



The application program systems STATUS and STATUS DFT and their communication role in the financial market

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The National Bank of Slovakia (NBS) has two main channels of communication with financial market participants. The NBS website is the first, and the application program systems STATUS and STATUS DFT are the second.

The central bank uses its website (www.nbs.sk) for regularly publishing various information, such as macroeconomic indicators, reports and press releases, and expert studies on the financial and economic development of Slovakia. Since it is there to be browsed by all users, the NBS website provides one-way communication between the NBS and financial market entities and the general public. Unlike the website, however, the application program systems APS STATUS and APS STATUS DFT provide for two-way communication between the NBS and financial market entities. APS STATUS is a system for the collection, processing and storing of data from commercial banks, while APS STATUS DFT enables the collection, processing and storing of data required for financial market supervision, and data exchange with capital market entities, insurance companies and pension fund management companies.

DEVELOPMENT OF APS STATUS AND APS STATUS DFT

From when it was established, the NBS processed data from commercial banks by means of ABIS, an information system adopted from the Czech National Bank. The processing and creation of simple outputs from ABIS were carried out by the software CLPROG. As years passed, demands on the quality of processed data (and likewise the outputs) increased and ABIS proved unable to meet them. At the end of 1996, therefore, the NBS selected a supplier for the task of developing a new program system for the collection and processing of data from commercial banks.

The whole project was divided into two cycles. In the first cycle, the supplier developed the system and the NBS tested it during June and July 1997. This was a basic form of the report processing system, which used six selected reports and without possibility of checking them. The system was developed as a database in Lotus Notes 4.5.1. In the second cycle, the functionality was substantially expanded to include, for example,

options for data collection, data checking and the creation of various outputs. A support database in Oracle Express software was also produced. Testing of the improved functionality was carried out within the second cycle in June 1998. From August of that year, the NBS Statistics Department began the parallel processing of data in the ABIS and APS STATUS system. The APS STATUS was in full operation by January 1999, and parallel processing in ABIS was discontinued in August 1999. The establishment and development of APS STATUS represented progress in the collection of data: the period of collecting and transferring data by diskette was over and collection of data by means of computer network had begun.

APS STATUS has had several upgrades during its existence, including two that substantially affected the functionality of the system. The first of the major upgrades was carried out in 2001, when the system acquired the capability to create versions of code lists, which enabled, for example, changes to be made in banks' numeric and character codes. At the same time, work on the archiving of documents in the Lotus Notes database was also completed. The system's second major upgrade took place in 2005, after the firm developing Lotus Notes ceased providing support for object components. It was therefore necessary to replace them with the most widely used spreadsheet program, MS Excel, in version 2000 or higher. This upgrade also necessitated the transition to the higher version of Lotus Notes (6.5.4).

During 2005, the first analyses and preparatory work were begun on the development of a new system for the collection, processing and storing of data for the purposes of financial market supervision. This was because the NBS would, take over the competences of the Financial Market Authority from 2006. The requirements for APS STATUS DFT were substantially expanded in comparison with APS STATUS, so that they covered all then-known specifics and needs for the collection and processing of data from financial market entities.



Unlike APS STATUS, APS STATUS DFT handles the collection of data from a substantially larger number of entities, the categorization of entities, the substitutability of reporting for other entities, and the collection of reports containing parts with both a constant and variable quantity of data. In addition, it ensures the collection of different types of documents, provides better processing and collection of data in the OLAP database, and has a different concept of access rights, etc.

Owing to the extreme time constraints, work on APS STATUS DFT was divided into two stages. The first stage of system development was completed in the first half of 2006, and from August of that year, the first selected entities of the financial market were able to report data in the new system. The second stage was concluded in December 2006 with the result that the system was fully functional.

BASIC FUNCTIONS

Both STATUS and STATUS DFT comprise two

subsystems. Subsystem STAVYD represents the database in Lotus Notes 6.5 and subsystem STATAN enables the storage, processing and analysis of data collected by subsystem STAVYD.

Subsystem STAVYD uses the advantages of Lotus Notes to distribute databases through the network to the end users. Whereas STATUS transfers data using the private network UNIVERZAL-NET, APS STATUS DFT communicates with financial market entities via the internet. The mutual exchange of data between the systems is carried out through replication, where the only data to be replicated are those which are changed in the database. Each database is established independently for each year. STAVYD supports:

- the collection of data and statements;
- the designing of sample input reports and their outputs, including the designing of links of control;
- automated transmission of all methodological changes concerning the production of statistical reports;

Table 1 Roles at the reporting entities (RE) and at the NBS

Roles at the reporting entity (RE):	
Name of role	Description
Editor	User at the RE who is allowed to produce and edit reports for the RE, whether at the RE or at a workplace in the NBS.
Responsible person	User at the RE who is entitled to validate the report on behalf of the RE.
Recipient at the reporting entity	User permitted to read the report and its outputs.
Administrator at the reporting entity	Administrator at the RE is a position created for supporting the administrator of both systems and for meeting certain partial tasks related to the operation at the RE.
Roles at the NBS	
Designer	Person at the NBS who is allowed to produce a sample report and to alter any corresponding attributes, such as its structure, definitions of link of control and derived indicators, as well as the content of the sample's XLS attachments; or, in the STATAN system, who enters and changes attributes of code lists and defines the field of users and assigns a semantic description of the users.
Editor	User at the NBS who is allowed to produce and edit a report for the NBS and for the RE at a workplace in the NBS.
Responsible person	User at the NBS who is entitled to validate a report for the NBS and for the RE at a workplace in the NBS.
Guarantee	User entitled to approve, conclude or reject a report at the NBS, to make plans and demands, and monitor the content of reports received at the NBS.
Recipient of the report at the NBS	Person with a passive right to monitor the state of processing of the input report or output and, as a reader, to access the report or output stored in the Lotus Notes database.
APS administrator	Administrator at the NBS who administers and manages the operation of the database
Operator	Person who oversees the correct operation of the system and monitors for any non-standard states and events.
Lotus Notes administrator	Person who administers the Lotus Domino servers, ID files, the setting of the database's access right registers, the setting of agent launches, and changes in the database design.



- automated sending of demands for undelivered input reports;
- access of users to input statements and outputs in accordance with predefined access rights;
- storage of statistical data and statements, their analysis and selection independent of the reports in which they were sent to the NBS;
- on-line access to statistical data, including the option to create different views of statistical data and export them into the application MS Excel;
- various support functions for the processing of data.

STATAN includes the multi-dimensional OLAP database accessible in the software Oracle Express Analyzer 6.3.2. It is used mainly for:

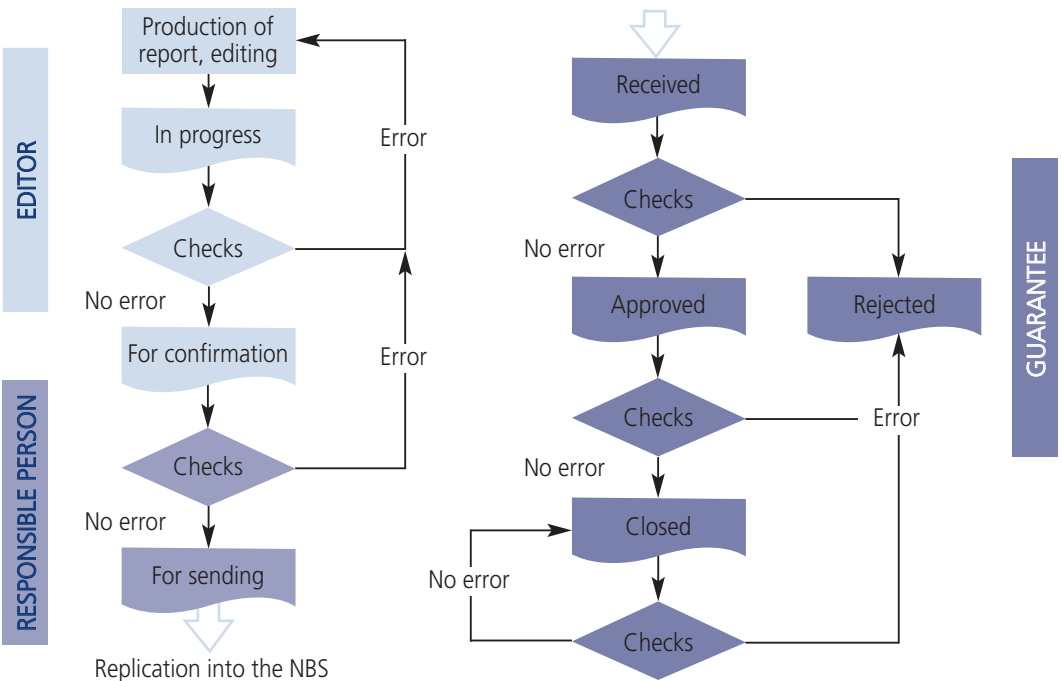
- storing input data from reports and statements;
- producing outputs in accordance with the requirements of individual users;
- designing,, processing and updating code lists;
- creating hierarchies of reporting entities;
- creating time series;
- simple statistical analysis;
- comparing selected data;
- processing non-standard outputs using special applications.

WORKING WITH APS STATUS AND APS STATUS DFT

Both APS STATUS and APS STATUS DFT ensure access to particular documents in the Lotus Notes databases based on predefined access rights set for each document. Regarding the similarity of certain activities and the access to documents, so-called user roles were created in both applications. The user roles are separately defined for reporting entities and for users at the NBS (see Table 1).

The users work with the reports and statements at a different stage in their life cycle of the documents (Scheme 1). Each role is defined so that a specific operation can be carried out with the report or statement. The sequence of operations and activities is selected so that data cannot be altered or misused and the whole process is transparent. Every operation with a report or statement is recorded with digital signature in the actual document of the Lotus Notes database. A report or statement therefore passes through several statuses. When the reporting entity is producing it and completing the data, the report or statement has the status "In progress". After ensuring that the report or statement contains no errors, the editor will change its status to "For confirmation". After the responsible person has checked the data in the report or statement, he/she will forward it to the NBS under the status of "For sending". Automatic replication follows in the next stage and the report or statement appears at the NBS with the status "Received". After undergoing checks of its versions, automatic checks and logical checks, the report or statement can be assigned the status "Approved" by the guarantee. Providing, there are no further doubts about the quality of its data, the report or statement can be assigned the status "Closed". If it subsequently becomes necessary to correct the data, even a closed report or statement can be rejected. The received data from the report or statement is then processed at the NBS (the STATAN system is used for this purpose). As soon as all the required reports or statements have the status "Approved", the guarantee will initiate the summarization procedures and the production of outputs – the basis of the statistical data that the NBS publishes for the public. Some of the published data are also disclosed directly to the re-

Scheme 1 Life cycle of a report



F
A
B



porting entities in APS STATUS or APS STATUS DFT. By means of both systems, the NBS communicates important information, methodologies, notices and statements to the entities, and the entities for their part send comments or confirm the facts stated in the reports.

APS STATUS and APS STATUS DFT represent a key means of communication between the NBS and individual participants in the financial market. They are used not only for the mutual exchange of information and data on the func-

tioning of the financial market, but also to create scope for bilateral feedback and thereby to continuously improve the communication process between the NBS and the financial market. To increase the efficiency of this communication is also a challenge for the future. As the economy grows, so will the importance of the financial market (especially the capital market) as the key intermediary of free funds within the economy, as will the role of the NBS as the supervisory authority.