

CONNECTIVITY GEAR

MPE 2014 Berlin

CHiP-N-STRIPE



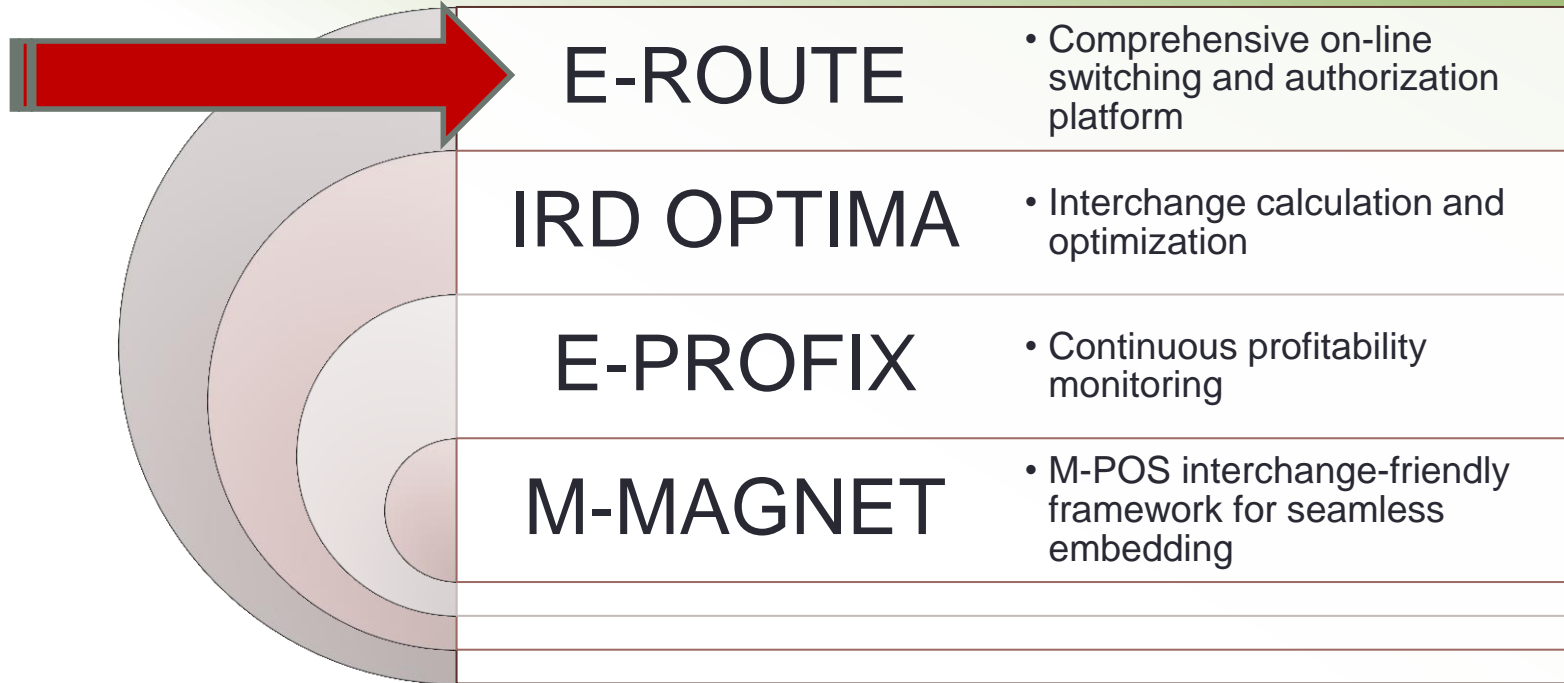
Headquartered in Brussels, the group is focused on delivering the project management and personalized development services for processing-enabled companies.

The first bank-card oriented processing solution has been developed by our team members in 1991.

There is a niche for professional services in the area of high-end tuning of running systems, organized totally transparent to the end-user and 100% neutral to its existing vendor, so most of our methodologies and products primarily address this sector.

Our emergency team arrives, confronts and resolves the problem or runs the project using methodologies ranging from the EU Commission approved project cycle management guidelines to the end-user own procedures.

Key Products



E-ROUTE

The screenshot shows the eRoute console interface for localhost:7676. The interface is divided into several sections:

- Navigation:** On the left, there are tabs for "Connection", "Modules", "Log", and "Configuration".
- Module List:** A table with columns "Module", "Status", and "Log Level".
- Control Panel:** On the right, there are buttons for "Start/ Stop", "Pause/ Restore", and "Reload config". Below these is a "Log level:" slider ranging from OFF to ALL, with markers for S, W, I, F, and F.
- Log Window:** At the bottom, a scrollable log window displays system messages.

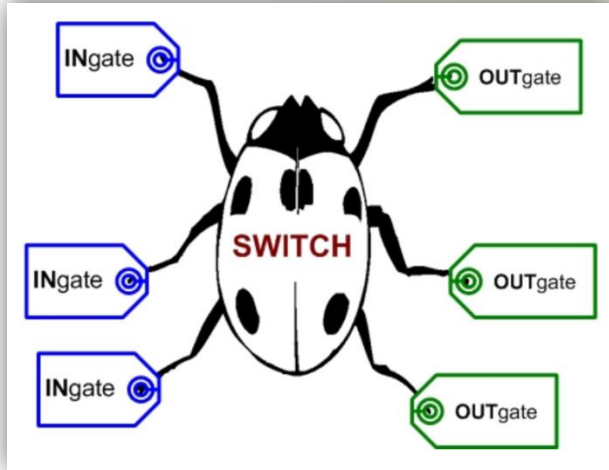
Module	Status	Log Level
AMEX	Down	INFO
ATM_In_I	OnLine	INFO
ATM_In_II	Down	INFO
CompassP_host2host	OnLine	INFO
HSM_Cluster	OnLine	INFO
HSM_SafeNet_102	Paused	INFO
HSM_SafeNet_103	Down	INFO
LogPublisher	OnLine	INFO
ModuleManager	OnLine	INFO
Switch	OnLine	INFO
VisaNet_Primary	Down	INFO
VisaNet_Secondary	OnLine	INFO
Way4_host2host	OnLine	INFO
XML_In	Down	INFO

```
01:23:33.625|SEVE|HSM_SafeNet_103|org.h2.jdbc.JdbcSQLException: База данных уже используется: "I
Database may be already in use: "Locked by another process". Possible solutions: close all other
01:23:33.630|INFO|HSM_SafeNet_103|Module state changed to Down
01:23:33.636|INFO|HSM_SafeNet_103|Process stopped
01:23:53.771|INFO|ModuleManager |Command 'Pause' for module 'HSM_SafeNet_102' executed.
01:23:53.784|INFO|HSM_SafeNet_102|Pause command received
01:23:53.786|INFO|HSM_SafeNet_102|Module state changed to Paused
01:24:22.498|INFO|ModuleManager |Module 'LogPublisher' started
```

E-ROUTE - what?

Message Router	<ul style="list-style-type: none">• VISA MasterCard Amex China Union Pay
Message Transformer	<ul style="list-style-type: none">• Dual Message \leftrightarrow Single Message• Vendor ISO-8583 dialects
Message Processor	<ul style="list-style-type: none">• STIP• Core Issuer Authorizer
Legacy Extender	<ul style="list-style-type: none">• Was for EMV, PIN-online• Going to be for Tokens
Emerging Projects	<ul style="list-style-type: none">• Card-less ATMs – “cash-by-code”
Professional Test Engine	<ul style="list-style-type: none">• Stress-testing

E-ROUTE – what?



The minimal system application set consists of the following principal parts:

- IN Gate– a module to interface the source of ‘incoming’ messages – ATM or POS concentrator, for example

- SWITCH – a module, responsible for routing logic

- OUT Gate – a module to interface one of the target bankcard networks like Visa or MasterCard

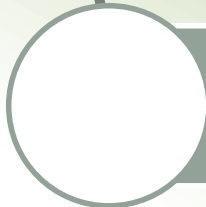
E-ROUTE - what?

```
2013/09/07 06:44:06|INFO|Way4OUTGate
0000: 3038 3130 8220 0000 0200 0000 0400 0000
0010: 0000 0000 0907 0644 0640 0100 3030 0301
2013/09/07 06:44:06|INFO|Way4OUTGate
```

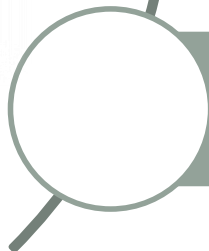
```
<isomsg>
  <field id="0" value="0810"/>
  <field id="7" value="0907064406"/>
  <field id="11" value="400100"/>
  <field id="39" value="00"/>
  <field id="70" value="301"/>
</isomsg>
```



Every Request message is transformed to the internal system format by IN gate, who applies a set of transition rules to transform each request if necessary

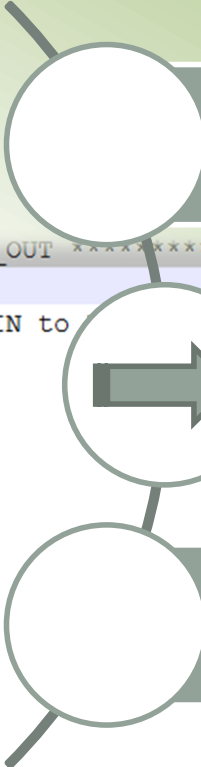


IN gate routes the to the switch, which is responsible to route it to the target Out gate or to the neighbor E-ROUTE system



To be flexible in rules, the system uses its internal language called MPL, born and optimized especially to process messages, talk to HSMs and supports jdbc-enabled databases

E-ROUTE - what?



Every Request message is transformed to the internal system format by IN gate, who applies a set of transition rules to transform each request if necessary

```
<!-- route from AZEISS_DIS_IN to AZEISS_W4_OUT ***** -->
```

```
<RULE>
```

```
<RULE_TEXT>= IN:routeRule = "AZEISS_DIS_IN to
```

```
<GATE_LIST>
```

```
<GATE>AZEISS_W4_OUT</GATE>
```

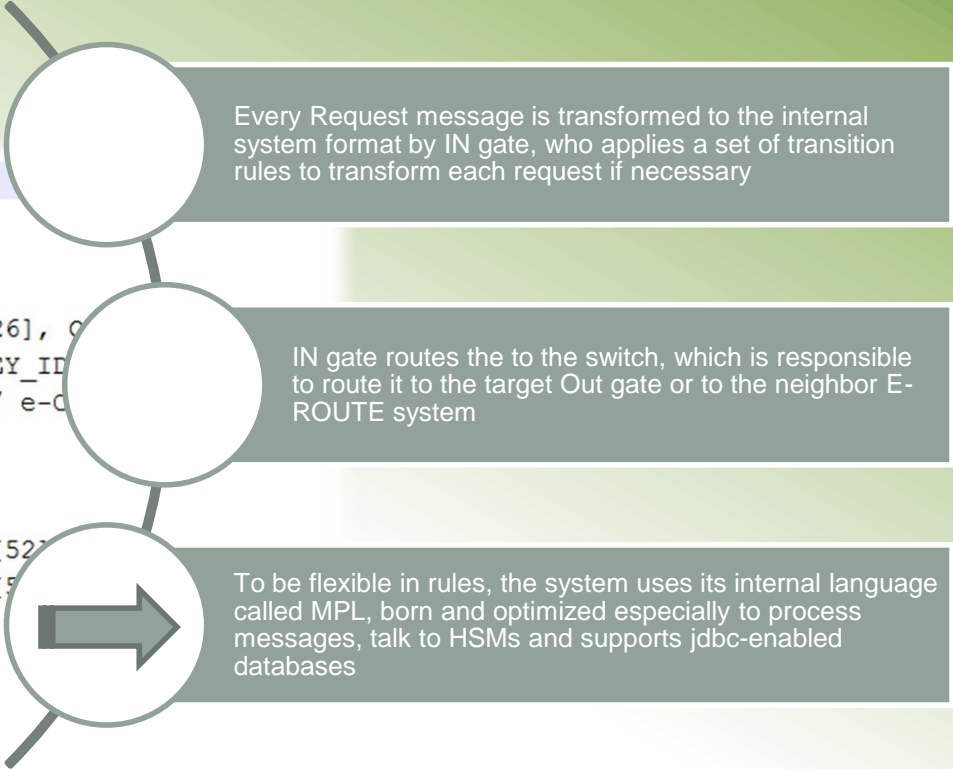
```
</GATE_LIST>
```

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E-ROUTE - what?

```
IF ( IN:M[0]:[0] = "1100" ) {  
  OUT:M[0]:[7] = now("MMddHHmmss");  
  OUT:M[0]:[11] = now("ss0SSS");  
  OUT:M[0]:[12] = now("yyMMHHmmss");  
  OUT:M[0]:[37] = now("yyDDDHHmmSSS");  
  OUT:M[0]:[52] = calcPinBlock( OUT:M[0]:[26], 0);  
  OUT:M[0]:[53] = "0000010001000000"; // KEY_ID  
  if (substr(OUT:M[0]:[22],1,2) = "U") { // e-ROUTE  
    removeField(OUT:M[0]:[52]);  
    removeField(OUT:M[0]:[53]);  
  }  
  info( "=== self-made f52 = " + OUT:M[0]:[52]);  
  info( "=== hand-made f53 = " + OUT:M[0]:[53]);  
}
```



Every Request message is transformed to the internal system format by IN gate, who applies a set of transition rules to transform each request if necessary

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E-ROUTE – why?

The most often introductory for projects where E-ROUTE has been chosen as a platform

- The financial expenses on the IT-design need to be minimized
- The project is not super-large ¹⁾, one among several in the portfolio of the customer, the solution needs to be launched quickly
- The client cannot divert its own experts; however the project must be implemented at a high level of expertise
- The client's own testing facilities are limited, but the comprehensive stress-test is a must

1) The banks often need to make a local project associated with a non-data-intensive on-line exchanges (up to 2M transactions per day, with a peak of 100 TPS)

E-ROUTE works!

The objective of this system is to route and transform messages. Therefore

- this aspect is refined the most
 - Therefore **it works!**
- the system has a limited default set¹⁾ of supplementary features
 - Therefore **it works!**

1) Turn the page

E-ROUTE unlimited

The **limited default set** of features **is not a limitation**

- The best clothes are sewed “sur mesure”
- Almost any additional functionality can be added, if needed(!) and even in-house(!) by using either
 - **MPL** – an Internal own scripting language
 - **Groovy** – a Public dynamic language for the Java platform
 - **Jdbc**-enabled databases
- Can be incorporated into the company management tools (HP BTO (OpenView), ..) via core xml-based API

E-ROUTE Philosophy

E-ROUTE is	Because (immodestly)
• ENGINE	It serves the useful motion
• TOOLSET	It builds the exact end-user solution with minimum or null functionality overhead
• ART	The top technology used by top masters
• BUSINESS	It works!, been probably the best in ROI and TCO

E-ROUTE is an Engine

Written in Java, it is a **scalable cross-platform Engine**

- Running on Intel NUC (cigar-box size EUR 250,-computer unit) it serves the supermarket chain by connecting cash registers to the acquirer.
- Running on Sun SPARC (cost-effective extra-powerful mission-critical), it serves the entire network, providing an access to national or worldwide bankcard networks.

E-ROUTE is a Toolset

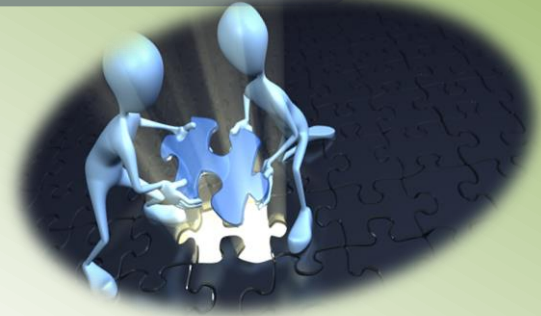
Adjustable building blocks contain the various functionality for bankcard connectivity.

- ISO-8583 dialects analyzer
- Crypto-hardware interfaces to single-unit and cluster HSM solutions
- Balance loading
- EMV data variances
- TLV manipulations of almost every existing vendor behavior
- M-MAGNET server engine for effective POS-2-HOST networking, including necessary key infrastructure elements to manage PIN-pads or similar merchant crypto equipment

E-ROUTE is an Art

«**Sur Mesure**» - its a pleasure to be a tailor

- The best clothes are sewed and by best tailors
 - The best clients visit best tailors
 - The best fabric is used by best tailors
-
- Well-done Java 8 apps for banking industry made by Masters



E-ROUTE is a Business

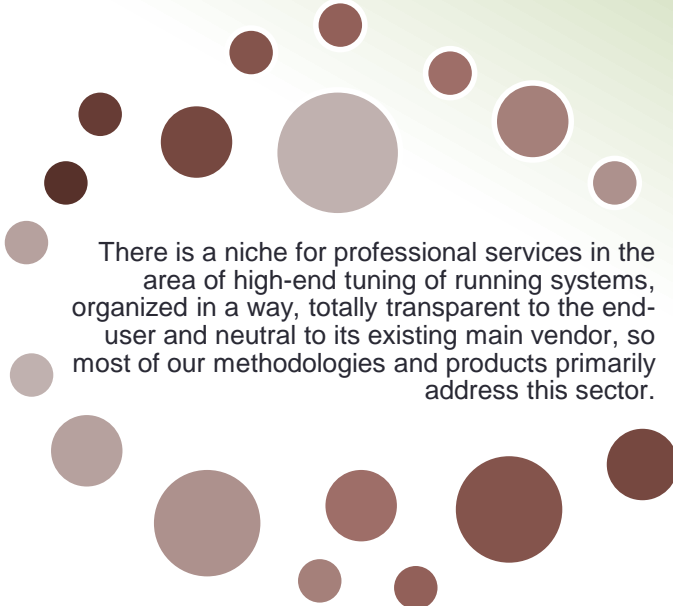
The **most ROI¹⁾-effective on-line solution** is made or, at least, deeply tuned for every particular customer

- Made “*sur mesure*” – end-user never pays the license and maintenance for features that are not used → TCO²⁾ is optimized
- E-ROUTE customer-oriented on-line system can be assembled, of course, not in hours, but, realistically speaking, within several weeks
- We promote it saying “*HAUT COUTURE for the price of PRÊT-À-PORTER*”


1) Return Of Investment

2) Total Cost of Ownership

Professional Services



There is a niche for professional services in the area of high-end tuning of running systems, organized in a way, totally transparent to the end-user and neutral to its existing main vendor, so most of our methodologies and products primarily address this sector.



Our emergency team arrives, confronts and resolves the problem or runs the project using methodologies ranging from the well-known EU Commission approved project cycle management guidelines to the end-user own procedures. The team leaves leaving behind all the knowledge and sources, making it look as if a local user team did the job.

Non-stop Maintenance

VI & MC bi-annual release management

Open-source and source management

On-demand modifications & customisations