

PLAN

1) L-INX & L-GATE

2) Connexions Locales et Globales

3) Fonctions

4) Configuration

5) Interface Utilisateur Graphique

6) Limites des Ressources

LonMark® France

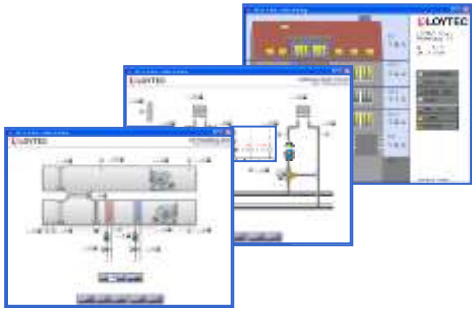
Passerelles et Interfaces Utilisateurs Graphiques pour la Gestion Technique du Bâtiment

Spécifications	
Type	**LGATE-952**
Interfaces	2 x Ethernet (100Base-T): OPC XML-DA, OPC UA, LonMark IP-852*, BACnet/IP**, KNXnet/IP, Modbus TCP (Maître ou esclave), HTTP, FTP, SSH, HTTPS, pare-feu, SNMP 1 x TP/FT-10* (Système LonMark) 2 x USB-A: WLAN (nécessite LWLAN-800), EnOcean (nécessite LENO-80x), SMI (nécessite LSMI-804) 2 x RS-485 (ANSI TIA/EIA-485): BACnet MS/TP** ou Modbus RTU (Maître ou esclave) 1 x EXT1: M-Bus, Maître EN 13757-3 (nécessite L-MBUS20/80) 1 x EXT2: KNX TP1 (nécessite LKNX-300) 1 x EXT3: SMI (nécessite LSMI-800) ** Soit LonMark IP-852 ou TP/FT-10 (pas de routeur)* *** Soit BACnet/IP ou BACnet MS/TP (pas de routeur)*
Outils	L-INX Configurator
Remote Network Interface	1 RNI avec 2 équipements MNI

Passerelles LOYTEC

- Différents modèles matériels

- Héberge des Interfaces
  Utilisateur Graphiques

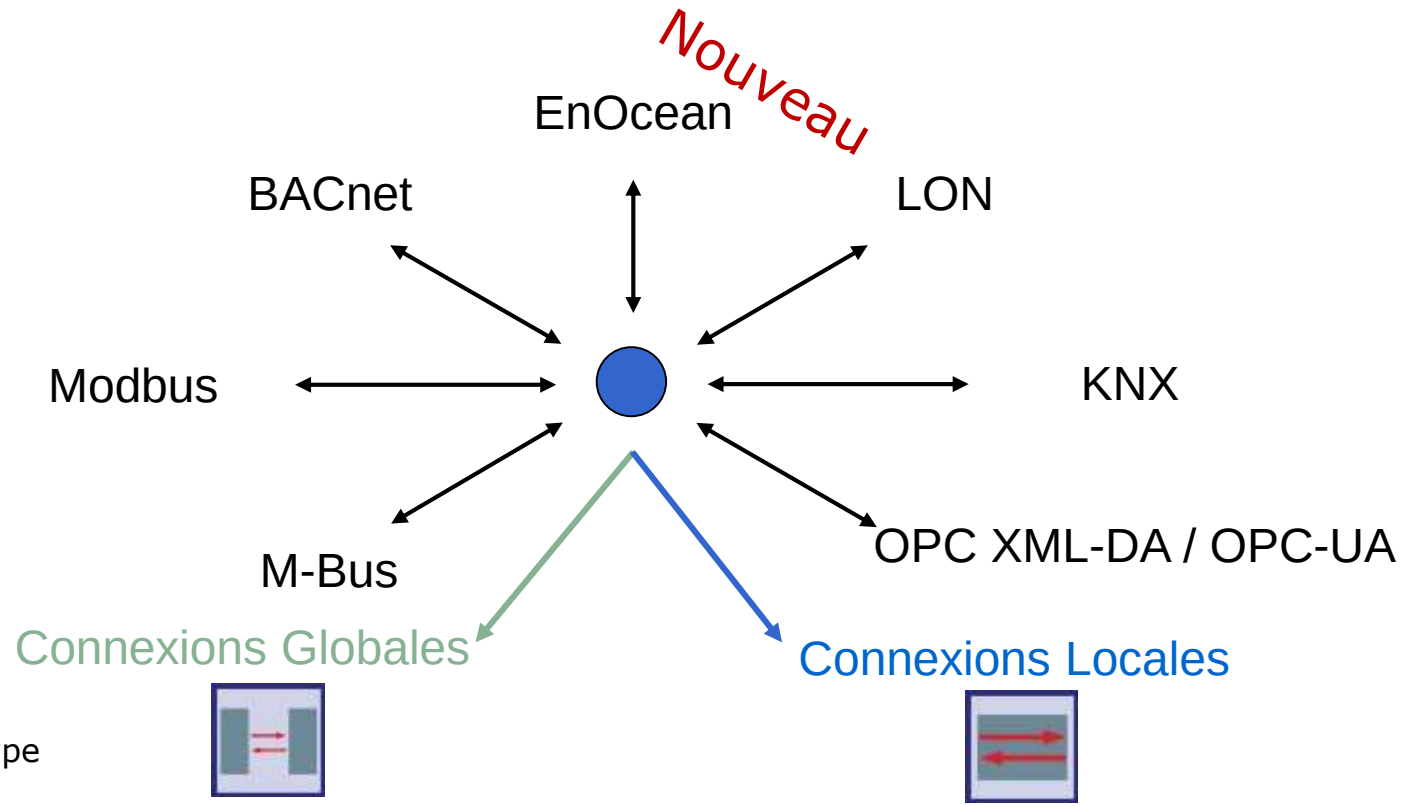


- Les Automates Serveurs L-INX étendent leurs E/S grâce aux modules L-IOB[1]

[1] pas L-GATE

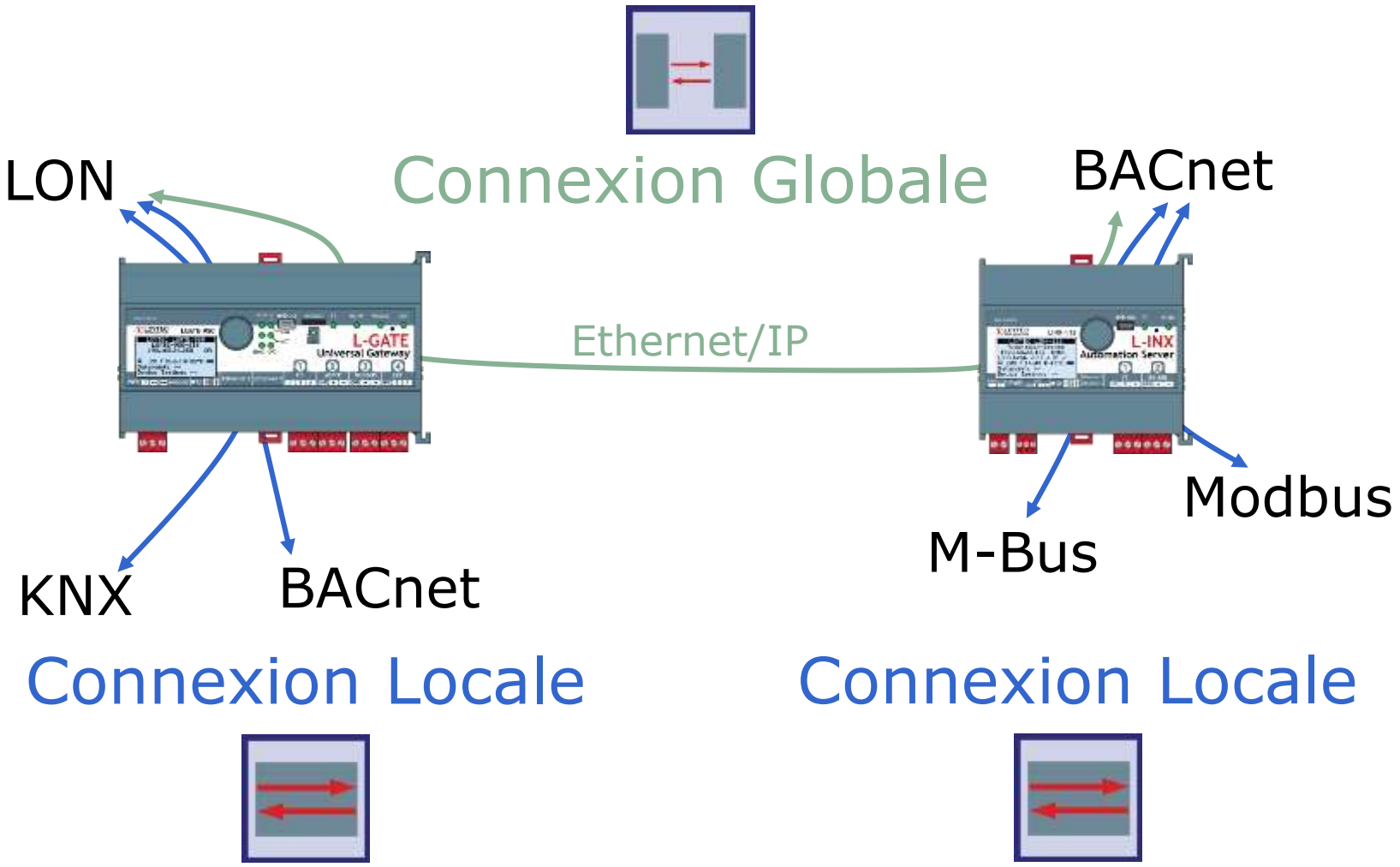
La fonction de Passerelle
Connexions Locales et Globales

- Intègre divers protocoles standards[1]
- Passerelle avec connexions locales et globales
- Fonction de “Génération Automatique et connexion”

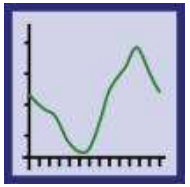
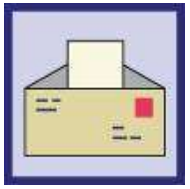
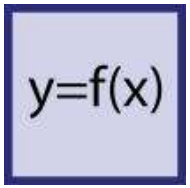


[1] dépend du type de matériel

Caractéristiques de la Passerelle
Connexions Locales et Globales



Fonctions

- Alarmes 
- Programmes horaires 
- Enregistrement des données 
- Envoi d’E-mail 
- Logique de base grâce à des blocs de fonctions mathématiques 

Fonctions

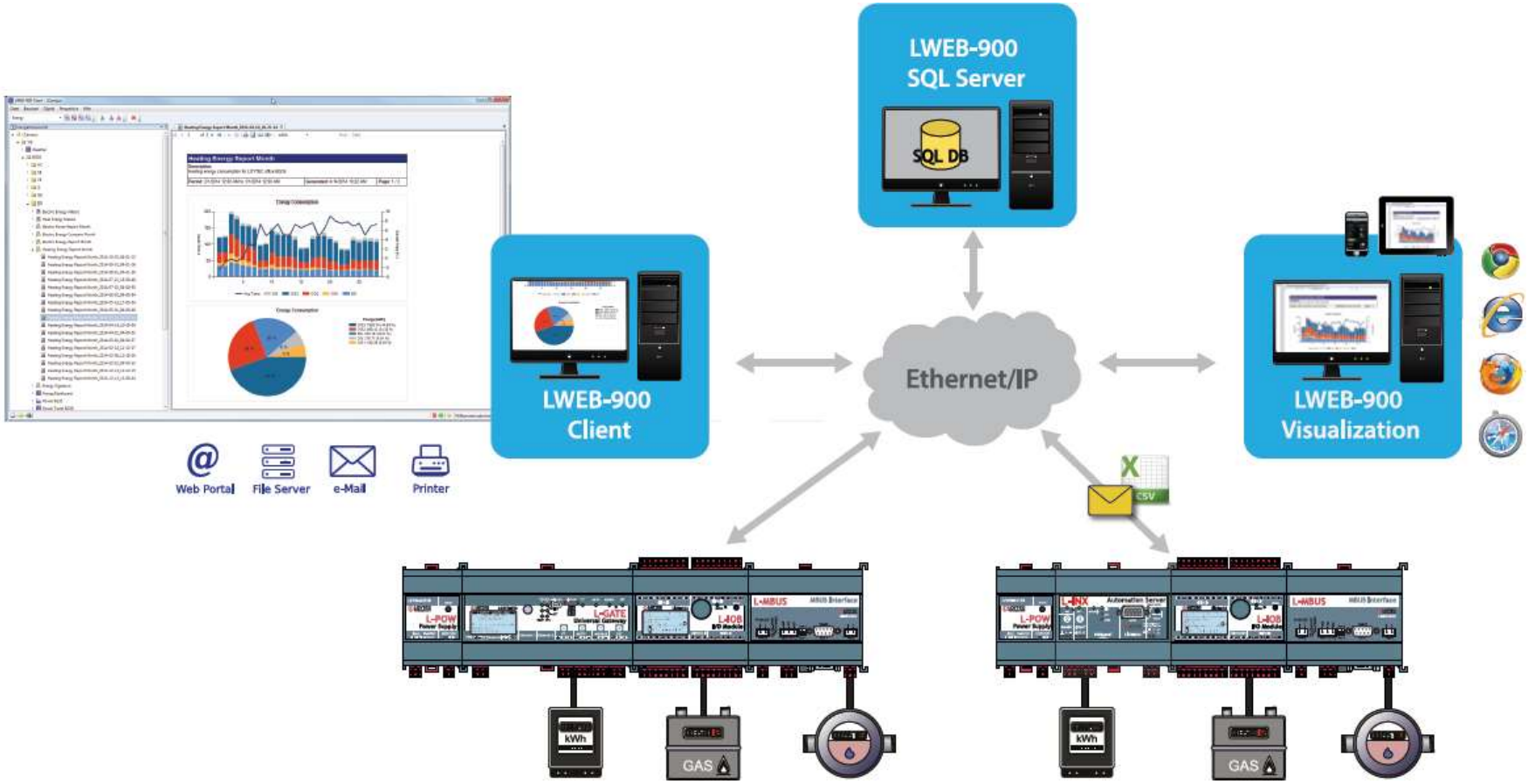
- Serveur OPC embarqué (XML-DA / UA)

- Client OPC embarqué (XML-DA)

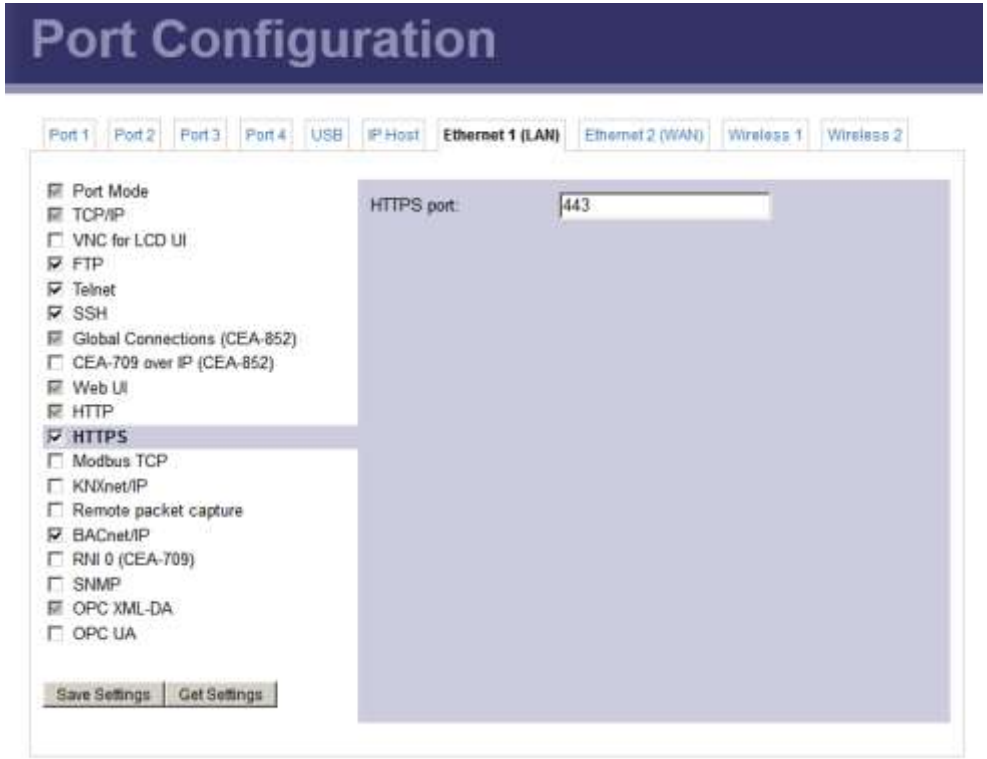
- Serveur Web embarqué

- Intégrée à la supervision L-WEB

- Monitoring et Reporting



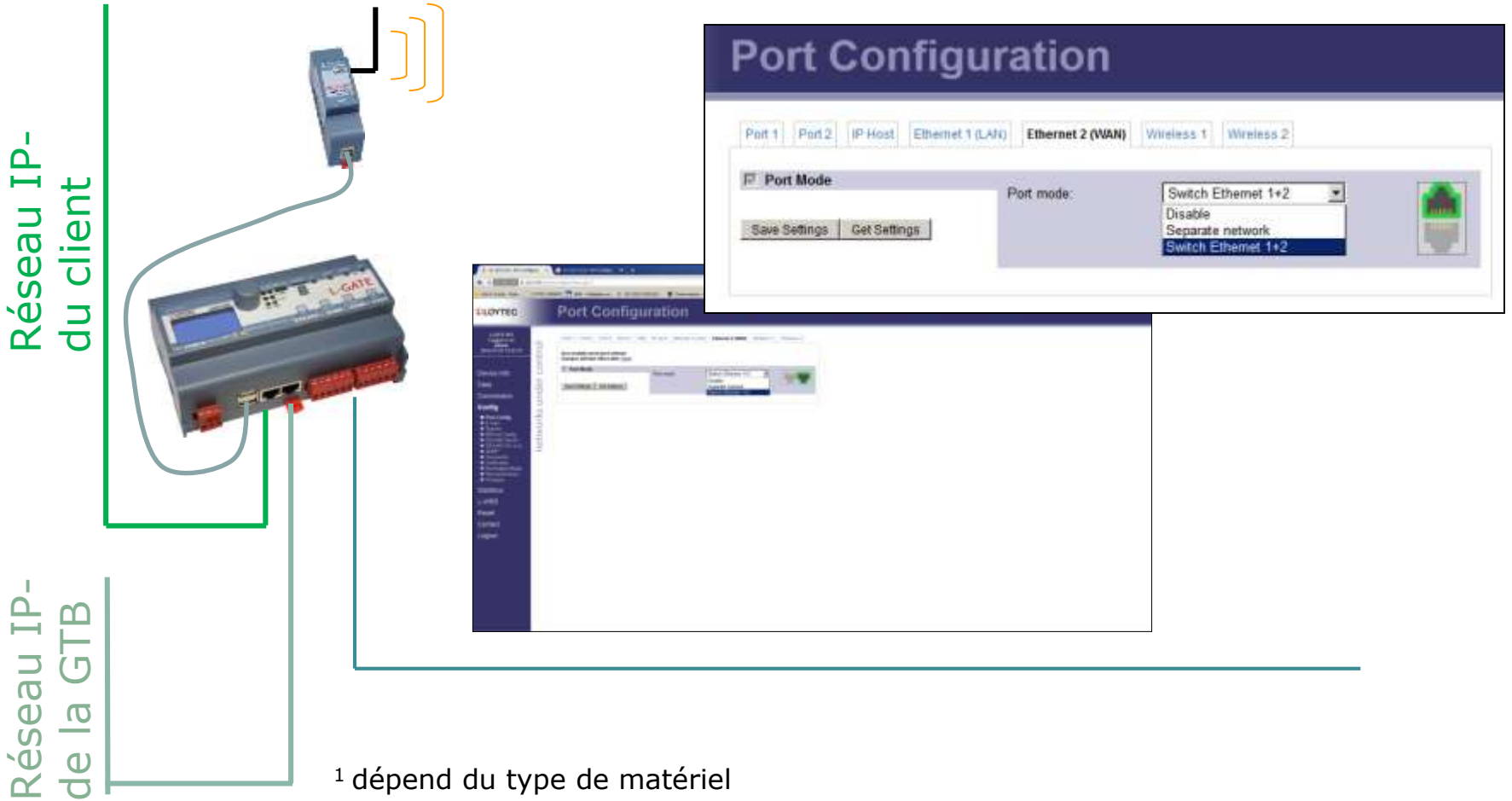
- Sécurité IP[1]



[1] dépend du type de matériel

Nouveau

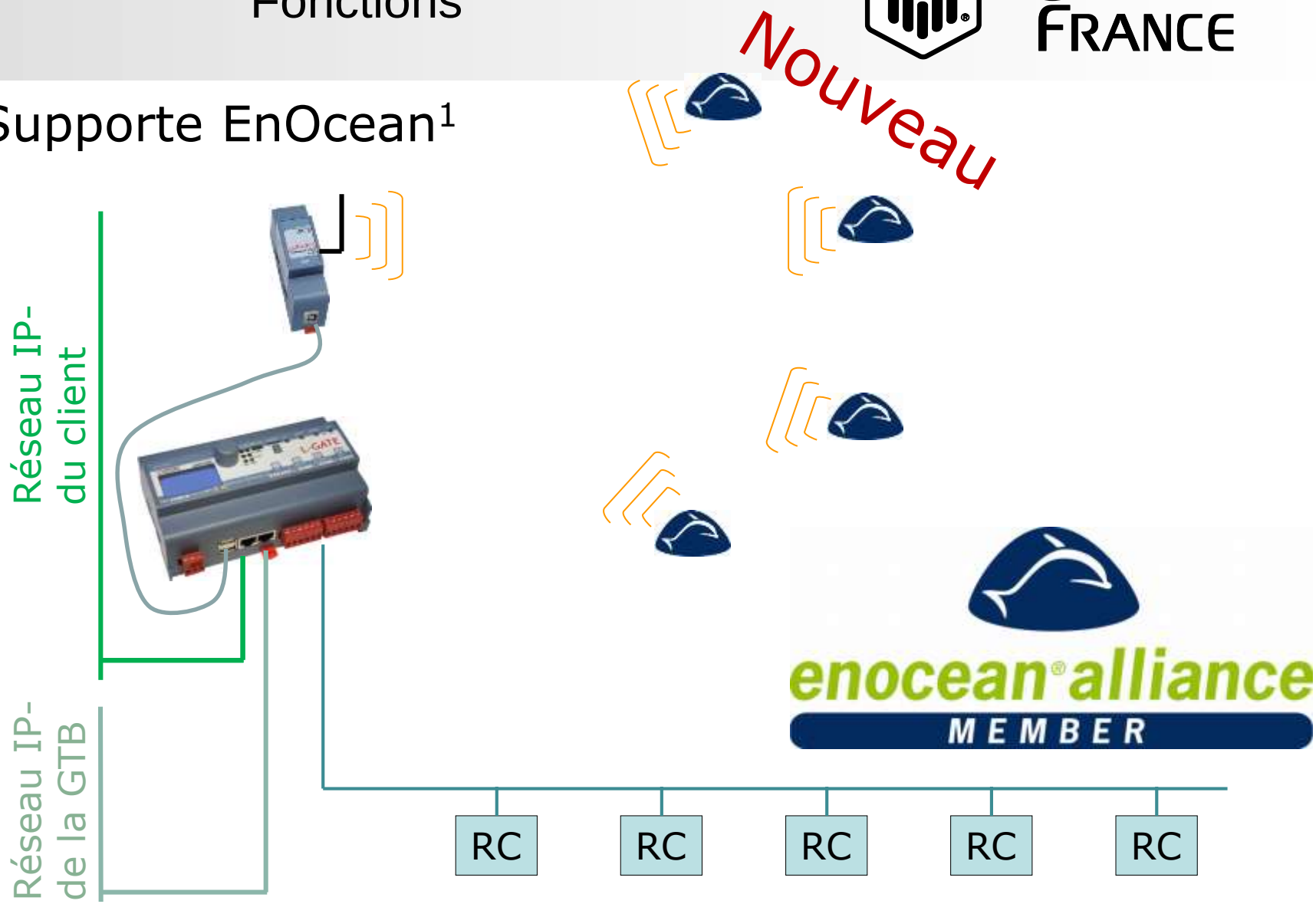
- Communication sur différents réseaux IP[1]



[1] dépend du type de matériel

Fonctions

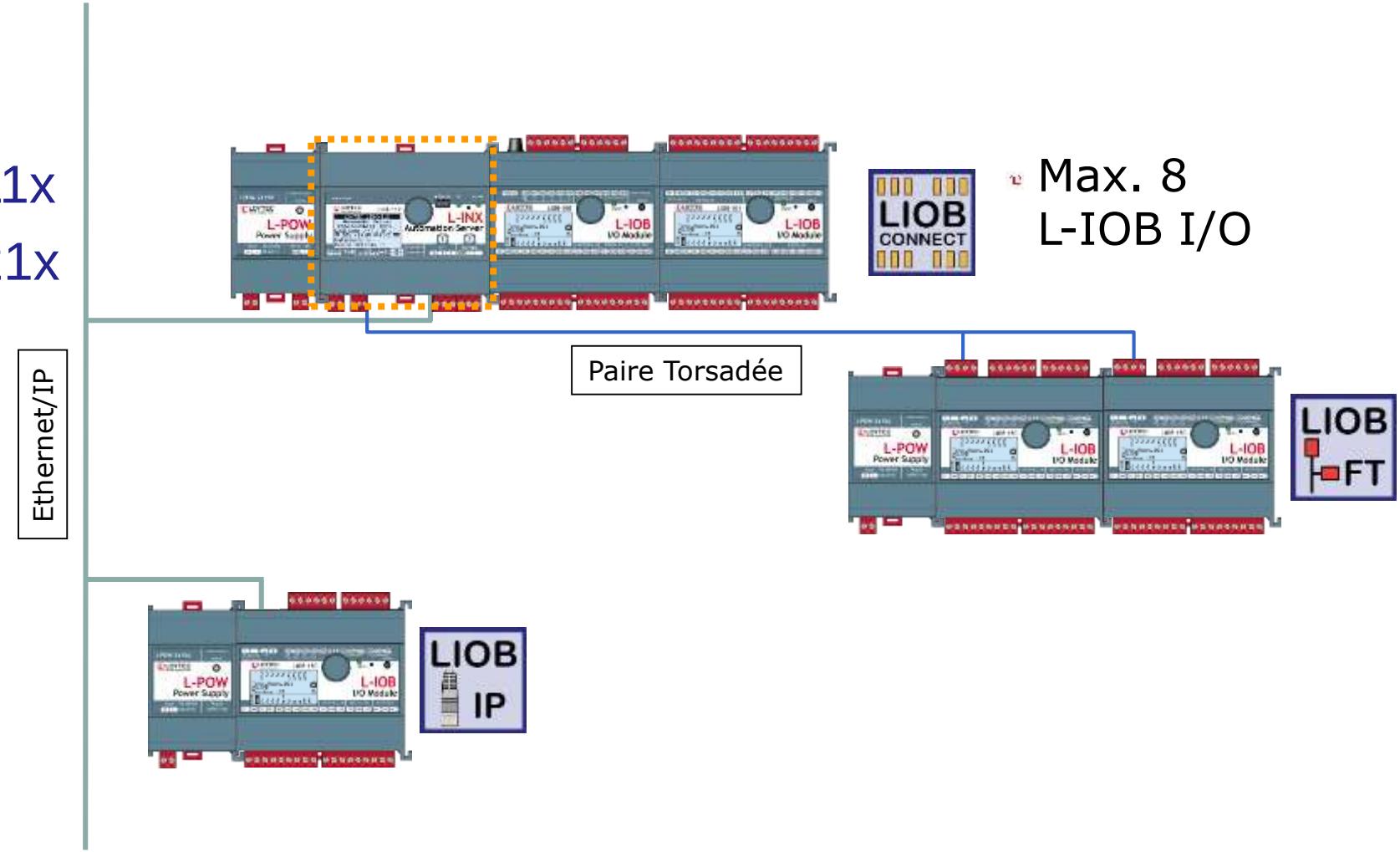
- Supporte EnOcean[1]



[1] fonction du type de matériel

Automate Serveur L-INX
connexion de Modules d'E/S L-IOB

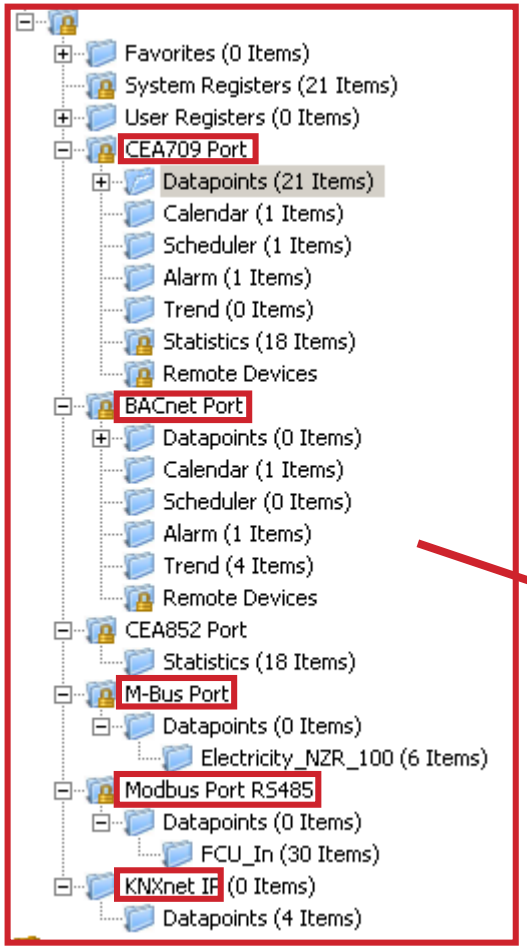
- LINX-11x
- LINX-21x

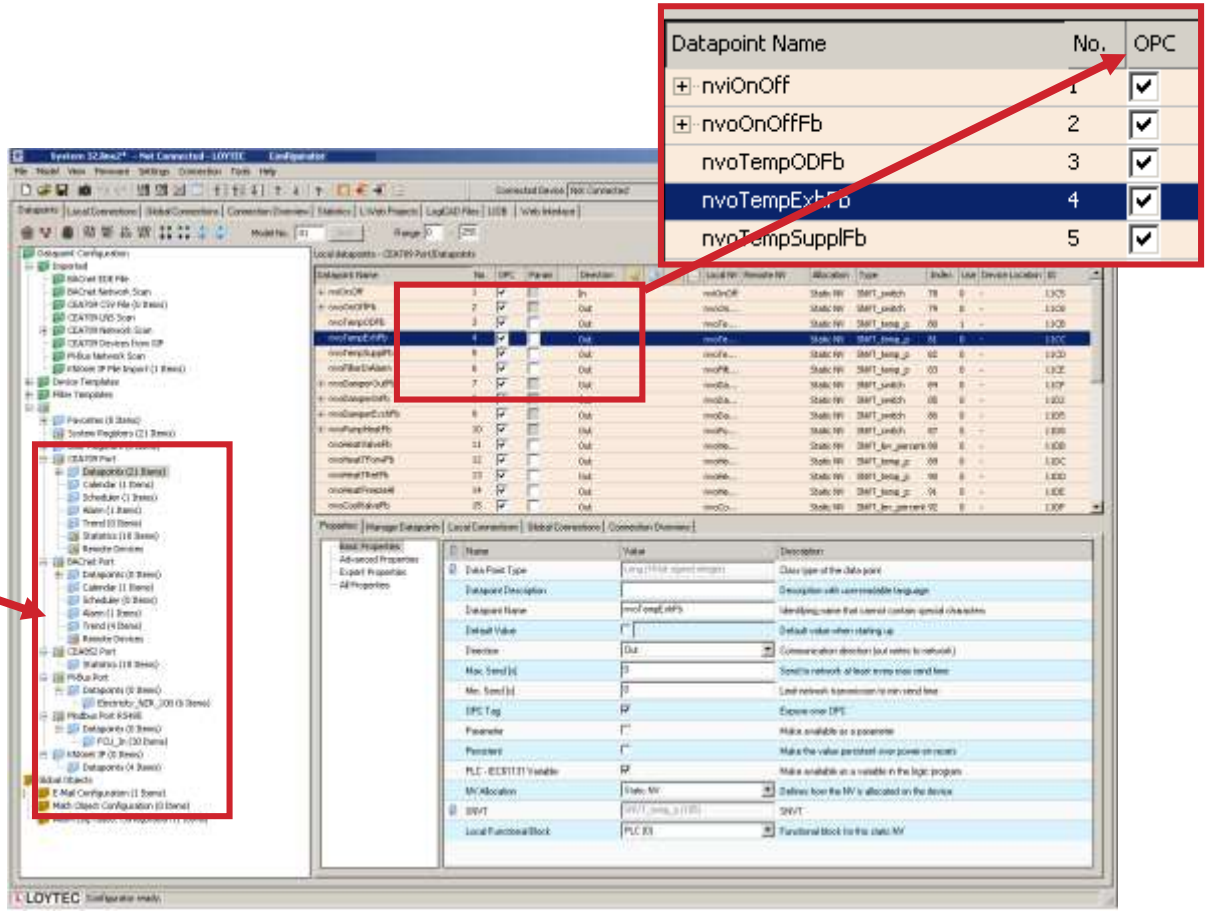


- Max. 8
  L-IOB I/O

Configuration

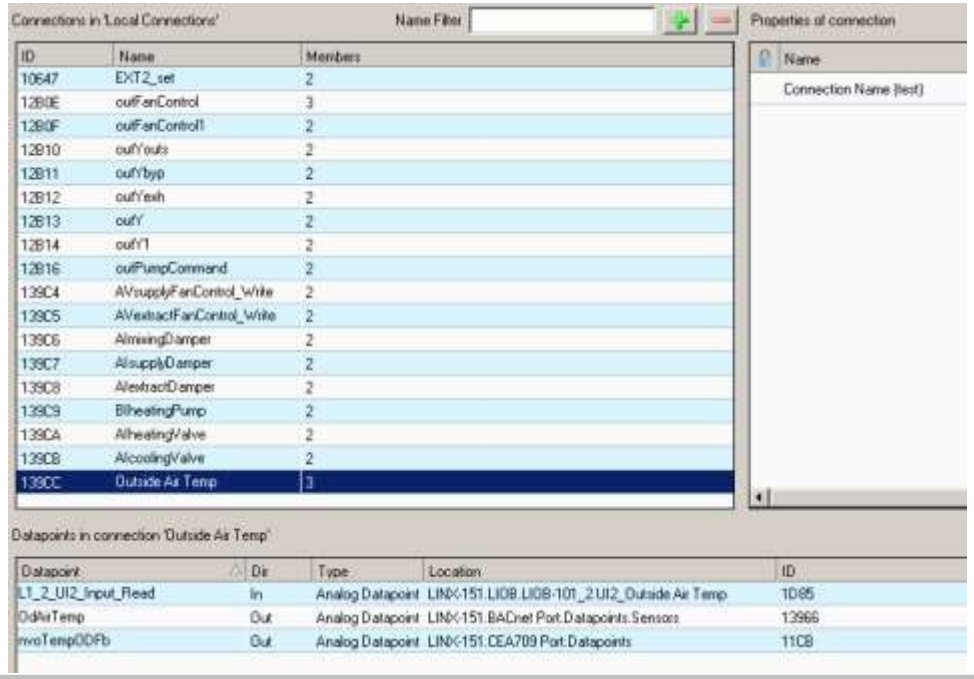
Configuration
L-INX/L-GATE Configurator





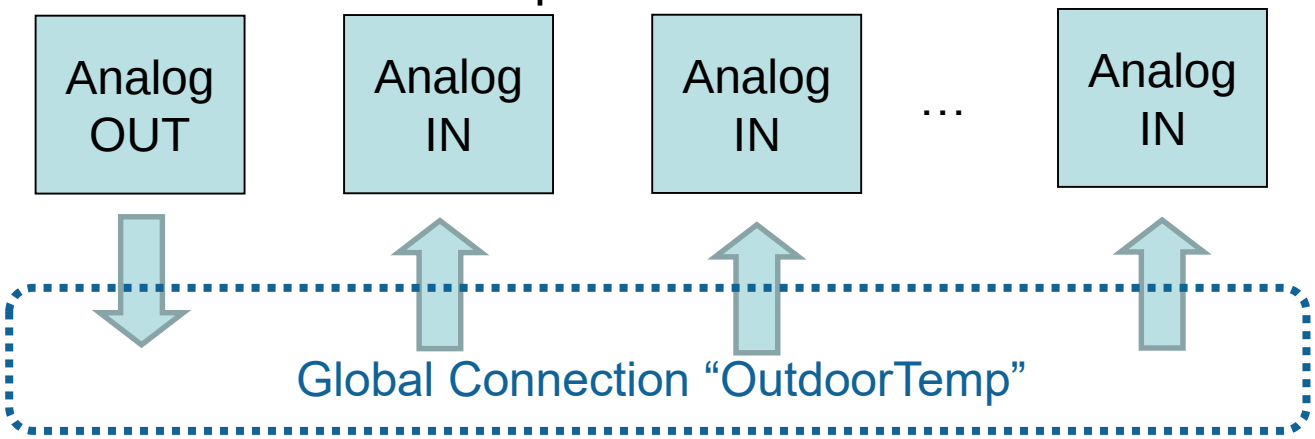
Connexions Locales

- Les Connexions Locales spécifient quels data points échangent leurs valeurs ensemble au niveau de l'équipement
- Les Connexions sont réalisées en sélectionnant une source et une ou plusieurs cibles (data points)



Connexions Globales

- Les connections globales permettent de faire la même chose que des connexions locales mais elles délaissent le seul contexte local pour un contexte réseau IP
- Une connexion globale créé un cloud de données ayant un nom ‘système’
- Les Data points ajoutés à une connexion globale peuvent envoyer leur donnée dans cette connexion ou bien recevoir une donnée à partir de cette connexion.



Configuration
Connexion "Génération Automatique"

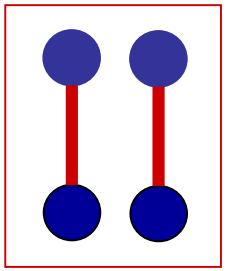
- Création rapide avec la fonction "auto-generate" appliquée à plusieurs technologies de communication source
- Les technologies suivantes peuvent être la cible pour une génération automatique de type "auto-generation" :

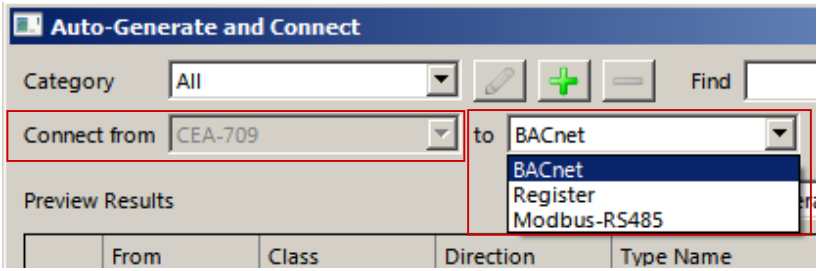
  CEA-709 (static NVs),

  BACnet (Server Objects),

  Modbus (Slave Registers),

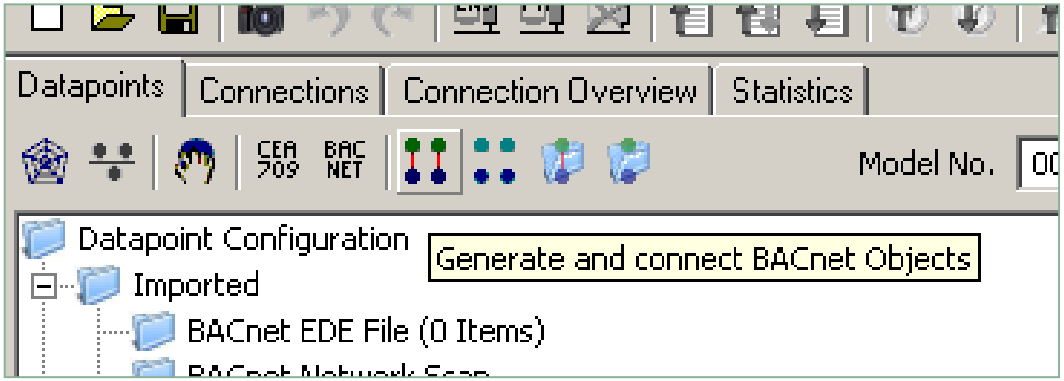
  User Registers





Configuration
Cas d'école : LON > BACnet

- Création ultra rapide !
- Mise en relation automatique selon la norme CEN/TS 15231:2005
  - Génération automatique d'objets serveurs BACnet correspondant aux Variables Réseaux sélectionnées
  - Liens créés automatiquement entre les objets BACnet et les NVs



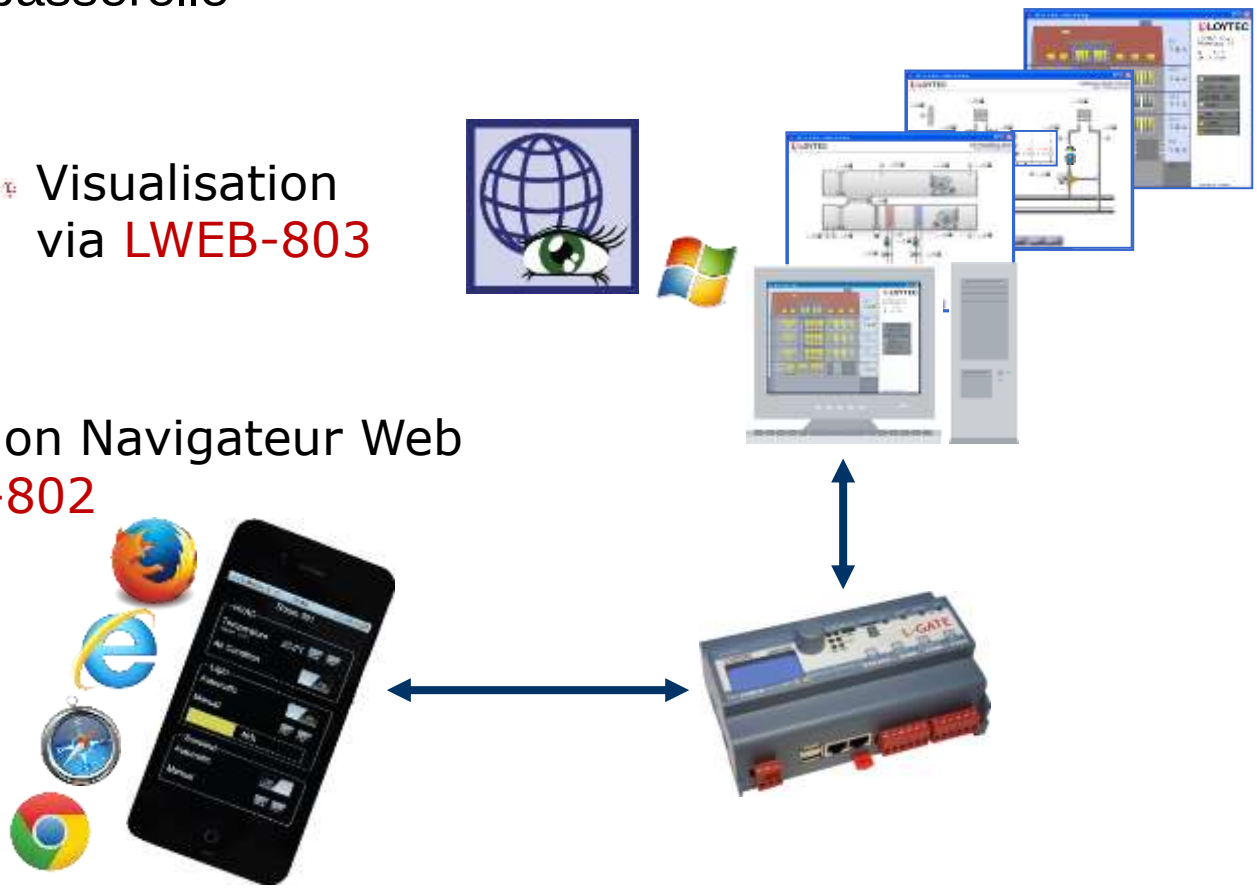
Interface Utilisateur Graphique

Conduite et Supervision
Interface Utilisateur Graphique

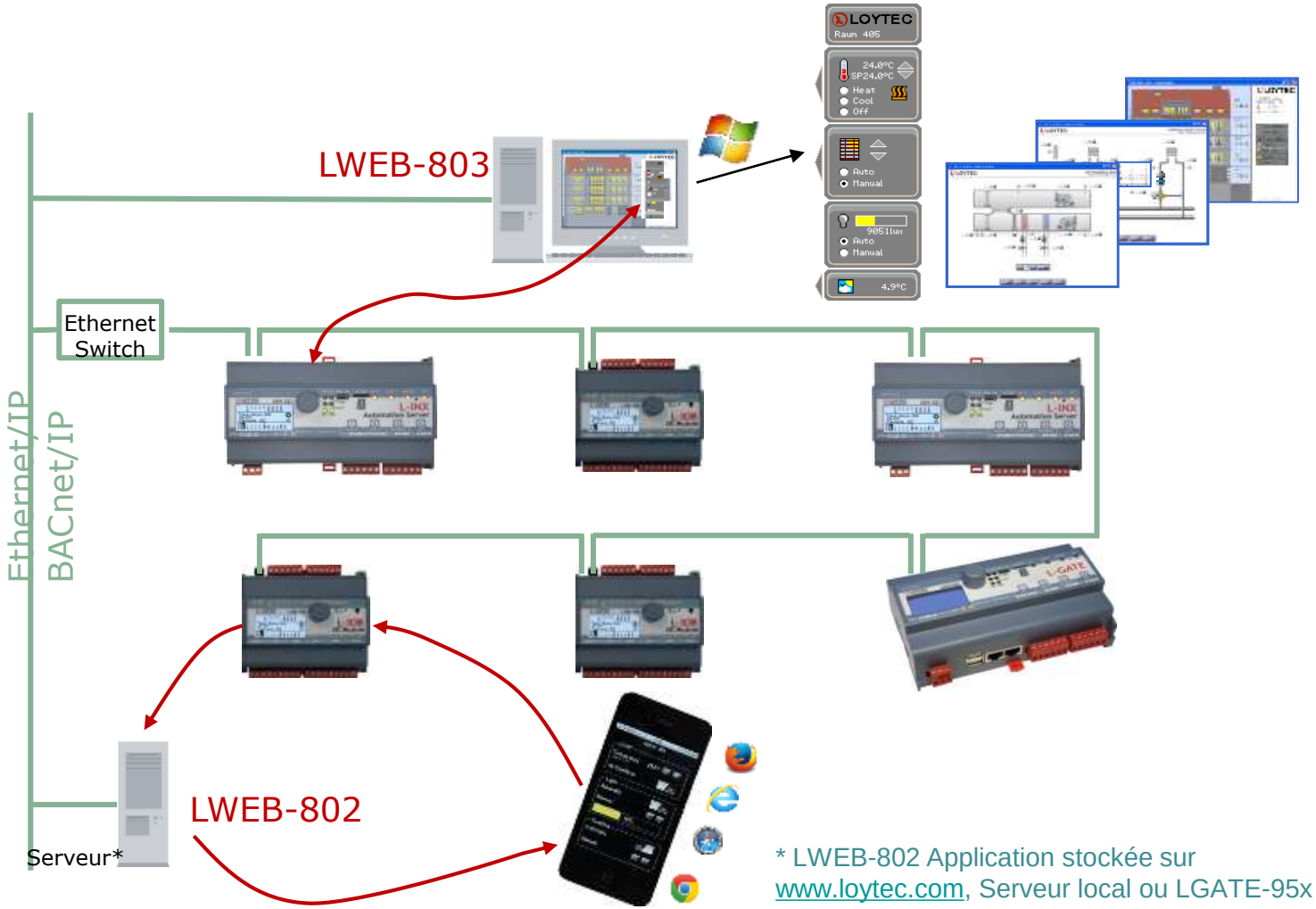
- Les graphiques customisés avec du contenu dynamique sont stockés dans la passerelle

  - Visualisation via LWEB-803

  - Visualisation Navigateur Web via LWEB-802

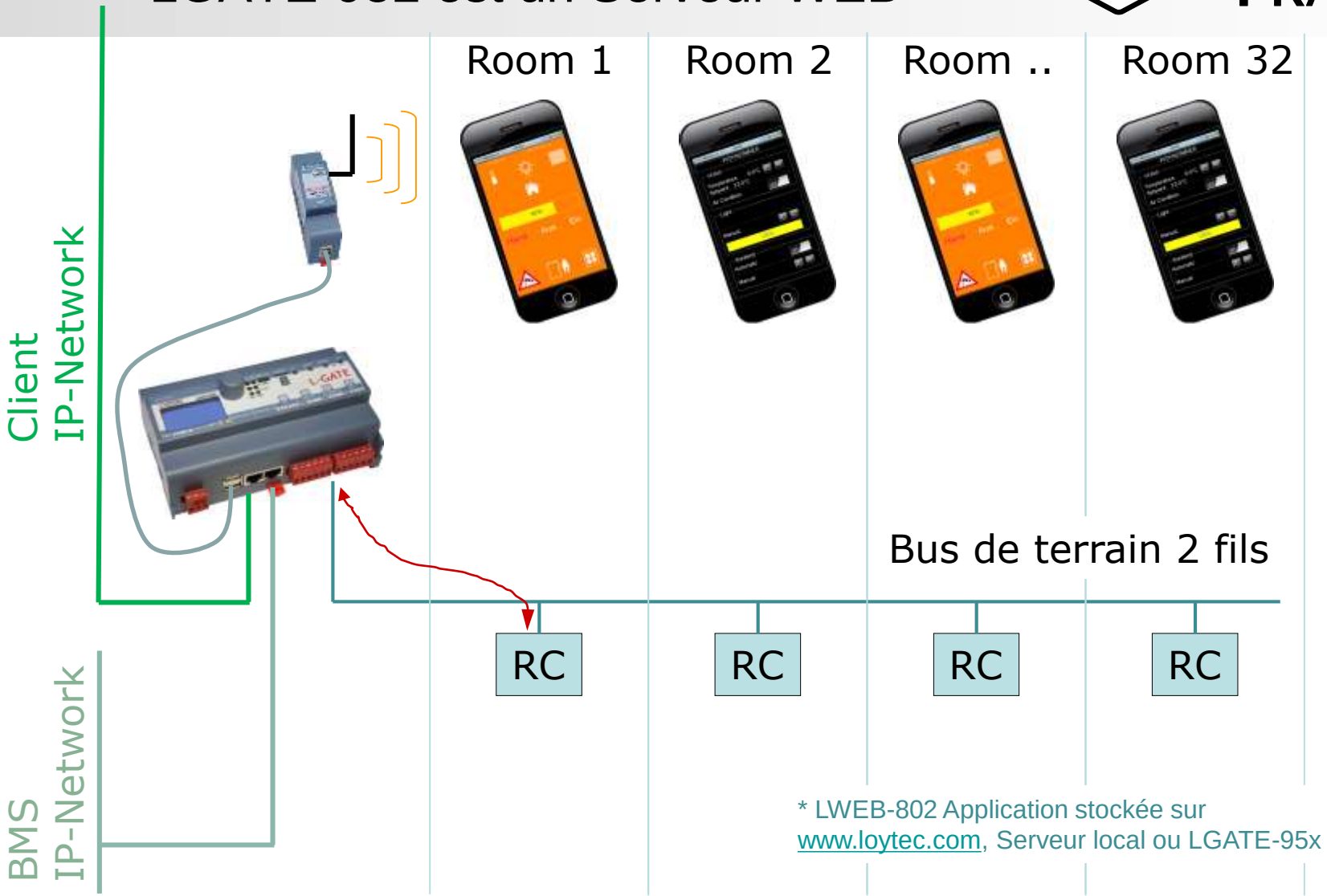


Conduite et Supervision
Interface Utilisateur Graphique



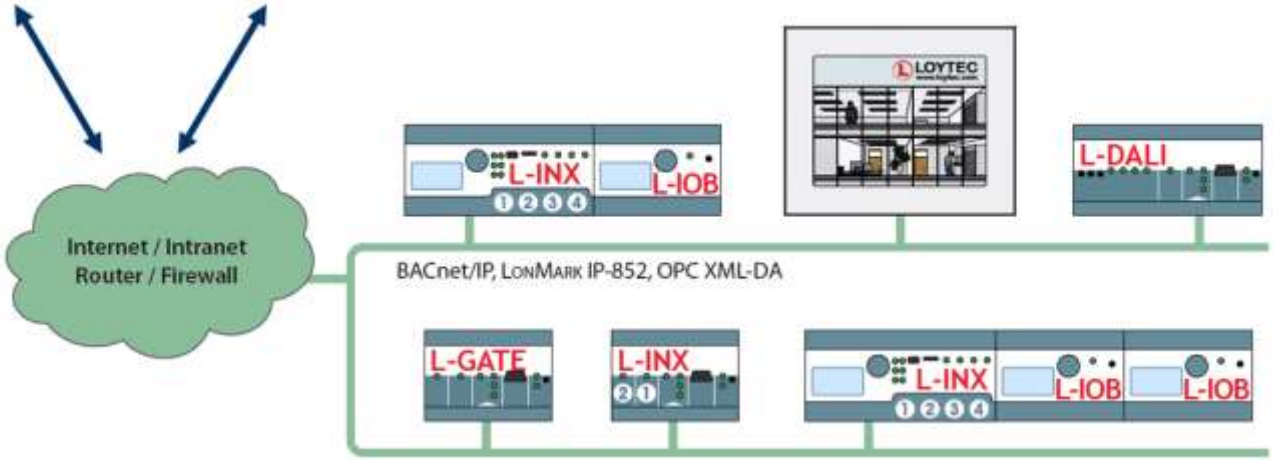
* LWEB-802 Application stockée sur www.loytec.com, Serveur local ou LGATE-95x

Exemple LWEB-802*: LGATE-952 est un Serveur WEB



* LWEB-802 Application stockée sur www.loytec.com, Serveur local ou LGATE-95x

Le System L-WEB



Limites des Ressources

Modèles L-INX et L-GATE

Features \ Model	LINX-100	LINX-101	LINX-102	LINX-103	LINX-110	LINX-111	LINX-112	LINX-113	LINX-120	LINX-121	LINX-150	LINX-151
CEA-709 Router		✓		✓		✓		✓		✓		✓
CEA-709 RNI	✓		✓		✓		✓		✓		✓	
CEA-709 (FT)	✓[1]	✓	✓[1]	✓	✓[1]	✓	✓[1]	✓	✓[1]	✓	✓[1]	✓
CEA-852 (IP)	✓[1]	✓	✓[1]	✓	✓[1]	✓	✓[1]	✓	✓[1]	✓	✓[1]	✓
BACnet Router												✓
BACnet MS/TP											✓[2]	✓
BACnet IP											✓[2]	✓
BBMD												✓
Modbus RTU	✓	✓	✓	✓	✓	✓	✓	✓	✓[1]	✓	✓[3]	✓[3]
Modbus IP	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
M-Bus	✓	✓	✓[4]	✓[4]	✓	✓	✓[4]	✓[4]	✓[4]	✓[4]	✓[4]	✓[4]
KNX TP1			✓[4]	✓[4]			✓[4]	✓[4]	✓[4]	✓[4]	✓[4]	✓[4]
KNX IP			✓	✓			✓	✓	✓	✓	✓	✓
EnOcean			✓[5]	✓[5]			✓[5]	✓[5]	✓[5]	✓[5]	✓[5]	✓[5]
OPC XML-DA	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
OPC UA			✓	✓			✓	✓	✓	✓	✓	✓
OPC Client			✓	✓			✓	✓	✓	✓	✓	✓
SNMP			✓	✓			✓	✓	✓	✓	✓	✓
PLC (IEC 61131)					✓	✓	✓	✓	✓	✓	✓	✓
LIOB Connect			✓	✓			✓	✓	✓	✓	✓	✓
LIOB FT + IP	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
LCD Display			✓	✓			✓	✓	✓	✓	✓	✓
Serial Console	✓	✓			✓	✓						
SD Card									✓	✓	✓	✓
USB			✓	✓			✓	✓	✓	✓	✓	✓
Ethernet Switch/Hub			✓	✓			✓	✓	✓	✓	✓	✓
WLAN			✓[5]	✓[5]			✓[5]	✓[5]	✓[5]	✓[5]	✓[5]	✓[5]
SSH, HTTPS, Firewall			✓	✓			✓	✓	✓	✓	✓	✓

Features \ Model	LINX-200	LINX-201	LINX-202	LINX-203	LINX-210	LINX-211	LINX-212	LINX-213	LINX-220	LINX-212	LGATE-900	LGATE-902	LGATE-950	LGATE-951
CEA-709 Router														
CEA-709 RNI												✓	✓	✓
CEA-709 (FT)											✓[1]	✓[1]	✓[1]	✓[1]
CEA-852 (IP)											✓[1]	✓[1]	✓[1]	✓[1]
BACnet Router		✓		✓		✓		✓		✓				
BACnet MS/TP	✓[2]	✓	✓[2]	✓	✓[2]	✓	✓[2]	✓	✓[2]	✓	✓[2]	✓[2]	✓[2]	✓[2]
BACnet IP	✓[2]	✓	✓[2]	✓	✓[2]	✓	✓[2]	✓	✓[2]	✓	✓[2]	✓[2]	✓[2]	✓[2]
BBMD		✓		✓		✓		✓		✓	✓	✓	✓	✓
Modbus RTU	✓[3]	✓[3]	✓[3]	✓[3]	✓[3]	✓[3]	✓[3]	✓[3]	✓	✓		✓[3]	✓	✓[3]
Modbus IP	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓
M-Bus	✓	✓	✓[4]	✓[4]	✓	✓	✓[4]	✓[4]	✓[4]	✓[4]		✓[4]	✓[4]	✓
KNX TP1			✓[4]	✓[4]			✓[4]	✓[4]	✓[4]	✓[4]		✓[4]	✓[4]	✓
KNX IP			✓	✓			✓	✓	✓	✓		✓	✓	✓
EnOcean			✓[5]	✓[5]			✓[5]	✓[5]	✓[5]	✓[5]		✓[5]	✓[5]	✓[5]
OPC XML-DA	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
OPC UA			✓	✓			✓	✓	✓	✓		✓	✓	✓
OPC Client			✓	✓			✓	✓	✓	✓		✓	✓	✓
SNMP			✓	✓			✓	✓	✓	✓		✓	✓	✓
PLC (IEC 61131)					✓	✓	✓	✓	✓	✓				
LIOB Connect			✓	✓			✓	✓	✓	✓				
LIOB FT + IP	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓				
LCD Display			✓	✓			✓	✓	✓	✓		✓	✓	✓
Serial Console	✓	✓			✓	✓					✓			
SD Card									✓	✓			✓	✓
USB			✓	✓			✓	✓	✓	✓		✓	✓	✓
Ethernet Switch/Hub			✓	✓			✓	✓	✓	✓		✓	✓	✓
WLAN			✓[5]	✓[5]			✓[5]	✓[5]	✓[5]	✓[5]		✓[5]	✓[5]	✓[5]
SSH, HTTPS, Firewall			✓	✓			✓	✓	✓	✓		✓	✓	✓

Source:
L-INX User Manual

Limites des Ressources

Limits \ Model	100/101	102/103	110/111	112/113	120/121	150/151
Total number of data points	10,000	10,000	10,000	10,000	30,000	30,000
OPC Tags	2,000	2,000	500	2,000	10,000	10,000
User Registers	1,000	1,000	1,000	1,000	2,000	2,000
NVs (static, dynamic)	1,000	1,000	1,000	1,000	2,000	2,000
External NVs	1,000	1,000	1,000	1,000	2,000	2,000
Alias NVs (ECS and legacy mode)	1,000	1,000	1,000	1,000	2,000	2,000
Address table entries/legacy	512/ 15	512/ 15	1,000/ 15	1000/ 15	1,000/ 15	1,000/ 15
LONMARK Calendar objects	1 (25 calendar patterns)					
LONMARK Scheduler objects	100 (max. AST configuration size 384KB, 64 data points per scheduler)					
LONMARK Alarm Servers	1	1	1	1	1	1
BACnet objects (analog, binary, multi-state)	n/a	n/a	n/a	n/a	n/a	1,000
BACnet client mappings	n/a	n/a	n/a	n/a	n/a	5,000
BACnet scheduler objects	n/a	n/a	n/a	n/a	n/a	100
BACnet calendar objects	n/a	n/a	n/a	n/a	n/a	25
BACnet notification classes	n/a	n/a	n/a	n/a	n/a	32
BDT max recommended	n/a	n/a	n/a	n/a	n/a	100
KNX Communication Objects (per interface)	n/a	250	n/a	250	1000	1000
Trend Logs	256	256	256	256	512	512
Total trended data points	256	256	256	256	1000	1000
Total aggregated size	6MB	60MB	6MB	60MB	60MB	60MB
E-mail templates	100	100	100	100	100	100
Math objects	100	100	100	100	100	100
Alarm Logs	10	10	10	10	10	10
Modbus data points	2,000	2,000	2,000	2,000	2,000	2,000
M-Bus data points	1,000	1,000	1,000	1,000	1,000	1,000
EnOcean data points	n/a	250	n/a	250	1,000	1,000
Connections (local)	1,000	1,000	1,000	1,000	2,000	2,000
Connections (global)	250	250	250	250	250	250
L-WEB Clients (concurrent)	15	32	15	32	32	32
L-IOB Modules	8	8	8	8	24	24

Limits \ Model	200/201	202/203	210/211	212/213	220/221
Total number of data points	10,000	10,000	10,000	10,000	30,000
OPC Tags	2,000	2,000	500	2,000	10,000
User Registers	1,000	1,000	1,000	1,000	2,000
NVs (static, dynamic)	n/a	n/a	n/a	n/a	n/a
External NVs	n/a	n/a	n/a	n/a	n/a
Alias NVs (ECS and legacy mode)	n/a	n/a	n/a	n/a	n/a
Address table entries/legacy	n/a	n/a	n/a	n/a	n/a
LONMARK Calendar objects	n/a	n/a	n/a	n/a	n/a
LONMARK Scheduler objects	n/a	n/a	n/a	n/a	n/a
LONMARK Alarm Servers	n/a	n/a	n/a	n/a	n/a
BACnet objects (analog, binary, multi-state)	750	750	750	750	1,000
BACnet client mappings	750	750	750	750	5,000
BACnet scheduler objects	100	100	100	100	100
BACnet calendar objects	25	25	25	25	25
BACnet notification classes	32	32	32	32	32
BDT max recommended	100	100	100	100	100
KNX Communication Objects (per interface)	n/a	250	n/a	250	1000
Trend Logs	256	256	256	256	512
Total trended data points	256	256	256	256	1000
Total aggregated size	6MB	60MB	6MB	60MB	60MB
E-mail templates	100	100	100	100	100
Math objects	100	100	100	100	100
Alarm Logs	10	10	10	10	10
Modbus data points	2,000	2,000	2,000	2,000	2,000
M-Bus data points	1,000	1,000	1,000	1,000	1,000
EnOcean data points	n/a	250	n/a	250	1,000
Connections (local)	1,000	1,000	1,000	1,000	2,000
Connections (global)	250	250	250	250	250
L-WEB Clients (concurrent)	15	32	15	32	32
L-IOB Modules	8	8	8	8	24

Certifiés par le BTL dans la catégorie BACnet Building Controllers

WSPCert

Certificate

No. BAC-0059-03

WSPCert attests the conformance of the following BACnet implementation to the BACnet standard ISO 16484-5:2012. The attested conformance refers to the BACnet Interoperability Building Blocks (BIBBs) listed in the annex of this certificate.

The 11 BACnet Building Controllers (B-BC)

LINX-150, LINX-151, LINX-200, LINX-201, LINX-210, LINX-211, LINX-220, LINX-221, LGATE-900, LGATE-950, LGATE-951

with the software version:

5.0

of

LOYTEC electronics GmbH
Blumengasse 35, 1170 Wien, Austria

has fulfilled the requirements according to the test standard ISO 16484-6, the BTL Test Plan 12.0 and the Certification Rules of the BACnet Interest Group Europe, see **MBS Test Report No. VG 2013_8264.**

The certificate is valid until 2015/04/01

Date of renewal 2013/12/19

BACnet INTEREST GROUP EUROPE

2013/12/19
Date of initial certification

Dipl.-Ing. G. Weinmann
Head of Certification Body

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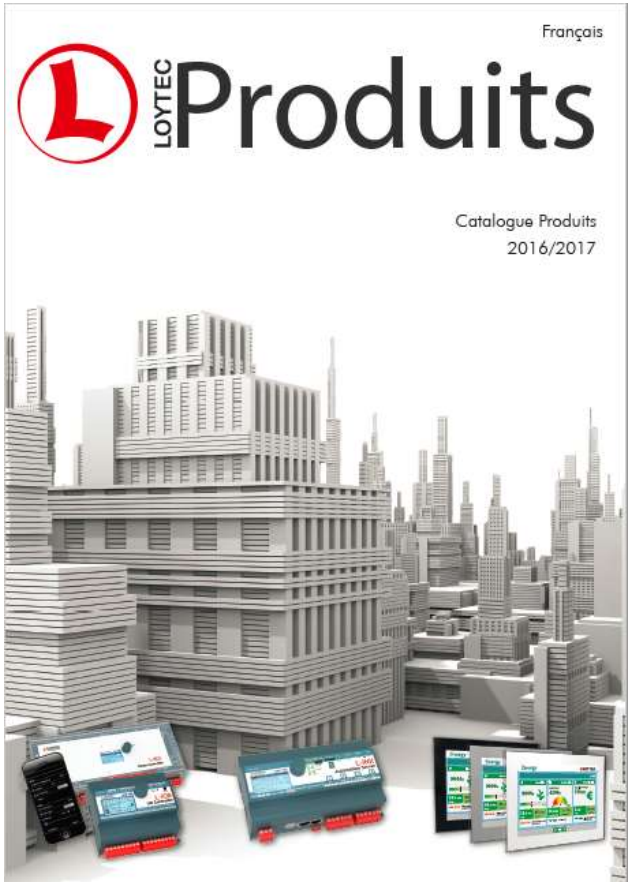

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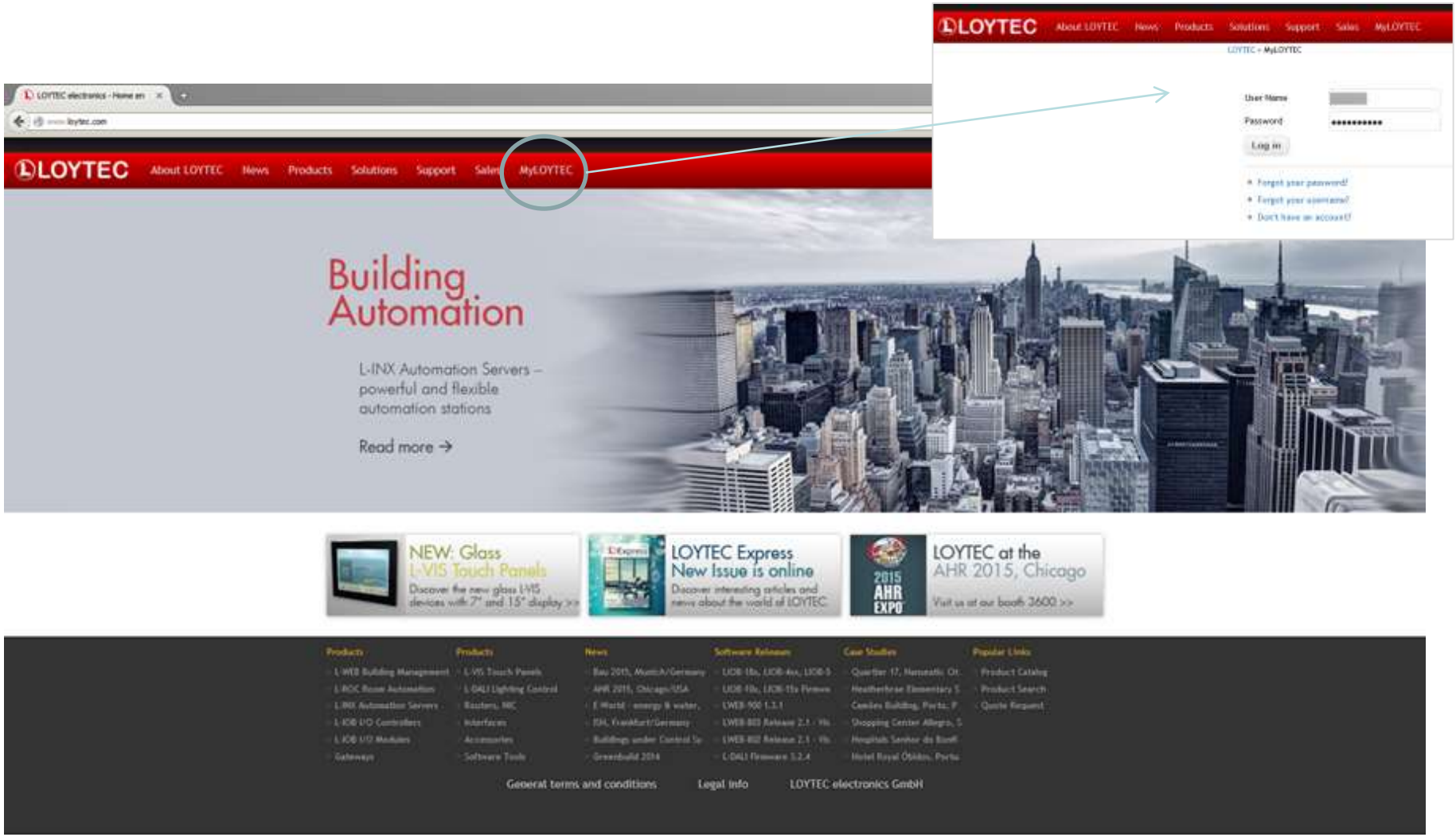

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