## Appendix 2

### Project Working Group Technical Proposals

# I. Inception Report



# II. Solution for electronic processing of debit instruments

# I. Inception report

## 1. Introduction

This document outlines the SPI Project work approach, aiming to identify a solution for the automated processing of debit payment instruments that should be accepted and signed in by the entire Romanian banking system. This project is developed as part of the public – private partnership for the modernisation of the Romanian financial sector (the Special Projects Initiative – SPI), established by the National Bank of Romania, the Romanian Banks' Association, the Ministry of Public Finance and the World Bank's Convergence Programme.

According to the Terms of Reference, the objective of this project is: *„To prepare a document that would represent a solution acceptable to all stakeholders for transition to final solution on paper-less check and other debit instrument processing on a time-compressed schedule."*

The discussions with the various stakeholders lead to the necessity to extend the project scope so as to also include the proposals regarding the amendment of the primary legislation, as well as of the relevant secondary regulations. In order to reflect these suggestions, the project Terms of Reference will be accordingly amended.

For this purpose, this document proposes a series of subsequent activities, after the solution for the automated processing of debit instruments has been identified, so that the steps to be followed by all parties involved in the implementation of the final solution and the implementation activities sequence be extremely clear. This approach requires the terms of reference of the project to be changed.

## 2. Objectives

The objectives of this document are to establish and clarify certain aspects relating to:

- how the project activities are to be carried out and the responsibilities of the involved parties
- the proposals concerning the change of the Terms of Reference
- the project planning and organisation and the subsequent implementation stages of the identified final solution.

## 3. Project organisation

### 3.1. Project Working Group

The Project Working Group, appointed through the intermediation of the World Bank and the Romanian Banks Association, is made up by the following:

1. Mirela Palade – Project Manager
2. Constantin Rotaru – Deputy Project Manager, Deputy Executive Manager, Banca Comercială Română
3. Ruxandra Avram – National Bank of Romania, Regulation and Licensing Division
4. George Carabasan – Director, Alpha Bank
5. Maria Sheikh Ahmad – Director, Interbank Payments System and Debit Instruments Division, Payment Instruments and Products Department, BRD Groupe Société Generale
6. Liliana Popa/Ionel Dumitru – TRANSFOND
7. Mihail Meiu – Director, National Authority for Consumer Protection
8. Irina Zamfirescu – Senior Advisor, Ministry of Public Finance
9. Ileana Cosinzeana Velicu – Methodology Department, Banca Comercială Română

The activity of the Project Working Group is monitored by Ms. Gabriela Tudor, Vice President of Casa de Economii şi Consemnaţiuni – CEC S.A., the SPI Project Owner, appointed by the Romanian Banks' Association.

The Working Group is also supported by the SPI Committee technical secretariat, i.e. Ramona Bratu, SPI Director, Banking Products and Services and Oana Nedelescu, SPI Director, Analyses and Policies.

### 3.2. SPI Steering Committee

The project deliverable will be signed off by the SPI Project Committee:

- Florin Georgescu – First Vice Governor, National Bank of Romania
- Radu Gheţea – Chairman, Romanian Banks' Association
- Alice Bîtu –State Secretary, Ministry of Public Finance
- Luigi Passamonti – Convergence Head, World Bank
- Shkelqim Cani – Country Senior Advisor (Convergence), World Bank

### 3.3. Project Technical Team

Considering that all members of the Working Group are senior executives with their respective organisations, which will not allow them a full-time performance in reaching the project objectives, as well as the short time span allocated to identifying the final solution for the automation of the debit instruments processing, the creation of a Project Technical Team is deemed necessary, whose members should be appointed full-time of part-time to the project.

For this purpose, it has been proposed that the Project Technical Team be ensured by TRANSFOND S.A.; its role would be to draft all the documents under debate.

The TRANSFOND Project Technical Team will be made up by:

- Ionel Dumitru – Head of SENT Division
- Liliana Popa – Expert, Quality Assurance and Information Security
- Angelica Apetrei – Expert, SENT
- Bogdan Năstase – Expert, Strategy Department
- Doina Cristea – Business Analyst
- Cornel Dorobăț – Head of IT Division

### 3.4. Project documentation flow

All project documentation shall be drafted by the Project Technical Team, under the Project Manager's direct supervision. The Project Manager shall distribute the project documentation to the members of the Working Group.

After the documents have been debated by the Working Group, in a first stage, they will be submitted, for consultation purposes, to the entire banking community. The opinions received from the commercial banks will be included, to the extent possible, into the final versions of the project documents subjected to consultation.

The Project Technical Team shall also submit to the ARB and the SPI Committee, in a separate document, the opinions that were not included in the final documents, so that decisions cam be made by reviewing all the arguments or issues that were raised by the commercial banks.

### 3.5. Collaboration with third party entities

In order to coordinate the activities related to establishing a solution for the automation of debit instruments processing and to avoid potential overlaps or proposals of divergent solutions, the project team shall collaborate with the Romanian Banks' Association, more precisely with the ARB payments working group (made up by representatives of the commercial banks).

In order to assess the impact of the solution of electronic processing of debit payment instruments, the project also benefits from the assistance of the Convergence Programme.

During the project development, should certain actual instances occur, cooperation shall be sought from those institutions that will be able to help in reaching this project's objectives.

### 3.6. Roles and responsibilities

- **SPI Project Steering Committee**

Its main responsibilities and duties are:

- to approve/sign off the project deliverables
- to approve the extention of the project scope proposed by project team
- to approve changes to the project timetable
- to support the process of amending the regulatory framework needed for the automation of the debit instruments processing
- to support the implementation of the solution adopted by this project (the automation process of debit instruments processing)

- **The Project Manager**

The daily project management activity is ensured by the Project Manager, who has the following responsibilities:

- to coordinate the production of project deliverables and other project working documents
- to organise, with the support of the SPI Secretariat, the meetings of the Working Group
- to disseminate the working documents to the commercial banks, ARB, the National Bank of Romania, the World Bank, SPI Committee, other institutions in order to receive feedback or approval
- to report on a regular basis to the Project Sponsor.

In the absence of the Project Manager, her duties and responsibilities will be taken over by the Deputy Project Manager. Both the Project Manager, and her Deputy, must keep each other informed on the activities carried out during the time periods they directly coordinate the project activities, in order to avoid potential disruptions of the project activity.

- **The Project Team**

Their main responsibility is to discuss the project deliverables and establish the documents versions that are to be submitted to the banking community for consultation and, afterwards, for approval.

### 3.7. Frequency of meetings

**The Working Group** regularly convenes on a weekly basis, on Fridays, during the first stage of the project and on a bi-weekly basis, during the project second stage. Meetings shall take place at the SPI office at the IBR or at TRANSFOND's head office. The meetings conclusions shall be written down by the SPI Secretariat in the meeting minutes.

**Reporting to the Project Coordinator (Sponsor)** shall be made on a monthly basis by the Project Manager and in her absence, by the Deputy Project Manager. The meetings shall take place at the office of the ARB Project Coordinator (Ms. Tudor).

### 3.8. Project documentation archiving

The project documentation archiving shall be ensured by the Project Manager. Documents are to be kept at TRANSFOND S.A.'s head office. Duplicates of the documents are to be kept by the SPI Secretariat.

## 4. Proposals concerning the modification to the project Terms of Reference

Finding a solution for the automated processing of debit instruments has been an item on the banking community's agenda for a long a time; the issue became stringent once the Automated Clearing House became operational, as maintaining the manual processing of these payments instruments generates losses for all involved parties (the commercial banks and TRANSFOND as well).

There have been various parallel initiatives, but none resulted in an immediately applicable solution, agreed upon by the entire banking community.

In this context, this project's initial objective (*„To prepare a document that would represent a solution acceptable to all stakeholders for transition to final solution on paper-less check and other debit instrument processing on a time-compressed schedule."*) and the deadline set for reaching this objective (18 December 2006) will not allow for solving out the core of the problem. **This project deliverable**, in the absence of any technical and functional specifications, as well as of the proposals for amending the legal and regulatory framework, **will not be enough to enable the implementation of the final solution**. Moreover, the specifications and the proposals for amending the legal framework must be correlated, to allow the smooth and sound electronic processing of debit instruments.

In order to solve the core of the problem – the automation of the debit instruments processing – the following are necessary: *(i)* the extension of the project period and *(i)* the extension of the project scope.

**To this end, the following proposals are made:**

- **to include among the project objectives:**
  - **the production of technical and functional specifications of the solution chosen by the banking community**
  - **the production of the proposals for amending the legal and regulatory framework**
- **to organise the project into two stages**

The first project stage is the one described in the initial Terms of Reference and will be completed in December 2006 with the production of the document that outlines the solution for the automated processing of debit instruments.

The second project stage will begin in January 2007 and will be focused on the production of a detailed requirements definition document, as well as of the functional and technical specifications and on drafting the proposals for amending the legal and regulation framework (the cheque law, the law on bill of exchange and promissory notes, technical norms attached to these two laws, other regulations or norms of the National Bank of Romania, etc). These deliverables shall be analysed and agreed with the banks. Functional specifications will be considered as a mandate for kicking off the actual implementation project.

On the second project stage, all details related to the final solution implementation will be virtually set up. The Project Working Group (and the Technical Team, as well) will have to be enlarged and subdivided into two groups:

- one sub-group will deal with the specifications; it will mainly be made up of individuals with economic and technical backgrounds.
- the other sub-group will deal with drafting up the proposals for laws and regulations; it will mainly be made up of individuals with legal and economic backgrounds.

**After the second project stage is completed, the project that develops and implements the solution for the automation of the debit instruments processing can be virtually initiated at any moment, providing the aforementioned legal amendments are passed.**

The Project Activities Planning in Section 5 of this document is based on the supposition that proposals made by the Project Working Group will be approved by the SPI Committee and by the Romanian Banks' Association.

## 5. Project activities planning

A detailed outline of the project development is given in the chart attached hereto. The main project activities are basically the following:

### Stage 1

### 5.1. Project kick-off meeting

The (virtual) start of the project is 25 October 2006, when the first meeting between the Project Sponsor (Ms. Tudor, on behalf of the ARB) and the Project Manager, the Deputy Project Manager and the SPI representative to Romania took place.

On 24.11.2006 the Project Work Group has not been fully set up yet, which might entail certain delays in meeting the proposed deadlines.

### 5.2. The production of the solution for the automation of debit instruments processing

The solution is roughly outlined, without going too much into technical details; these are to be included among the deliverables of the second project stage, i.e. requirements and specifications. The document will at the same time outline the current situation and the proposed solution, including sufficient details so as to enable the commercial banks to assess the impact and feasibility of the implementation of the proposed solution. The proposal will be joined by an assessment of the impact of adopting the solution for the electronic processing of debit instruments.

### 5.3. Consultation with the banking community

The proposal for the automated processing of debit instruments will have to be submitted to the commercial banks in order to obtain their opinion. To the extent permitted by time (to the Project Technical Team and the banks' staff), meetings can be held, as well, in order to introduce the proposed solution.

The banks' opinions will be collected and considered, depending on their acceptance by the entire banking community, when establishing the final solution for DIs processing.

The current project team will keep on working, under the same structure and even under an extended later structure, on establishing the final solution.

### 5.4. Sign-off of the final solution document regarding the automation of the debit instruments processing

The SPI Steering Committee will sign off the deliverable of the first stage of the project, enabling the project to move to the second stage, when the technical details necessary for implementing the solution are to be set out and the legal amendments are to be produced.

**Stage 2**

### 5.5. Production of requirements and specifications

This stage entails a recurring process by the project team and the commercial banks for setting up the details necessary for the implementation of the final solution. This means the production of deliverables both for TRANSFOND and the Participants.

For exemplification, during this stage the team will develop the message formats, interfaces specifications, quality standards for DI imaging, images archiving and retrieval, information flow, processing cut-offs, how the SENT central system will be affected, etc.

### 5.6. Production of proposals for the amendment of the legal and regulatory framework

During the last two years, there were several attempts to draft proposals to amend the cheque law and even the bill of exchange and promissory note law. None of them ended with back-up for the proposals to be approved by the Romanian Parliament.

In order to have a uniform approach on the amendment of the legal framework, a gap analysis should be performed in order to exactly identify what laws and regulations need to be amended and how.

At a first sight, in the absence of a gap analysis, the main legal and regulatory proposals that must be drafted and promoted for approval are the following:

- proposal for the amendment of the Cheque Law
- proposal for the amendment of the Bill of Exchange & Promissory Note Law
- proposal for the amendment of the Technical Norms accompanying the Cheque Law and the Bill of Exchange & Promissory Note Law (Technical Norm 9/1994, Technical Norm 10/1994)
- a draft for the amendment of the SENT System Rules
- amendment or repeal proposal relating to certain National Bank of Romania's regulations (ie Regulation 10/1994).

**Project activities codes:**

| Activity code | Activity Name |
|---|---|
| 1 | Project management and organisation |
| 1.1 | Project Initiation Document |
| 1.2 | Project activities plan |
| 1.3 | PM Meetings |
| 1.4 | Progress reports |
| 2. | Functional, technical and regulatory specifications |
| 3. | Functional and technical specifications |
| 3.1. | Specifications for TransFonD |
| 3.2. | Specifications for Participants |
| 4. | Legal and regulatory framework |
| 4.1. | Cheque Law |
| 4.2. | Bill of exchange and promissory note law |
| 4.3. | Other regulations (technical norms, system rules, etc.) |

# II. Solution for electronic processing of debit instruments

## 1. Introduction

The Romanian interbank payment system is currently made up of the Electronic Payment System (EPS) and the manually-processed paper-based debit instruments multilateral clearing system.

The EPS is made up by:

- ReGIS – the real-time gross settlement system that processes large-value or urgent payment orders
- SENT – the automated clearing house, processing credit transfers and direct debits
- SaFIR – financial instruments deposit and settlement system

The aim of this solution is to automate the interbank clearing of debit instruments, including them into SENT processing, so that the EPS benefits are extended to the entire scope of domestic currency interbank funds transfers.

## 2. Legal framework of debit instruments

Debit instruments and their clearing are regulated in Romania by:

- Law 59/1934 on cheques, amended by Government Ordinance 11/1993, approved by Law 83/1994;
- Law 58/1934 on bills of exchange and promissory notes, amended by Government Ordinance 11/1993, approved by Law 83/1994;
- Framework Norm 7/1994 regarding trading cheques by banks and other credit institutions;
- Framework norm 6/1994 regarding trading bills of exchange and promissory notes by banks and other credit institutions;
- Technical Norm 9/1994 on cheques amended and supplemented by the NBR Circular. 24/1995 concerning the filling in of cheques, NBR Circular. 33/1995 relating to the amendment of certain regulations on payment orders and cheques, NBR Circular 34/1995 concerning the completion, amendment and repeal of certain regulations in the payments and settlements fields;
- Technical Norm 10/1994 on bills of exchange and promissory notes amended by NBR Circular 34/1995 concerning the completion, amendment and repeal of certain regulations in the payments and settlements fields;

- NBR Regulation 1/2001 regarding the organisation and operation of the payments Incidents Office at the National Bank of Romania, as subsequently amended (NBR Circulars 15/2004 and 21/2002 issued to amend Regulation. 1, NBR Regulation 7/2005 issued to amend Regulation 1);
- Order 242 din 10.05.2001 issued by the Governor of the National Bank of Romania referring to the enforcement of NBR Regulation 1/2001 regarding the organisation and operation of the payments Incidents Office at the National Bank of Romania;
- Regulation 1/1995 concerning the principles and organisation of technical validation of cashless payments and settlement systems, as amended by the NBR Circular. 24/2001 regarding the repeal of certain provisions of the National Bank of Romania's Regulation 1/1995 and of the National Bank of Romania's Governor Order 37/1997;
- NBR Regulation 10/1994 regarding the multilateral clearing of cashless paper-based interbank payments, as subsequently amended (NBR Circular. 20/2005 issued to amend the NBR Regulation 10/1994 regarding the multilateral clearing of cashless paper-based interbank payments);
- NBR Regulation 1/2005 governing the payments systems ensuring funds clearing, amended by the NBR Regulation 9/2005 issued to amend and supplement the NBR Regulation 1/2005 on payments systems ensuring funds clearing.

## 3. Paper-based debit instruments clearing

Paper-based debit instruments[1] (cheques, bills of exchange and promissory notes), regardless of their value, are cleared through the multilateral clearing system for interbank cashless paper-based payments; the system is managed by TRANSFOND S.A., as the agent of the National Bank of Romania.

The current debit instruments clearing system is made up of 42 clearing houses, set up within the 41 TRANSFOND county branches and the organisational unit from TRANSFOND's head office.

### *Participants*

The Participants in the clearing system are credit institutions licensed by the National Bank of Romania.

Each Participant is represented to each clearing house by a single bank unit from the relevant county seat town or, in case the Participant has no local branch unit in that county seat town, the Participant is represented by any other designated unit from the relevant county.

### *Collateral*

[1] The ones used in the interbank circuit.

In order to participate in the clearing process, Participants must set up unilateral collateral in *Lei*, for National Bank of Romania's benefit; the set-up collateral must reach at least the level calculated and notified to the Participants by TRANSFOND S.A., as National Bank of Romania's agent. The collateral set up for the paper-based system is regulated by the National Bank of Romania's Regulation 1/2005; the necessary collateral is calculated statistically, for a pre-determined period and not for each clearing session.

Unilateral collateral may be set up as:

- funds, as "reserves" in the Participants' settlement accounts opened with the real-time gross settlement system (ReGIS) and/or
- financial instruments eligible for setting up collateral.

Collateral is executed by the National Bank of Romania only if the funds available in the Participants' settlement accounts do not cover their net debit positions resulted from the multilateral clearing.

***Stages of paper-based instruments clearing***

Multilateral clearing of paper-based debit instruments implies three distinct processing stages:

- *Preparation of the clearing session*

This stage is carried out outside the clearing houses and consists in the preparations preceding the clearing sessions, performed by the credit institutions' local units:

- grouping of DIs by receiving bank units
- filling in the clearing paper forms (cumulated collection requests, deposit slips, payment refusals, refusal reasons, etc).
- setting up the DIs batches that will be physically presented at the clearing houses, to the receiving bank units, before the value date.

- *DIs validation session*

The role of the clearing houses in the DIs validation session is to make available to the Participants a location where they can exchange documents.

- *The current clearing session*

During clearing sessions, Participants submit DI amounts for clearing by filling in the clearing form. By centralising the Participants' clearing forms to one single clearing house, the clearing officer (*inspector de compensare*), member of TRANSFOND S.A.'s staff, fills in the cumulative clearing form for that particular clearing house. The form includes the Participants' net multilateral positions, i.e. the outcome of the clearing carried out by that particular clearing house.

- *Clearing circuits*

Clearing houses members must ensure the DI processing by entering them into one of the twelve interbank circuits, complying with National Bank of Romania's Regulation 10/1994 regarding multilateral clearing of paper-based cashless interbank payments:

- 4 local circuits (the beneficiary and the payer have opened accounts with bank units from the county seat town);
- 3 intra-county circuits (the beneficiary and the payer have opened accounts with bank units from the same county);
- 5 inter-county/national circuits (the beneficiary and the payer have opened accounts with bank units located in different counties).

The duration of the circuit flow is maximal and varies between 3 bank operating days (the shortest local circuit) and up to 9 bank operating days (the national circuit).

*The clearing process*

Although there are differences between the various types of debit instruments, including the due payment dates, in the interbank clearing and settlement process they follow the same mechanism:

- The beneficiary (or the last endorsee) submits the debit payment instrument to the bank unit with whom they hold their current account (sending bank unit), along with a deposit slip filled in with their own data;
- The debit payment instrument, along with the deposit slip, is forwarded to a beneficiary's bank unit that takes part in the interbank clearing (beneficiary' clearing bank unit);
- The DIs and the related collection requests are presented during the validation session by the beneficiary's (last endorsee's) bank unit, grouped by paying bank;
- The payer's clearing bank unit (the drawee bank's unit) receives the DI at the clearing house;
- The payer's clearing bank unit, as applicable, submits the DI, via the receiving bank's internal network, for verification purposes (valid DI, an existing account, available funds, etc). If the DI is validated, the payer's account is debited; otherwise a payment refusal is filled in. The registration with the Payments Incidents Office is done on the refusal day at the latest.
- On the interbank clearing day, at the clearing house, the DI is either cleared as part of the batch or refused (total or partial refusal, for each individual DI entered into clearing on the value date).

The DI processing scheme and stages via the paper-based clearing house are presented in Annex 1 to this document.

- *Clearing output*

One daily[2] clearing session takes place at each clearing house, resulting in a single output referring to each participating bank unit's net debit or credit position.

After the clearing sessions are completed, the results calculated by each clearing house (net positions) are centralized at TRANSFOND S.A. head office, and the resulting multilateral net-net positions (aggregated net positions) are finally settled in ReGIS, in Participants' settlement accounts; this happens on a daily basis, between 14:15 and 14:30.

## 4. Electronic processing of debit instruments

The electronic solution for DIs (i.e. cheques and promissory notes) processing is mainly aimed at dematerializing the DIs processing on the interbank circuit, in such conditions so as to receive all stakeholders' acceptance.

This solution entails the following:

- elimination of paper-based instruments inter-bank circulation, by truncating DIs at one of the beneficiary's bank units, including DIs image capture;
- electronic submission of debit payment instructions and DI images;
- payment validation (payment acceptance or refusal from paying bank) based on the DI captured images;
- centralized clearing of DIs in SENT, with final settlement of the resulting net position in ReGIS;
- a high degree of security and automation of DIs processing, at lower costs and faster processing times.

### *4.1. Electronic processing stages*

The main stages of DIs SENT automated processing are outlined below and the information flow is described in Annex 2 to this document.

#### Debit instruments truncation

The DI truncation process consists in the capturing of payment information in electronic format and stopping the circulation of paper documents; any subsequent processing of the payment instruction is to be take place electronically. The latest imaging processing technology allows payments validation by using digital images of DIs.

DIs truncations is done at the beneficiary's bank unit where the DI is first presented or at a nearby bank unit, depending on the distribution of transactions volume within the beneficiary's bank territorial network.

Payment information from paper DI are converted in electronic messages at the sending bank unit resulting in files similar to direct debit (DD) files, in XML format; DI front/back

[2] Bank business day.

images are captured on electronic media, either with the help of special technology or with ordinary scanners and the output will be electronic, image files.

Digital signatures will be used to certify the compliance of the payment information and digital image with the original paper-based document and for the subsequent authentication and electronic messages integrity control. Participants will submit to SENT, as for DD instructions, payment messages files and image files[3], related to the debit instruments, digitally signed by SENT users from the sending bank. It is up to the Participants to decide how they will ensure the compliance and integrity of the payment information and images.

Paper-based payment instruments are no longer transmitted via the interbank circuit; their circulation flow and of the attached documents[4] stops at the truncation unit[5].

Significant information, that is currently included on the deposit slip accompanying the paper-based debit payment instrument throughout the circuit flow, is to be included in the payment message (beneficiary, beneficiary's IBAN, cheque number, etc). In order to provide evidence of a DI collection deposit as part of the bank unit – client relation, either the deposit slip will be further used, or another method of client identification[6] will be applied, by issuing a receipt/note to the client including all payment information.

Truncation units will be communicated both to TRANSFOND S.A. and the National Bank of Romania. The flexibility in selecting the location of the truncation units does not entail derogation from the maximum processing periods that are to be set out by regulations.

**Electronic presentment in SENT (in T-n, T-m)[7]**

DIs will be presented electronically to the payer's bank via SENT, as electronic files, as follows:

- the debit payment instruction and the digital image of the payment instrument[8] are sent to the beneficiary's bank unit designated to be the SENT single point of access:
- from the single point of access, the payment instruction, accompanied by the corresponding digital image, is submitted to SENT via the TFDNet network;
- from SENT, where they are validated and recorded, the payment instructions and DI images are forwarded to the payer's bank.

Annex 3 includes the main moments of the electronic processing of debit instruments and the related operating periods.

[3] The way DI images will circulate will be defined by the specifications (as part of the payment messages, separately from the payment messages, etc).
[4] Collection slip or DI deposit slip for example.
[5] It is up to the commercial banks to decide upon the location of the truncation unit; they will establish, based on their own criteria, which is the best solution for them (truncation at each bank unit, truncation at certain county or regional centres, head office truncation, etc).
[6] Client ID card, bank card, etc.
[7] The payment presentment period (T-n, T-m) will be defined by the SENT System Rules and system parameters. *T* is the value date and *n* and *m* are system parameters, expressed as days and time of the operating day.
[8] Depending on the truncation procedures defined by each bank.

### Payment validation

Payment validation is made by the payer's bank based on the DI scanned image. Various systems and data bases with various degrees of centralization and automation may be used. Potential refusals will be submitted to SENT within a time period defined in the system rules (refusals waiting period).

For each refusal received and formally validated, SENT calculates the residual value of the file containing the refused ID, by extracting the refused amount from the file amount, and then sends the refusal to the beneficiary's bank.

A significant difference to the direct debit scheme is the option of DI partial refusal. In order to facilitate the automated processing (validation and reconciliation), both in SENT and at the Participants, the DI refusal electronic message will include the refused amount. This amount must be smaller or at least equal with the original amount to be paid corresponding to that particular DI.

Depending on the amendment of the legal provisions related to DIs, in case of a payment refusal, the beneficiary's bank shall send the beneficiary either the paper-based debit instrument or the DI face/back image printed on paper, certifying the totally or partially refused amount, signed by an authorised representative and bearing the bank's stamp.

It is possible that when the legal framework is amended, a standardised form should be defined to record the refusal; the form might be submitted to the client and may include the face and back image of the debit instrument.

The DIs value to be settled via SENT is communicated by TRANSFOND S.A. to all Participants at the end of the refusal waiting period; when the proposed solution is to go live, this moment would be la at 18:00 in the day preceding the day of settlement.

### Clearing of debit payment instruments (in T)

DIs clearing will take place in SENT similarly to direct debit processing; payment acknowledgment is made by default, as the system considers as accepted for payment all debit instructions for whom no refusal has been received from the payer's bank head office.

SENT calculates and updates the Participants' net positions following the validation of each file's residual value with the collateral limit of the paying Participant; the payment acceptance is conditional upon meeting the collateral limit.

### Settlement

DIs final settlement takes place in ReGIS, when the net settlement instruction (NSI) submitted by SENT at the end of the clearing session is settled in the settlement accounts of the involved Participants.

### Reporting and reconciliation

Reports generated by SENT as well as the participants reconciliation process will be updated with DI information. Beside the reports currently generated by SENT, a refusal report will be generated for the National Bank of Romania, including all payment refusals recorded by SENT.

Considering banks' requirements, it is possible to include new facilities and messages into SENT in order to implement the proposal regarding the automated reporting by TRANSFOND to the Payment Incidents Office of DI payments incidents recorded by the system and of those occurred on the participants' internal circuits in order to significantly automate the Participants' operations related to such instruments.

**Archiving**

**Electronic archiving.** DIs digital images will be maintained at three locations: the beneficiary's truncation unit, the payer's bank unit and TRANSFOND S.A, as trusted third party; in this way, all potential disputes can be promptly solved.

**Paper-based instruments archiving.** Paper-based debit instruments will no longer be transmitted on the interbank circuit and are maintained (archived) at the bank unit that the beneficiary's bank designated for this purpose (it may be the truncation unit or any other bank unit, according to each Participant's internal procedures). The beneficiary's bank will submit the paper document to the beneficiary only in case of payment refusal, depending on the amendment of the legal provisions related to DIs.

### 4.2. *Additional measures and facilities*

**Possible improvements of the paper-based debit payment instruments**

Although it is not absolutely necessary for the implementation of this solution, especially in the case of the adoption of the "source truncation" (at the beneficiary's bank unit), in order to mitigate the risks entailed by the automated processing of DIs and to increase data accuracy, the current contents of the paper-based debit instruments might be changed, by amending the specific norms and regulations issued by the National Bank of Romania so as to ensure the filling in of a code line in the clear band of the DI layout and the centralised numbering of promissory notes, as well as by defining specific technical requirements.

**a. Code Line**

DIs might be customised by the issuer's bank (drawer and underwriter, accordingly) by applying code lines (as bar code or other standards, up to banks' choice) on the white band of each debit instrument. The code line will include the following information: issuer client IBAN, serial number and number of the DI, transaction code (type of debit instrument).

Inserting code lines on DIs is meant to facilitate processing and settlement but it may not be compulsory for all banks. In this case, commercial banks will charge different processing fees for DIs, with or without bar codes. Using codes proves extremely useful when a large number of DIs is processed (the case of regional truncation centres, for example).

Statistical information in Annex 4 illustrates the current situation of DIs in Romania and Annex 6 outlines the trends and core features of the EU automated processing systems that have a long tradition in processing such payment instruments. Together, they may be a useful reference for selecting one of the possible processing solutions presented in Annex 5.

### b. Centralized numbering of promissory notes

In order to uniquely identify each debit instrument, it is advisable that for promissory notes a numbering system should be implemented, as to provide a unique identification serial number to each instrument, similarly to cheque.

There also is a proposal made by a number of banks to standardise these payment instruments, to have a consistent model for the entire banking system, considering that settlement takes place through the banks.

Additional costs resulting from the application of these measures may be covered in the same way as when issuing cheque books.

### *4.3. Requirements regarding the amendment of legal and regulatory framework*

In order to enable the implementation of this solution, the Romanian legislation on debit instruments, i.e. Law 59/1934 and Law 58/1934, as subsequently amended and supplemented, must be amended so as to:

- allow DI interbank electronic presentment, clearing and refusal (especially to give the same legal value to the DI image presenting as for the original DI presentment)
- to protect the rights of all involved parties by allowing, in exceptional situations, to claim the submission of the paper-based debit payment instrument without interfering with the rights conditional on time limits set out by law referring to: presentment for payment, drawing up the protest, etc.
- in case of electronic processing, not to interfere with the obligations that banks and the clearing system operator have towards the clients related to the paper-based payment instruments.

It is also necessary:

- to include the law amendments into the NBR norms that regulate the debit payment instruments: Framework Norms 7/1994, Framework Norm 6/1994, Technical Norm 9/1994 and Technical Norm 10/1994, accordingly.
- to repeal the NBR Regulation 10/1994 on multilateral clearing of interbank paper-based cashless payments, as subsequently amended;
- to update the SENT System Rules, operating procedures and user manuals including provisions related to the DI electronic processing.

If the proposal of automated reporting by TRANSFOND of DIs payment incidents is adopted, the NBR Regulation 1/2001 regarding the organisation and operation of the Payments Incidents Office at the National Bank of Romania, as subsequently amended, should be accordingly amended.

Exceptional situations when a refusal recorded in SENT is not an actual DI refusal (e.g. lack/poor quality of DI image) will be regulated by the SENT System Rules and the NBR Regulation 1/2001 shall include provisions relating to the reporting of such instances to the Payments Incidents Office.

For the transition period from the paper-based clearing system to the automated clearing system it must be defined, in accordance with NBR Regulation no. 10/1994, how the clearing paper-based instruments still in circulation on the interbank circuit at the moment when this solution goes live will be finalised, until those circuits are completed, without entering new instruments into the circuit. Depending on the circuit, this will take from 3 to up to 9 banking days.

Migration from the current paper-based DIs standard to a new standard provided by the amendment of NBR Norms 6/1194, 7/1994, 9/1994 and 10/1194 will be achieved on a gradual basis, during a transition period that will allow for the interbank presentment of DIs issued by clients before the implementation of these instruments new format has completed. SENT System Rules and the system technical documentation will be updated with the specifications needed for this period[9].

### 4.4. *Adoption of specific technical requirements*

In order to ensure a reasonable quality level of DI digital images, the paper documents and the images captured by scanning must observe specific requirements related to image (contrast, brightness, unique formats, information standardisation etc. For this purpose it is necessary that the NBR regulations regarding the paper-based DI standard must accordingly be reviewed and updated.

### *4.5. Advantages*

- Significant reduction of settlement periods, from 9 to 2-3 bank operating days.
- Cutting costs incurred from submitting and presenting paper-based DIs.
- Reduction of manual operations and elimination of the clearing paper documentation.
- A single DI circuit, as for SVPOs and DDs.
- DIs processing critical moments are defined as SENT system parameters and they can be set up according to the implementation current situation.
- In case of payment refusal, the beneficiary's bank unit can directly supply the paper-based debit payment instrument to its client to draw up the protest;
- Reports can be generated with detailed information on each DI type, including refusals reports.
- Settlement risk mitigation by using a single collateral scheme for all cleared payments instruments, based on the actual value of each Participant's payments and not on statistical evaluations.
- Latest generation technology is used to process the debit payment instruments.
- SENT system can be used, without any major add-ons, as the system has been created with a view to a potential take-over of other debit instruments, beside direct debits.

[9] How the promissory notes will be uniquely identified, for example.

- Collateral limits are available to Participants (all necessary information is communicated by TRANSFOND in the evening preceding the day of settlement, at 18:00).
- Automatic reporting to the Payments Incidents Office.
- Cutting down processing costs, especially staff related costs.

### *4.6. Costs*

It must be pointed out that the adoption of this solution will entail:

- the increase of data throughput in each bank's internal communications network, to different extents, depending on the volume of DIs truncated and paid, accordingly, by each territorial bank unit;
- costs related to devices and software used for printing and reading bar codes, for capturing and processing payment information and images, for integrating the new facilities into the banks' computer systems, staff training, etc;
- changes of banks' internal software applications or the development of new modules, depending on the actual situation;
  adaptation of TRANSFOND's central SENT system.

### *4.7. Preliminary assessment results*

The Convergence Programme has performed and estimation of the net effects on the banking system of the adoption of the DI electronic processing solution. Reference data used to analyse the impact of the migration to DI electronic processing were those in the Roland Berger study on "The Impact of external regulations on the Romanian banking system" and those supplied by TRANSFOND (Annex 5).

According to these estimations, the savings at the level of the entire banking system related to the staff involved in DI processing would be of almost RON 85 million/year and almost 380 million RON updated net value calculated for a period of 5 years.

The potential effect of TRANSFOND's fees reduction on the banking system might involve savings of almost 9 million RON/year and 38 million RON updated net value calculated for a period of 5 years.

Concerning TRANSFOND, the savings achieved by electronic processing of DIs after the deduction of IT investment expenses might raise to 1.3 million RON/year and 7.5 million RON updated net value calculated for a period of 5 years.

A final estimation of the net effects on the banking system of the adoption of the DI electronic processing solution will be made based on the banks' answers to the questionnaire submitted through the Romanian Banks' Association.

# Annexes

**Annex 1 – DI Processing scheme and stages**

**Annex 2 – DIs electronic clearing circuit**

**Annex 3 – Cut-off times of the DIs electronic circuit**

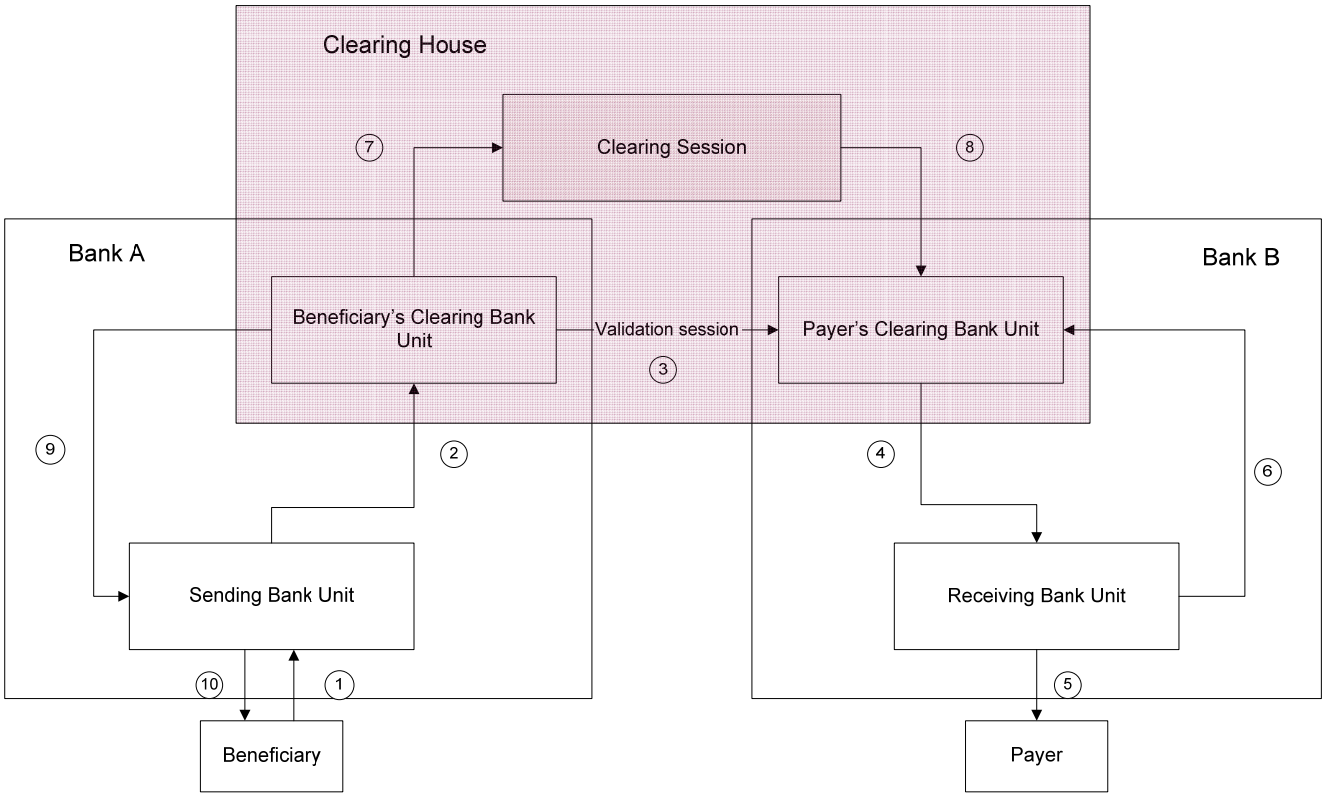
**Annex 4 – Statistical data regarding the current DIs processing situation in Romania**

**Annex 5 – Possible options regarding the DIs processing**

**Annex 6 – International DIs-related trends**

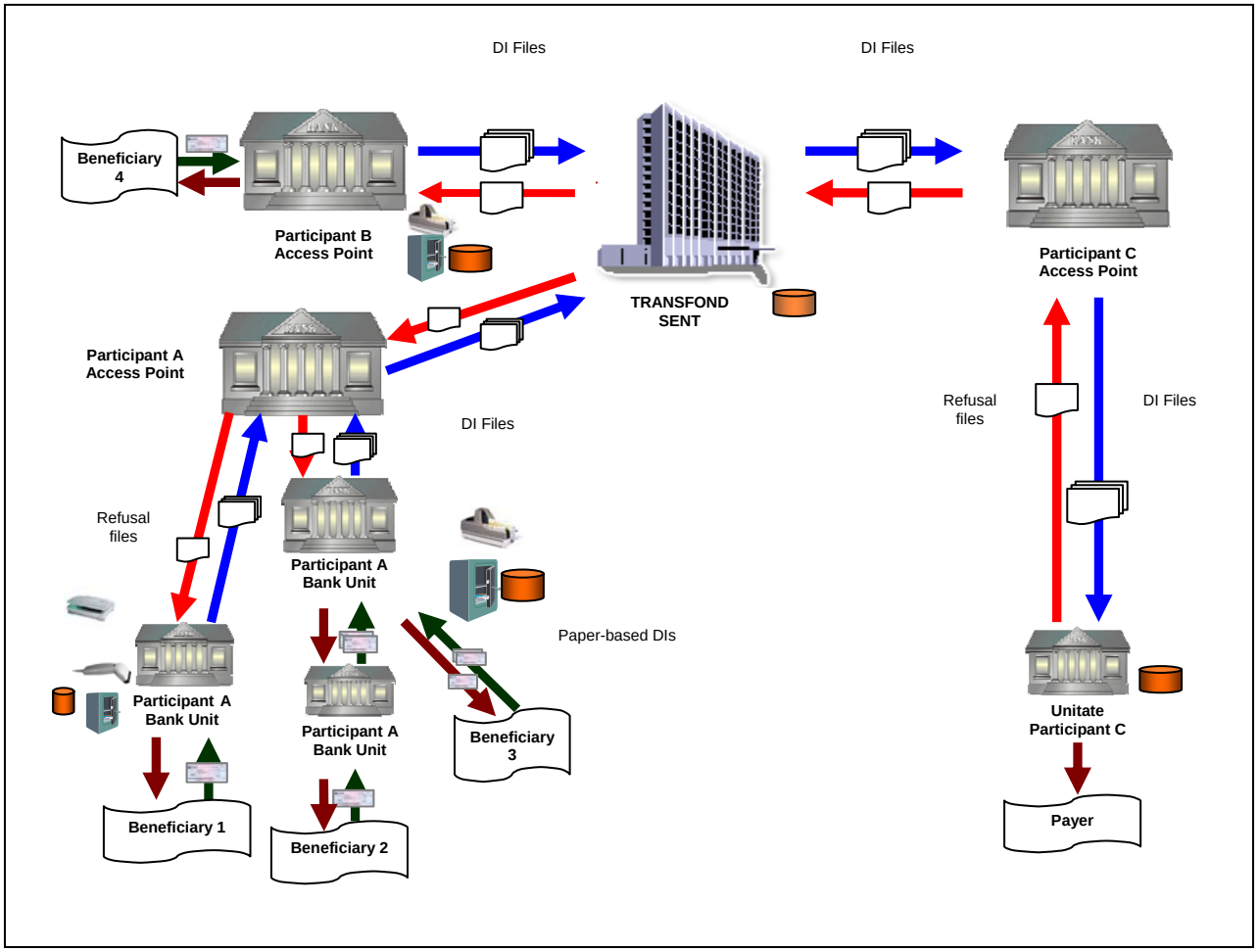
## *Annex 1 – DI processing scheme and stages*

**DI processing scheme**

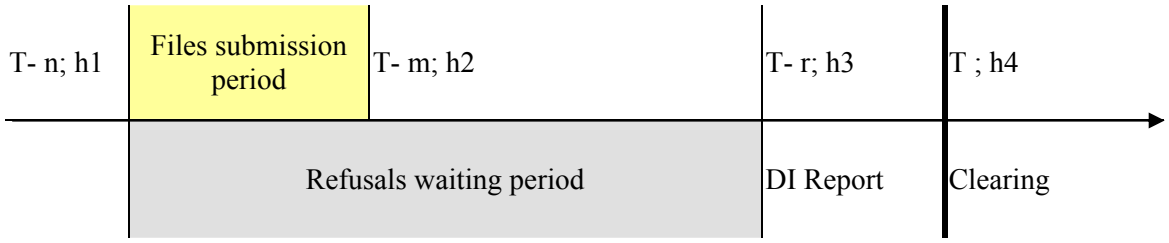



| No. | **DI processing stages** |
|---|---|
| 1. | - the beneficiary client submits the DI to the bank unit with whom they have opened their current account |
| 2. | - the sending bank unit submits the DI to the beneficiary's clearing bank unit via the bank's internal network |
| 3. | - the beneficiary's clearing bank unit submits the DI to the payer's clearing bank unit during the validation session |
| 4. | - the payer's clearing bank unit submits the DI to the receiving bank unit via the bank's internal network |
| 5. | - the receiving bank unit checks the DI and after it is validated, it debits the payer's account with the amount corresponding to the accepted DI |
| 6. | - the receiving bank unit submits to the payer's clearing bank unit the data on the DI that is to be accepted for clearing |
| 7. | - the beneficiary's bank unit submits the DI amounts for clearing |
| 8. | - the payer's clearing bank unit either accepts or refuses the DI for clearing |
| 9. | - the beneficiary's clearing bank unit submits to the sending bank unit the data in the DI accepted for clearing by the payer's clearing bank unit |
| 10. | - the sending bank unit credits the beneficiary's account with the amount corresponding to the accepted DI |

*Annex 2 – DIs electronic clearing circuit*



## *Annex 3 – Cut-off times of the DIs electronic circuit*




Where:

T = value date;

*n, m* and *r* = number of business days;

*h1, h2, h3* and *h4* = time moment of the operating day

DI XML files and images are submitted to SENT during the "Files submission period[10]".

Submission of potential refusals takes place during the "Refusals waiting period" that may virtually start at the same time with the files submission period but it must end after the files submission period has ended in order to make possible the payments validation and refusal submission.

At the end of the waiting period, a report is generated including debit instructions to be paid on value date; the drawee's bank is thus informed on the value of necessary collateral.

Clearing takes place according to the system timetable and settlement is performed when the NSI for that particular clearing session is settled in ReGIS.

[10] There is a proposal from banks to define the Submission Period as a single day window with a further Waiting Period.

## *Annex 4 – Statistical data regarding the current DIs processing situation in Romania*

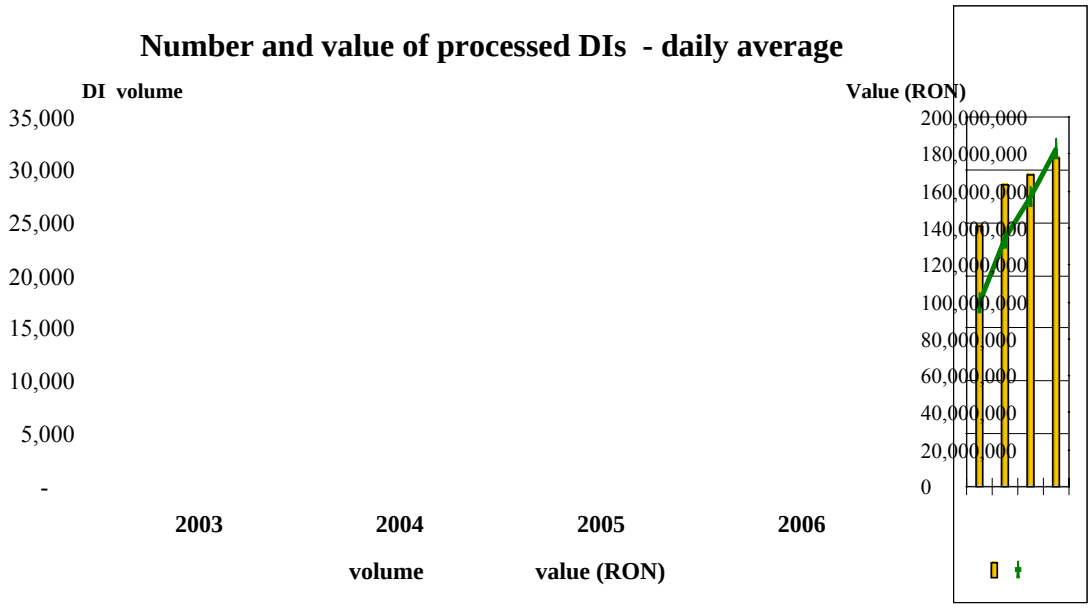
In order to be able to analyse the trends and evolutions of debit payment instruments, TRANSFOND drew up and made available a few statistical reports, aggregated at the level of the entire banking system, regarding the volume and value of operations involving such instruments, for the time period between January 2003 and October 2006.

**The daily average number of processed instruments and their value**

The daily average number of debit instruments processed by the clearing house, i.e. on the interbank circuit, is over 31,000 instruments a day in 2006. The trend was of ongoing increase. Thus, in 2006, compared to 2003, the growth of the daily average number of instruments is of approximately 26%, while the overall value has risen, during the same time interval, by 84%. Considering that the last months of the year are peak times, it is very likely the average increase to be larger; as regards the value of the processed instruments, this might even have doubled compared to 2003.

To the figures corresponding to the DIs processed on the interbank circuit, the values corresponding to the intra-bank circuit must be added. Although there is no available statistical data for the same period, it might be inferred that these values are at least equal to the interbank traffic[11].

Chart 1 – Number and value of DIs operations during January 2003 – October 2006




[11] DIs automated processing solution must envisage both the interbank and the intra-bank traffic to be able to truly facilitate the commercial banks' activity.

**The average number of debit instruments and value by banks**

According to the aggregates statistical date supplied by TRANSFOND, the DIs market is currently extremely clustered.

Thus, the first 5 banks have (cumulatively) a share of around 60% of the overall number or processed debit instruments and approximately half of their value.

The first 10 banks have (still cumulatively) almost 86% of the overall number of processed debit instruments and almost three quarters of the value of processed instruments.

These figures are for 2006.

**The average number of debit instruments and value by county**

In this case, too, the market is very much clustered. Thus, according to the existing statistical data for 2003 – 2006, almost 24% of the overall number of debit instruments is processed in Bucharest (branch and head office), reaching 28 – 29% of the national value.

## *Annex 5 – Possible options regarding the DIs processing*

As regards the DIs processing (cheques, promissory notes and bills of exchange), three possible options have been identified:

- maintaining the current situation (manual processing of paper-based instruments)
- administrative phase-out of DIs
- electronic processing

**V 1. Maintaining the current situation**

The current situation is not beneficial for involved parties:

- **For commercial banks and TRANSFOND**, maintaining the manual processing of debit instruments generates losses. These losses result from maintaining the 42 territorial clearing houses (one in each county and the head office). Banks must have clearing agents to each territorial clearing house and TRANSFOND must ensure, in its turn, beside the clearing officers, all the corresponding logistics (office space, computers, software applications, support staff, etc).
- **For commercial banks' clients**, keeping the DIs manual processing entails higher fees and longer settlement lags, in other words lower quality services than in the case of electronically processed DIs.

**V2. Administrative phase-out of DIs**

Opinions have been expressed by the banking community according to whom a potential solution to the issues entailed by DIs would be to eliminate them.

In order to eliminate DIs, the two laws that regulate them (58 and 59 from 1934) should be repealed. As long as these laws are in force, DIs can be requested and used at any time by the non-banks clients.

At the present moment, debit instruments are used almost exclusively by economic agents, in many cases as a form of commercial loan.

There are though a series of arguments that plead against the administrative elimination of debit instruments:

- DIs elimination can be done provided there are other types of instruments that could replace them. There is no other instrument, in the present, that might take over the operations carried out by companies with cheques and promissory notes;
- As long as there is a demand for DIs on the market, there is no point in eliminating them, particularly because they are used as both commercial loan instruments and as payment instruments.

- In the absence of an interbank agreement regarding the elimination of cheques and promissory notes, this endeavour is doomed to fail. We'll only assist to the clients' migration from one bank to another because clients that use DIs for various purposes will migrate to banks that are willing to provide such services;
- The repeal of the two laws (58 and 59/1934) by the Romanian Parliament will prove difficult, as strong lobbying is to be expected from the supporters of cheques and promissory notes against the elimination of such payment instruments;
- Eliminating cheques and promissory notes might create a series of problems at macroeconomic level. Some of the economic agents might face serious difficulties in their daily activities: in the absence of commercial loans, they might turn to bank loans in order to obtain funds. Some of the economic agents will not qualify for undertaking such operations and will be forced to diminish their activity, possibly going into bankruptcy.

It worth underline that the National Authority for Consumer Protection (NACP) considers that consumers want banking products and, in this particular case, debit transfer instruments (cheques, promissory notes and bills of exchange) which should be:

- safe;
- fast settled;
- less papers (forms)
- accessible (for large number of consumers and easy to be used by less banking educated people)

NACP also emphasises that we should take into consideration the relatively reduced consumers' knowledge in financial and banking instruments, and that after 1989 the consumers became more familiar with such instruments as cheques, promissory notes and bills of exchange. Due to the poor offer of other lending facilities and since both promissory notes and bills of exchange are also commercial papers (having commercial credit functions), they could be a viable solution for SMEs.

As a conclusion, NACP considers that the administrative phase-out of debit instruments could cause significant problems and, in this situation, the processing modernisation would be a better option, more appropriate for the consumers needs.

**V3. Electronic processing**

Automation of DIS processing is the third possible solution and it has both advantages and costs.

Advantages:

- It allows for keeping on providing services required by clients
- It enables the improvement of the service quality supplied by TRANSFOND to commercial banks and by commercial banks to their clients (faster processing times, lower risks, increased security, lower fees, etc)
- It simplifies the activity of commercial banks, as the DIs circuit follows the circuit of the other instruments processed by the automated clearing house;

- Payment instruments exchange follows a single circuit (from the territorial bank unit to the head office) instead of the twelve circuits existing at the present,
- It allows the elimination of losses generated by manual processing of debit instruments.

Costs:

- Expenses for developing or changing Participants' software applications
- Investments for supplying the necessary equipment for processing DI images.

Costs vary from bank to bank, depending on the operations volume, the existing internal software applications and the selected technical solution.

**Assessment of the financial impact of DIs processing automation of the commercial banks and TRANSFOND**

It is difficult to asses the savings that commercial banks and TRANSFOND might achieve by adopting the automated processing of debit instruments. However, a series of estimations can be done, based on certain hypotheses:

- for ease of work, it has been considered that savings especially address the expenses related to staff, that might be allocated to other tasks;
- by automating the debit instruments, 41 individuals (one for each territorial clearing house) might be re-allocated, on average[12], by each bank;
- the paper-based clearing house, operated by TRANSFOND as an agent, will cease to exist. As such, losses incurred by maintaining the territorial network into operation will be eliminated; the losses for 2006 are estimated at 1.5 – 2 million RON *(source: TRANSFOND)*.
- The fee for DIs processing via the automated clearing house is expected to be 1 RON compared to 2.2 RON, at the present *(TRANSFOND estimation)*. The expected fee is higher than the current SVPO fees considering that beside payment messages, digital images of all DIs circulating among banks will have to be processed and archived. However, the level of these fees will be established after the implementation completion.

The average value of the investment by bank has been approximated by Convergence, as the solutions differ from one bank to another; more information will be published after the answers to the questionnaire distributed by ARB, as part of this programme, are centralised. The invested value could be covered by most of the banks by the potential difference between the fees currently paid to TRANSFOND and future fees, provided that the fees charged to non-bank clients remain the same.

[12] In case of large banks, the number of re-allocated staff will be higher, while in case of smaller banks, it will be lower. However, on average, at the banking systems' level, it has been considered as a reasonable hypothesis that one individual would be re-allocated to other tasks, corresponding to each territorial clearing house.

Savings that might be achieved:

- Savings achieved by TRANSFOND by the elimination of paper-based clearing house related losses adjusted with the IT investment – **almost 1.3 million RON/year**
- Cutting costs resulted from TRANSFOND DI processing:

7.7 million operations/year * 1.2 RON/operation = approx. RON **9 million/year**

- Cutting costs corresponding to banks operations personnel meaning 41 individuals in 36 banks = **approx RON 85 million/year**

According to a very rough calculation, the cumulated savings might reach 95.3 million RON.

The potential investment in automating the DI processing, depending on the volume of operations to be processed by a bank and the adopted truncation solution, may vary between a few tens of thousand and a few hundreds of thousand EUR. The bigger a bank's territorial network is, the higher the solution costs (as the traffic will be higher and the truncation solution more complex). It is very likely that most of the banks, based on the aforementioned suppositions, recover the investment expenses in the very first year after the solution implementation.

## *Annex 6 – International DIs-related trends*

The international situation related to debit instruments such as cheques and promissory notes greatly varies from one country to another. There are countries where cheques are a very popular payment instrument, even for the general population (USA, UK) and countries where these instruments are almost non-existent (Scandinavian countries or Baltic countries).

Among the countries where cheques are used[13] the following may be mentioned: France 30%, UK 16%, Italy 16%, Ireland 24%, Cyprus 40%, Malta 60%, Greece 23%, Portugal 20%. The figures represent the percentage of payments made by cheques from the total payments in that particular country. It must be stressed that in these countries, beside cheques, direct debits are used on a rather large scale.

It has been noted that, in time, the cheques weigh in the EU payments total has been decreasing. However, this has been a gradual process, accompanied by growing usage/popularity of other instruments (such as cards or direct debits). The ECB recommendation is to try to put off the usage of cheques (as they are expensive and have long settlement times) and to encourage payments by direct debit or cards. It must however be pointed out that among countries that have a significant volume of cheque payments, none has opted for the sudden elimination of such payment instruments. There also are countries that, in the context of the ECB recommendations, has stated as long as cheques are demanded by the market, they will not be eliminated and commercial banks will continue to provide such services.

Cheques processing methods also largely differ from one country to another. It must be however stressed out that there are few instances where such instruments are still processed manually.

[13] The instruments considered are: the payment order, direct debit, cheque, cards and e-money.

## Payment systems that use truncation in processing debit payment instruments

| Country | System | DI types | Presentment | Paper-based DI circulation is stopped at: | Using images | Value limit | Useful links |
|---|---|---|---|---|---|---|---|
| **Belgium** | Centre for Exchange and Clearing (CEC) | small-value cheques, bills of exchange, promissory notes | electronic | beneficiary's bank | It is being considered (CEC III) | EUR 50,000 | www.nbb.be |
| **France** | Interbank Teleclearing System (SIT) | cheques, promissory notes, bills of exchange, LCR[14] | electronic | beneficiary's bank | (Yes)[15]. | No | www.gsit.fr |
| **Germany** | Retail Payment System (RPS) | Cheques | electronic | beneficiary's bank unit | No | EUR 6,000 | www.bundesbank.de |
| | | | paper-based[16] (electronic) | System operator (/beneficiary's bank[17]) | (yes) | | |
| **Greece** | Interbank Cheque Clearing System (DIAS) | Cheques | electronic | beneficiary's bank unit | n/a | No | www.dias.com.gr |
| **Italy** | BI-COMP, The Retail Sub-system | Cheques | electronic | n/a | No | EUR 3,000 | http://www.bancaditalt |
| **UK** | Cheque and Credit Clearings (CCC) | Cheques | paper-based | drawee bank processing centre | n/a | No | n/a |
| | Intelligent Processing Solutions (iPSL) | Cheques | electronic | participating banks/processing centres | Yes | No | www.unisys.com |
| **Portugal** | Interbank Clearing System (SICOI) | Cheques | electronic | beneficiary's bank /ATM | Yes[18] | EUR 10,000 EUR 100,000 | www.sibs.pt/ www.bportugal.pt/ |
| | | bills of exchange | electronic | drawee bank | n/a. | < EUR 100,000 | |
| | SPGT – RTGS System | cheques and large-value bills of exchange | electronic | beneficiary's bank | n/a. | > EUR 100,000 | www.bportugal.pt/ |
| **Spain** | The National Electronic Clearing System (SNCE) | cheques, bills of exchange | electronic | beneficiary's bank | Yes[19] | (EUR 50.000) | www.bde.es www.snce.org |

[14] LCR - Lettre de Change relevé
[15] Images are kept by beneficiary's bank and are submitted by fax to the drawee's bank upon request
[16] Truncation is made at central level, by the system operator (Bundesbank) for cheques bigger than 6,000 EUR, as well as for cheques that do not comply with the regulatory requirements and format standards, whose bar codes are difficult to read or in the case of small banks
[17] Under implementation, scheduled to go live in 2007
[18] Images are submitted for cheques between 10,000 and 100,000 EUR
[19] Images are submitted for cheques bigger than 50,000 EUR