

# Romanian State Treasury Electronic Payment System RoSTEPS

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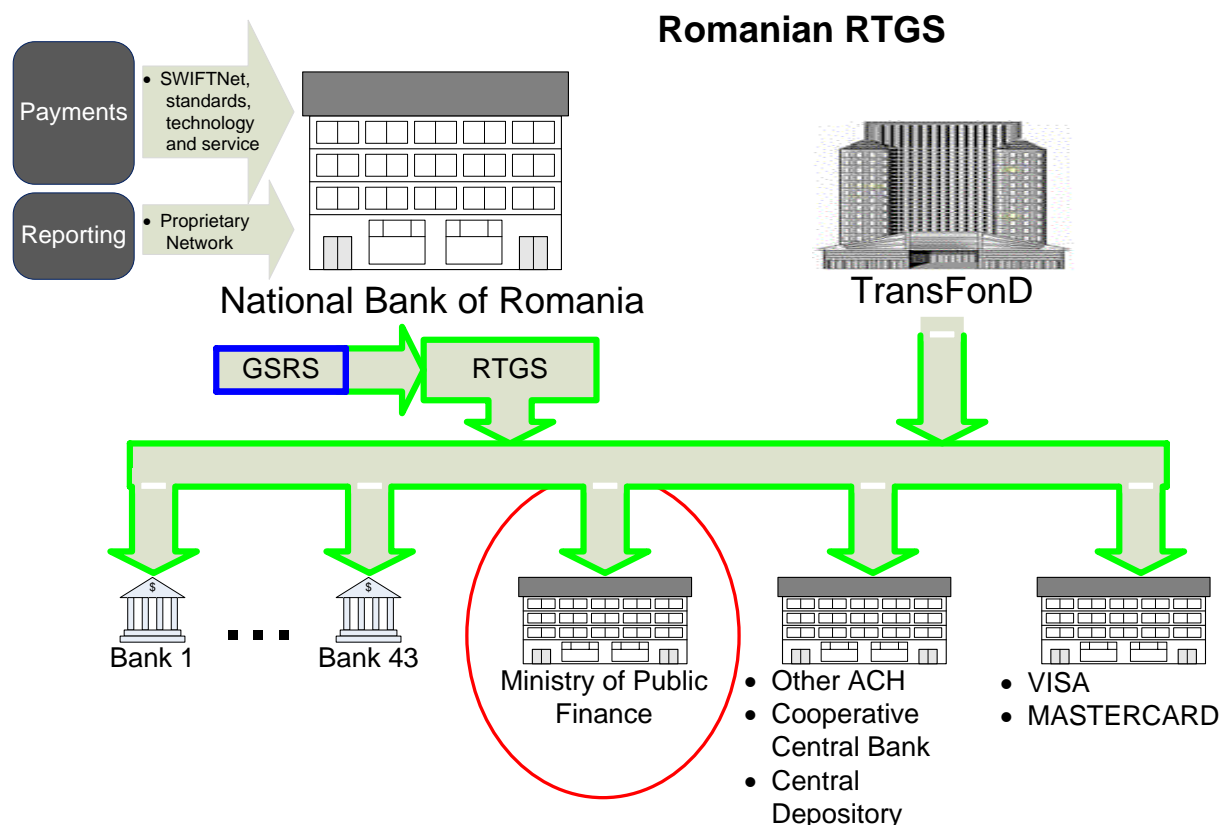
# The effectiveness of banking standards compliance @ Ro State Treasury

## Introduction - the Romanian Electronic Payment System

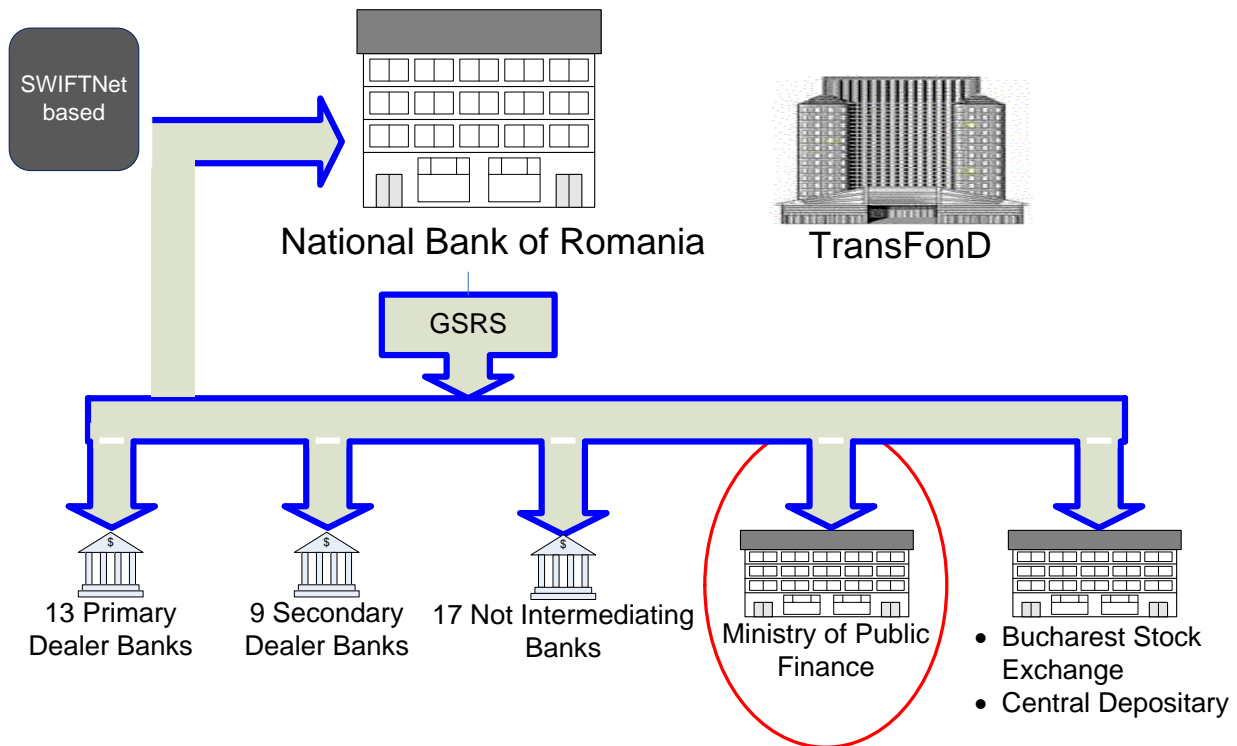
Apart of being the last European country which adopted (in 2005) an Electronic Payment System (EPS), Romania has the 'late comer' advantage - to have the latest solutions and technologies (e.g. xml-based). The architecture of the Romanian EPS comprises all the components - RTGS (ReGIS), ACH (SENT) and GSRS (SaFIR). Last autumn the debit instruments (checks and promissory notes) processing subsystem was also launched. The RTGS and GSRS systems are running on SWIFTNet, while ACH is running on a proprietary network (TFDnet).

We account participating in the RTGS, beside the 43 commercial banks (most of them shareholders in TransFonD - the Romanian CSM), also the Central Depository, Visa, MasterCard and the Romanian Ministry of Public Finance (MoPF). If one looks to the GSRS system, MoPF is also a participant, together with the Stock Exchange, the Central Depository, primary dealers, secondary dealers and the representatives of non-dealers banks. The same situation occurs with ACH.

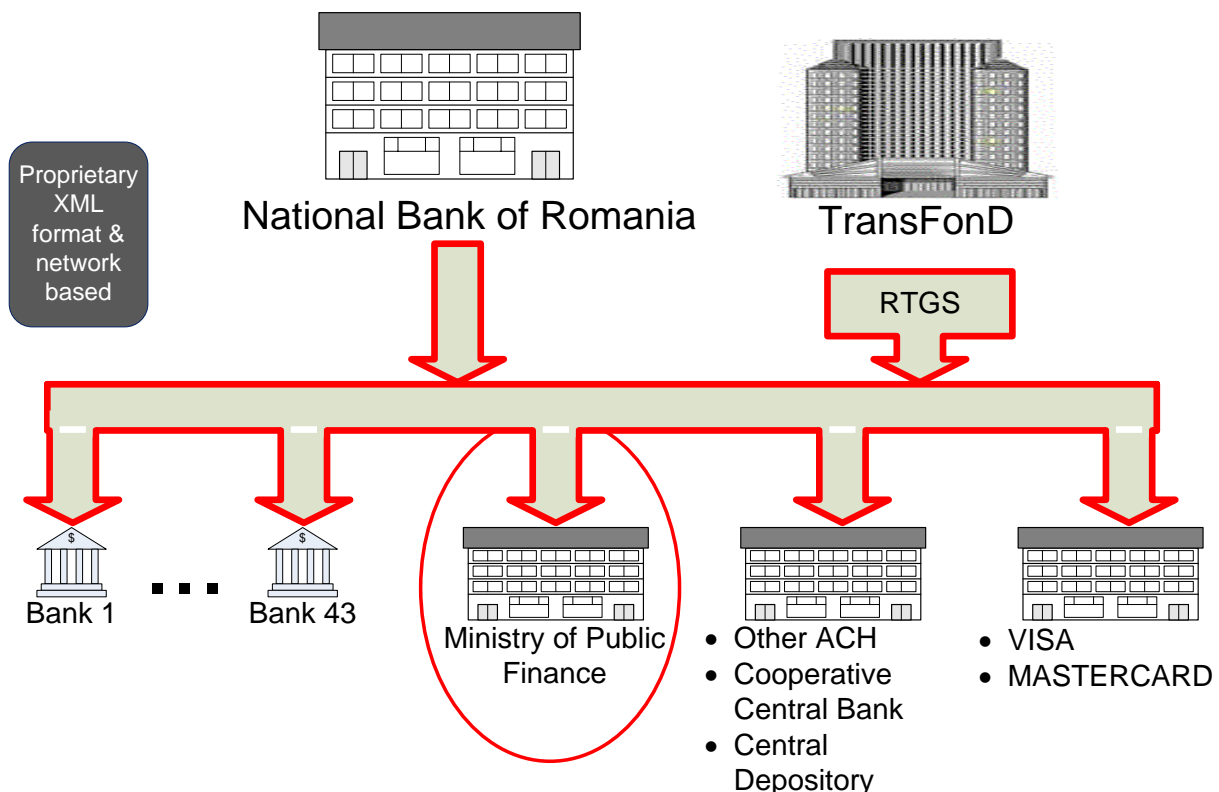
The three Romanian EPS subsystems are presented in the following figures:



## Romanian GSRS



## Romanian ACH



Euro adoption as announced by the Romanian Central Bank is predicted for 2015. Meanwhile, the SEPA (Single Euro Payment Area) standards were implemented and presently the proposal to make an intermediate step by implementing 'SEPA for domestic currency' (that would create conditions for the future SEPA on Euro to work without any major technical migration problems) is analysed.

## **The State Treasury (TREZROBU) Payment System – RoSTEPS**

The **R**omanian **S**tate **T**reasury **E**lectronic **P**ayment **S**ystem (RoSTEPS) was deployed on June 2005 to process electronically the Romanian Ministry of Public Finance daily payments and collections. In the first year RoSTEPS was automatically handling and processing a total volume of about 30 mil. transactions, replacing the previous manually intensive clearing and settlement mechanism. RoSTEPS represents the new Romanian State Treasury accounting system, based on the back-office application 'Trezor' and the payment management system 'qPayIntegrator'.

RoSTEPS, architected around qPayIntegrator payment suite, provides several innovative features, like the adaptive routing mechanism, message enrichment, outstanding throughput (six times higher than a general middleware solution non-optimized for financial transactions processing) for end-to-end non-volatile transactions, embedded technological reconciliation of financial messages, real-time resilience at transaction level, possible duplicate detection and exceptions investigation, liquidity management, continuous accounting reconciliation and competitive transactions reports.

Additionally, the implementation of an advanced monitoring system, both at financial transaction level and IT platform level, proved beneficial to ensure proactive environment management and an effective asset to reduce the operational risk.

The system was recently enhanced to provide SEPA (Single Euro Payment Area) compliance on both SCT and SDD transactions. Also, a forecasting tool was added - for monitoring all the activities and for allowing quick decisions, essential in a market dominated by high financial volatility; this tool proved to be of utmost importance during 2008 and later, when the financial market context changed unexpectedly and rapidly, and basically eliminated the entities that did not have a quick response time to the new market trend, through proper and safe decisions.

Presently the Romanian State Treasury is analysing the implementation of the following RoSTEPS enhancements:

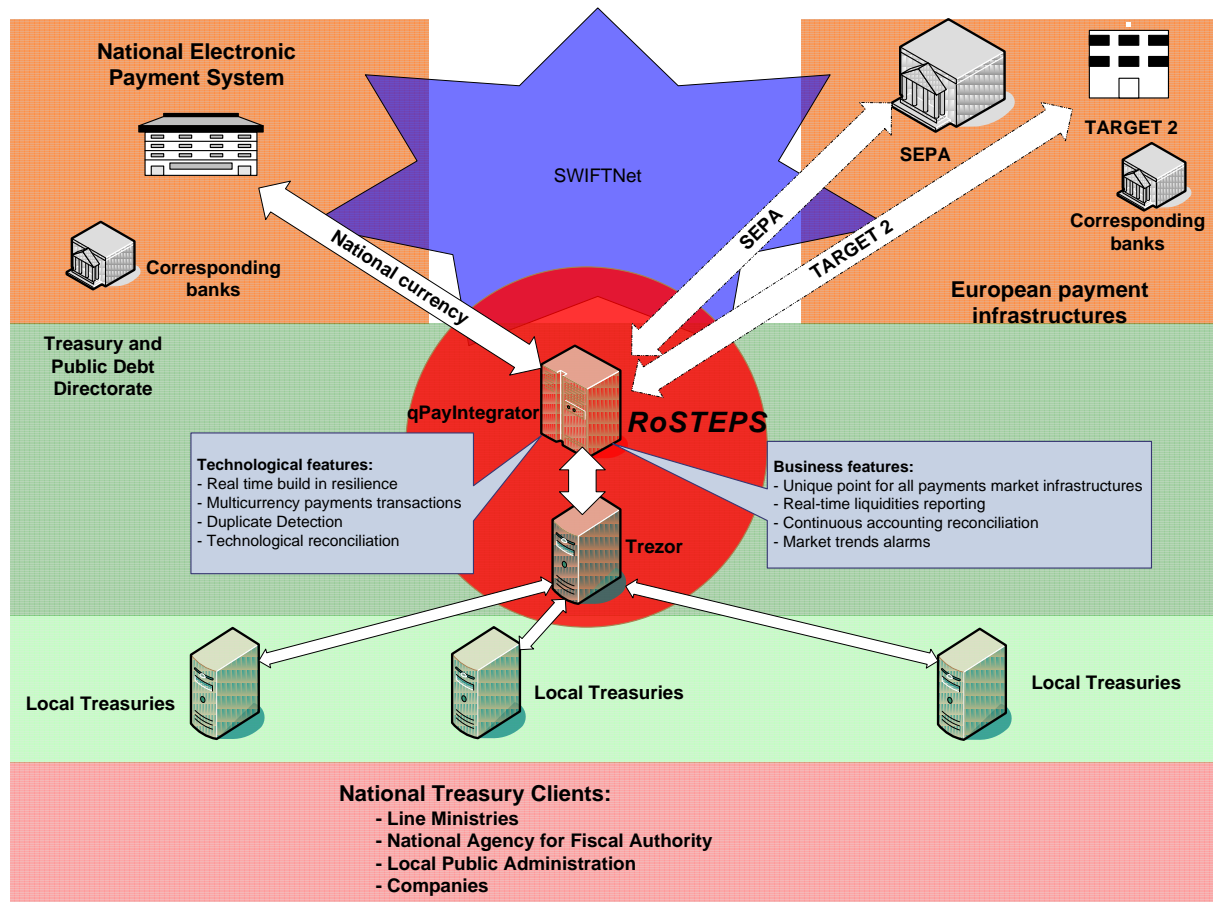
- government bonds auctioning to improve the automation of the public debt related business;
- EU & government funds allocation to the associated beneficiaries and financial execution of the related projects;
- pensions & wages flow rationalisation & change to comply SEPA formats.

Given the centralized architecture of RoSTEPS payment engine and the high level of STP, almost the entire transactions flow is performed online in real-time. All treasury clients are directly placing their payment orders to the Treasury, which processes and consolidates them to the central payment engine. The Treasury collections are then routed, according to their reference (IBAN account and fiscal number) to the proper clients accounts. The funds transfers (payments and collections) are centralized, providing for cash management and forecast features.

A significant part of RoSTEPS success is due mainly to using banking instruments and standards:

- adoption and processing of both MT and MX messages
- usage of EU identification codes such as BIC, IBAN and ISIN (Annex)

- business standards: SWIFT standards, services and technology (RoSTEPS is implementing the same level of data quality - security, authenticity, reliability, uniqueness - as SWIFT provides to its customers), EPC (SEPA Credit Transfer Scheme, respectively SEPA Core DD Scheme), ECB, ISO (ISO 20022)
- IT industry de-facto standards: relational database management system (Oracle), highly reliable messaging transport layer (IBM WebSphereMQ), presentation layer (IBM WebSphere Application Server)



## RoSTEPS Technical Features

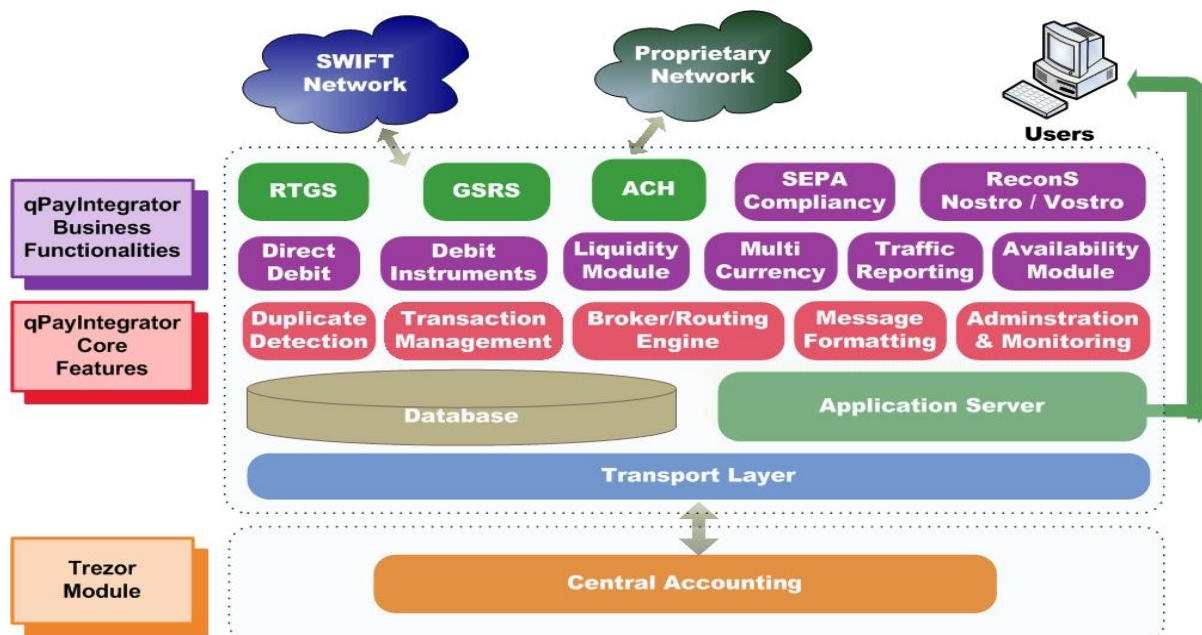
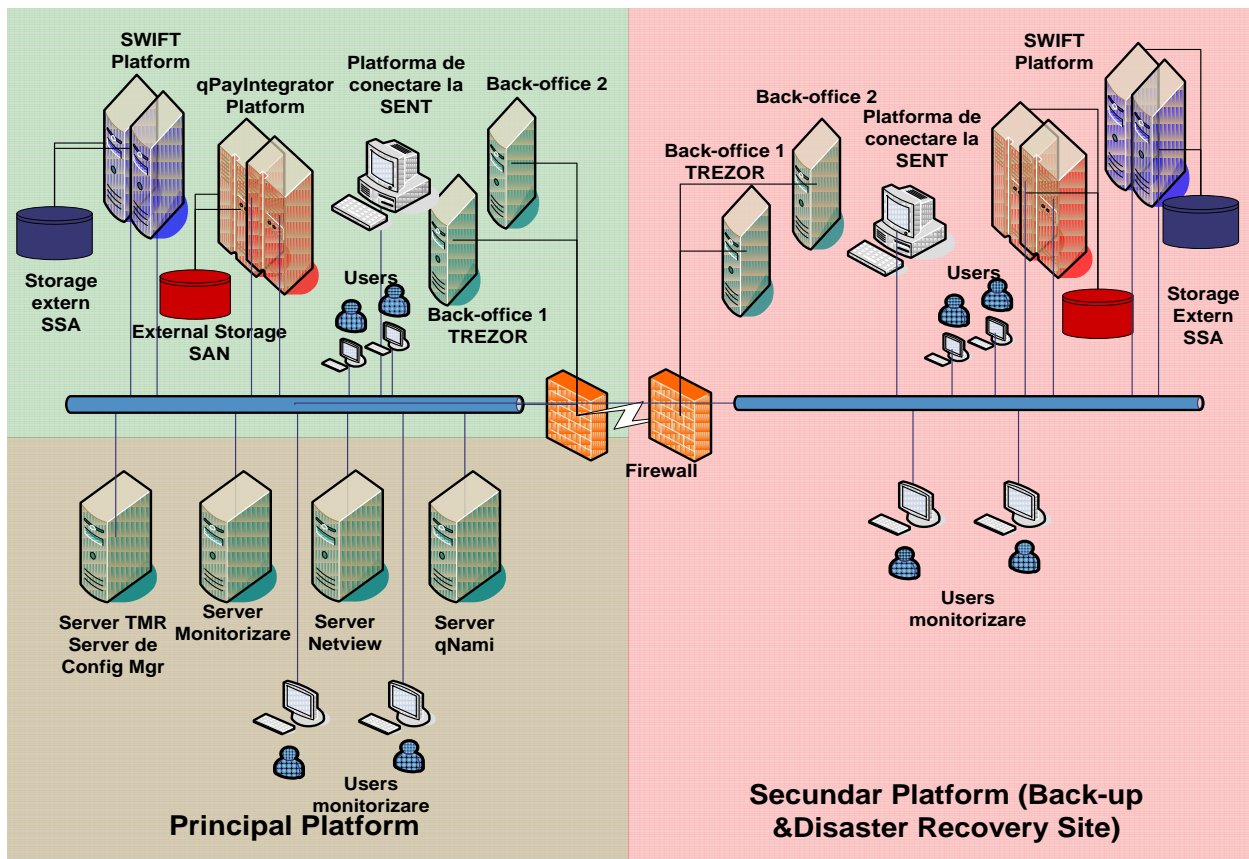
The technical architecture of RoSTEPS provides for STP, thus eliminating the manual processes, with direct impact in increasing efficiency, throughput and minimization of operational risk.

RoSTEPS is implementing the same level of data quality (security, authenticity, reliability, uniqueness) as SWIFT provides to its customers. Thus at transaction level:

- the commitment is done to their destinations only upon receiving all layers of confirmation
- possible duplicates are detected from all possible incoming sources
- the accounted business transactions are confirmed by an advanced reconciliation tool and the exceptions are investigated
- the transactions are monitored using a complex tool, which reports possible bottlenecks, performance degradations or errors

RoSTEPS was designed to comply not only with the applicable business standards: SWIFT, EPC (SEPA Credit Transfer Scheme Inter-Bank Implementation Guidelines v3.2 and SEPA Credit Transfer Scheme Rulebook v3.2 for SCT, respectively SEPA Core DD Scheme Inter-bank Implementation Guidelines v3.3 and SEPA Core Direct Debit Rulebook v3.3 for SDD), ECB, ISO (ISO 20022), but also with IT industry de facto standards: relational database management system Oracle, highly reliable messaging transport layer – IBM WebSphereMQ, presentation layer – IBM WebSphere Application Server

The general architecture of the main applications is presented below:



## Awards, communication approach and the main dissemination actions

- a. Conference "Innovation and quality in the public sector", 1<sup>st</sup> Award for Pillar 1 "Increasing efficiency of public services through innovative methods", 2009
- b. Good Practice in the framework of the 4th European eGovernment Awards 2009, <http://www.epractice.eu/en/awardsfinalists2009>
- c. "e-Support" award - e-Finance 2008 Award Gala <http://www.finmedia.ro/conferences/conferinta.php?cod=galaprmefinance&editie=6&comanda=prezentare>
- d. "e-Success" award - e-Finance 2007 Award Gala <http://www.finmedia.ro/conferences/conferinta.php?cod=galaprmefinance&editie=5&comanda=prezentare>
- e. e-Finance Conference, organized on the 16<sup>th</sup> of March 2009
- f. e-Finance Conference, organized on the 17<sup>th</sup> of November 2009
- g. e-Finance Conference, organized on the 29<sup>th</sup> of April 2009
- h. Sibos 2008 - Special Interest Session on '*Public Institution in SEPA Context*', September 2008, Vienna, Austria ([Sibos 2008 Special Interest Session](#), and [Sibos 2008 - Special interest sessions - reflected by SWIFT](#))
- i. e-Finance Conference, organized on the 9<sup>th</sup> of May 2008