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TRADE/WP.4/R.996  
19 August 1993

ENGLISH ONLY

COMMITTEE ON THE DEVELOPMENT OF TRADE

Working Party on Facilitation of  
International Trade Procedures  
(Thirty-eighth session, 24 September 1993  
Item 4 of the provisional agenda)

Meeting of Experts on Procedures and  
Documentation (GE.2)  
(Forty-eighth session, 23 September 1993  
Item 8 of the provisional agenda)

ANALYSIS OF THE INTERNATIONAL TRADE TRANSACTION[031]

Report of the ad hoc group on International Trade  
Transaction (ITT) Modelling

(Item 1.3.1 of the Programme of work)

Transmitted by the delegation of Romania\*

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GE.93-32380

1. In accordance with the decision taken by the thirty-seventh session of GE.2 (March 1993), the ad hoc group on ITT modelling held its meeting in Geneva on 15-16 July 1993 under the chairmanship of its Convenor, Mr. D. Dima (Romania). In his introduction, the Convenor underlined the main goals of the activity for the development of a model of the international trade transaction and the basic objectives of the meeting. The Convenor's statement is attached in Annex I.

**Item 1 - Adoption of the agenda**

2. The provisional agenda (Annex II) has been approved.

**Item 2 - Information session for GE.1 and GE.2 experts**

3. An information session for GE.1 and GE.2 experts presented the documentation developed to-date within the framework of WP.4 on the international trade transaction. It was agreed that future documentation would be based upon modelling techniques.

**Item 2(a) - Graphic Modelling Language GRAPES**

4. The representative of DEUPRO (SIEMENS/NIXDORF) demonstrated the graphic modelling language GRAPES. The demonstration was based on working document TRADE/WP/R.945 submitted by SITPRO for the March 1993 session of GE.2.

5. In the discussion, the universal nature of this type of modelling was noted and discussion took place on the ability to create different models of international trade transactions and to model the internal procedures for WP.4's activities. The meeting recommended the use of this method for international trade transaction modelling. It was also agreed to attach a short description of this language to the present report (see Annex II).

**Item 2(b) - Synergic Reference Model of ITT**

Documents: TRADE/WP.4/R.603, TRADE/WP.4/R.603/Add.1, TRADE/WP.4/R.806

6. The representative of SIMPROFRANCE introduced the above-mentioned documentation developed in cooperation with the Romanian delegation. It was noted that the description of the model of ITT contained in these documents can be technically converted with computerized modelling tool to produce a dynamic model of international trade activity in the same way as had been demonstrated using the information from document TRADE/WP.4/R.945.

**Item 2(c) - Procedures and Activities Chain and Message Interface**

Document: TRADE/WP.4/R.945

7. The representative of SITPRO introduced document TRADE/WP.4/R.945 which contains a proposal for a model with the use of UN/EDIFACT messages indicated. He commented favourably on the DEUPRO work to convert this model, on the basis of the language GRAPES, into a dynamic PC version.

**Item 3 - Presentation of other proposals on the subject**

8. The ISO Liaison Rapporteur, Mr. K. Naujok (Canada), gave information on the use of the Language GRAPES and other computerized tools for procedures modelling e.g. for data interchange standardization.

9. With regard to document TRADE/WP.4/R.806, he noted the information contained in it, but expressed some doubt about the possibilities for useful cooperation due to differences in methods of work.

**Item 4 - Development of a draft recommendation to  
the September 1993 session of GE.2**

10. As a result of the discussion on future work, it was agreed to prepare a new document (TRADE/WP.4/R.971) that would be a combination of all three methods as demonstrated by DEUPRO, SITPRO, ROMPRO and SIMPROFRANCE. The new model shall dynamically reflect changes and developments in trade procedures as well as those areas where EDI messages could be used. Policy and technical recommendations shall be made as appropriate. The WP.4 secretariat shall be responsible for the maintenance of the ITT model.

11. The ad hoc group approved the following timetable for the development of this new document:

- |                          |  |
|--------------------------|--|
| (a) by 22 September 1993 | to have updated all previous documentation   |
| (b) 13-14 January 1994   | to hold a meeting to finalize a<br>first draft of document TRADE/WP.4/R.971<br>for submission to the March 1994 session<br>of GE.2 |

**Item 5 - Preparation of a WP.4 programme item on the analysis of the ITT**

12. The secretariat informed the group that the WP.4 Bureau had already proposed to include the appropriate items in the Programme of work of WP.4. This subject will be discussed in the framework of the September 1993 session of GE.2.

13. The ad hoc meeting discussed several aspects of the future programme of work taking into consideration the place of ITT analysis and modelling in the context of WP.4's activities and organizational measures for conducting this work. In the discussion, the importance of elaborating models for data interchange standardization in the UN/EDIFACT environment was noted. The ad hoc group decided to finalize this discussion at its meeting in January 1994 on the basis of a draft proposal to be made by the Convenor and the secretariat. This proposal should be submitted to the March 1994 session of GE.2.

**Item 6 - Other questions**

14. The ad hoc group proposed that its mandate should now be as follows:

"The main goal of the ad hoc group is to undertake the modelling of the international trade transaction, as a whole, taking into consideration all aspects of modern data modelling techniques with a view to produce, on the basis of this model or its components, all necessary information for management in the field of trade facilitation."

Approval for this new mandate will be requested during the September 1993 session of GE.2.

15. It was agreed to hold the next informal meeting on 22 September 1993 in Geneva for discussion of the updated documentation and the structure of document TRADE/WP.4/R.971.

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ANNEX I

**GENERAL REMARKS  
CONCERNING ANALYSIS AND MODELLING INTERNATIONAL  
TRADE TRANSACTION IN THE CONTEXT OF WP.4 ACTIVITIES**

Convenor's statement

**1. Why does the this analysis and modelling of international trade transaction exist within the framework of WP.4?**

- The name of WP.4 - "Working Party for Facilitation of International Trade Procedures" - indicates itself the main objectives of its activities: "facilitation of international trade procedures", with all the components of this "facilitation" concept (e.g. rationalization, standardization, simplification, modernization, cost reduction (if possible), etc.);
- the basic element of the system of "international trade procedures" is the "international trade transaction (ITT)";
- as a result, "facilitation of international trade procedures" means the "facilitation of ITT";
- but "to facilitate" ITT, it is necessary to have, "in one's hands", this ITT, to have its description, definition, presentation;
- this is the reason for the analysis and modelling of ITT, generally, the "model" being an abstract reflection of the object under investigation.

**2. The Place of "analysis and modelling of ITT" inside and under the auspices of WP.4 activities.**

- the input information containing the "raw materials" for WP.4's activities now has a generic name - "business requirements".
- analysis of these "business requirements", from the point of view of their integration into the model of the ITT, should precede all other activities in this area, inside and under the auspices of WP.4, like data maintenance, message design, the development of aligned documents and measures to facilitate international trade, the legal aspects, etc,
- using this methodology, it is possible to reach a unique system approach for all these activities, to avoid duplication and to create and place at the disposal of the experts and users a practical and integrated solution with the possibility of immediate implementation.

**3. Basic results expected from the analysis and modelling of the ITT**

- (a) Support for the detailed definition of WP.4 activities, including

creation of an inventory of what has been realized and what should be done in the following areas:

- procedures;
- documentation;
- data elements and codes;
- messages;
- legal aspects; etc.

(b) Support for the coherent development of data interchange systems in the EDI environment and in the other traditional environments (paper environment, etc.).

(c) Informational and didactic support for experts and commercial operators, especially from the countries in transition. ITT's model is itself a result, an output of these analysis and data modelling.

#### **4. Background**

The analysis of the ITT and the development of models, more or less complicated, using more or less sophisticated methods, has been constant preoccupation for WP.4, its Meetings of experts and national delegations.

Each new version, each new approach incorporates the previous experience.

In this context, for a discussion that proposes to establish a new direction for the development of this subject within the framework of WP.4, it is necessary to take into account only the most recent documents submitted to WP.4 by national and regional committees like ROMPRO, SIMPROFRANCE, SITPRO, DEUPRO and the Special Group for Data Modelling of the West European EDIFACT Board.

#### **5. Basic objectives of the ad hoc meeting on international trade transaction modelling.**

In view of:

- the importance of this subject;
- the necessity to avoid duplication within different WP.4 environments and at the level of national delegations;

- the necessity to define in one place, this subject within the programme of work of WP.4 (at present, this subject is distributed in several sections); and
- the necessity of modern and systematic approach, on a permanent basis, to reach a short-term realization,

the ad hoc group should develop proposals and recommendations to GE.2 concerning:

- a WP.4 programme item on the analysis and modelling of ITT;
  - the place of the analysis and modelling of ITT in the context of different activities inside and under the auspices of WP.4 and interface with these different activities;
  - the adopted method for model development;
  - the responsibilities and modalities of work for the development of this activity; and
  - the timetable and mandate for the elaboration of the first version (initial stage) of the ITT model.
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ANNEX II

PROVISIONAL AGENDA OF THE AD HOC MEETING ON  
INTERNATIONAL TRADE TRANSACTION (ITT) MODELLING  
(15-16 July 1993)

to be held in the Palais des Nations, Geneva, starting  
at 10 a.m. on Thursday, 15 July 1993

1. Adoption of the agenda
  2. Information session for GE.1 and GE.2 experts  
(in the morning of 15 July 1993)
    - (a) Synergic Reference Model of ITT                      TRADE/WP.4/R.603  
Presentation to be made by                      TRADE/WP.4/R.603/Add.1  
Mr. B. Stoven (SIMPROFRANCE)                      TRADE/WP.4/R.806
    - (b) Procedures and Activities Chain                      TRADE/WP.4/R.945  
and Message Interface  
Presentation to be made by  
Mr. R. Battersby (SITPRO)
    - (c) Graphic Modelling Language  
GRAPES  
Presentation to be made by  
Mr. T. Buchmann (DEUPRO)
  3. Presentation of other proposals on the  
subject
  4. Development of a draft recommendation to  
the September 1993 session of GE.2
  5. Preparation of a WP.4 programme item on  
the analysis of ITT
  5. Other questions
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### ANNEX III

#### MODELLING AND DEVELOPMENT ENVIRONMENT FOR GRAPES-86 AND GRAPES/4GL "GRADE (VERSION 1.0)"

##### An example of a Computerized Modelling Tool

1. GRADE supports a universal analysis and design method which produces models of organizational structures and software functions designed to provide a basis for prototyping and code generation. It provides simple and quick method of generating GRAPES models and is used as a front-end support of O&M and system engineers. It can be used for the entry of analysis results and for the prompt and direct presentation of intermediate results (also on portable devices).
2. The central feature of the integrated solution provided by GRADE is the graphic language GRAPES. GRAPES is based on a holistic approach designed to cover the entire development process in a unified form, starting with the initial planning considerations in the problem analysis phase right through to the detailed implementation strategy.
3. GRAPES incorporates important basic elements of the requirements engineering and design languages IORL (Input/output Requirements Language), SA (Structured analysis), SADT (Structured Analysis and Design Technique) and SDL (Specification and Description Language).
4. GRAPES enables object-oriented modelling, the use of abstractions for data types and processes, and data modelling using entity-relationship diagrams. Consequently it is ideally suited for use as a specification language for O&M engineers, system engineers and information scientists.
5. GRAPES uses diagrams with a manageable set of graphic symbols to represent models. With the aid of these diagrams it is possible to represent the basic features of a complete system - structure, processes and data - in the form of models which can be continuously refined. The different types of diagram, which are briefly explained below, cover various aspects of the system description.
6. Diagrams for structure and communication modelling:
  - CD - Communication diagrams serve to describe the objects and their communication relationship.
  - IT - Every communication diagram is assigned precisely one interface table. This table describes the structure of the communication path in the form of channels and associated data types.
7. Diagrams for behaviour and process modelling:
  - PD - The behaviour and process objects (projects) and of procedures and functions is defined in process diagrams.

DT - Data tables contain the declarations of constants and variables to

which processes, procedures, functions or modules are applied.

SD - specification diagrams are used to describe interfaces. The call interfaces (parameters) of procedures or functions and the export interfaces of modules can be represented in these diagrams.

8. Diagrams for data modelling:

DD - Data structure diagrams are used to model the structure of data. Both user-defined data sets can be described in these diagrams.

9. Diagrams for representing the declaration hierarchy:

HD - The relationship between the definitions used in the model documents are represented in hierarchy diagrams/model trees.

10. To ensure that the support provided for the implementation of DP systems remains closely tied to practical experience, the existing GRAPES standard modelling language has been extended to include a number of new diagrams, language resources and syntax elements:

SF - Screen form

Diagrams for defining/designing I/O operations, selection formats and menu interfaces.

RF - Report form

Diagrams for defining complex reports.

CM - Comment diagram

A comment diagram can be assigned to every diagram i.e. to every object in the model. These diagrams contain descriptive text in freely selectable form

ER - Entry-relationship diagrams are a subsidiary type of data structure diagram; they are used to define database structures.

DR - These serve to define the present values for the colours used in the screen forms.

11. In order to enable the dynamic checking of the created diagrams, parts of models or entire models, GRADE allows the diagram sequences to run one at a time i.e. object by object, in debugging mode. In this case. the dynamic behaviour of the model can be traced precisely and the contents of variables and databases can be checked at any time.

12. If the model contains dialogue interfaces, these are also included in the run. This means that the interface prototype corresponds in every detail to the real system produced subsequently. Here, too, the modeled database is simulated with its full range of functions. The data entered in a prototype run can be kept for checking purposes in repeat runs.

13. If the syntax analyzer cannot find errors after modelling and if all dynamic inconsistencies have been located and eliminated with the aid of the debugger/prototyper, it is now possible to generate a complete program system on the basis of the modelling result.

14. Technical data

Hardware:

IBM PC 386 and compatible with at least 4Mb  
graphics card supported by Windows (VGA recommended)  
Colour or black/white monitor  
Microsoft mouse or compatible  
Printer supported by Windows  
Memory requirements up to 10 Mb

Software:

MS-DOS V5,0  
Microsoft Windows V3.1  
INFORMIX-ESQL/C V4.10  
INFORMIX-SE V4,10  
Microsoft C V6.0