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TECHNOLOGICAL APPROACHES AND SOLUTIONS

Smart Card

Transmitted by Mr. H. Landau

Attached you will find an informal document, submitted by Mr. H. Landau, founder of the 3T Project.

3T

TRANSNATIONAL TELEMATICS TRANSACTIONS

For

CUSTOMS AND TRANSPORT

A PROPOSAL SUBMITTED BY

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PROJECT 3T – ABSTRACT

The 3T project will provide the evidential proof of major benefits to be achieved through the emulation of paper based customs transit carnets (i.e. SAD, TIR, AAD, etc.) by micro circuit smart cards which will also be used as a secure access device to an IT&T network creating a seamless information chain between the consignor and consignee of goods involving all “actors” thus linking the Trade Community (external domain) to the Governments (internal domain). This network is mandatory for the elimination of fraud mainly due to the misuse of paper documents, minimising border delays and providing complete security in the movement of goods by inland transport. The smart card generic technology can be applied to other applications such as, inter alia, electronic driver license and vehicle registration, communications, points of sale, payment of tolls and real time payment of customs duties as well as migration to other modalities of rail, sea, air and multi-modal transport. 3T can use existing public switched telephone, mobile and satellite communications networks as well as EDI value added networks when they become available such as the DG XXI NCTS scheduled for operation in 2003.

PROJECT 3T – OBJECTIVES

The 3T pilot project objectives are to prove to all interested parties involved with customs administration that benefits will accrue to:

- (a) National Customs Authorities
 - Greatly increased productivity
 - Greatly decreased errors
 - Back office facilitation
 - Procedures
 - Controls
 - Improved statistical reporting
 - Greatly reduced fraud
 - Increased selectivity (inspection)
 - Facilitation of interconnectivity and interoperability
 - In country checking

- (b) Transport Companies and Freight Forwarders
 - Elimination of costly border delays
 - New services for all modes of traffic (air, sea, rail, road)
 - Security, reliability, confidentiality
 - Improved administration and back office procedures and controls
 - Reduced litigation (customs, duties, excise taxes)
 - Connectivity to networks
 - Flexibility (open systems technology)

- (c) Consignors, consignees and guarantee organisations
 - Just in Time (JIT) delivery
 - Improved quality, quantity and availability of information (also applied to a & b above)
 - Electronic funds transfer (EFT) for payments

PROJECT 3T – USER NEEDS AND APPLICATION AREA

1.1 User needs: Current Problems relating to Customs Transit Documents

1.1. Current Problems relating to Customs Transit Documents

The Customs Transit environment is currently based on paper documents produced by different organisations such as the European Union (SAD carnet), World Customs Organization (ATA carnet) and IRU (TIR carnet) among others. This classic paper procedure does not provide for the secure, economic and rapid movement of goods. In the changing economic and structural environment of Europe, processing of paper carnets and resultant problems such as border delays, errors and fraud are increasing and represent losses of many billion ECU's per year.

There is strong motivation for both National Customs Authorities and the Transport and Trade Community to handle the Customs Transit and other trade facilitation problems more effectively and to provide the appropriate services to eliminate fraud, provide total security, minimise border delays and correct other deficiencies inherent in the use of paper documents. The objective is not to eliminate documents but to facilitate documentation in a cost effective manner by making the transition from paper carnets to electronic portable documents – the 3T Smart Card concept.

1.2. The Application

Pure paperwork systems are obsolete because technology can provide many operational advantages at lower cost, on the other hand, pure EDI alone does not enable the level of control required by customs. This control criteria, for automated customs transit purposes, means document authentication, personal identification certification, confidentiality, proving data registration and authorisation, verification and signature.

The only technology existing today which can satisfy these criteria is the Smart Card augmented by a combination of cryptographic technology with EDI VAN services offering access to a central directory of public certificates (Directory X 500 Services) and a central country registry of transit information.

We envisage that Smart Card, technology will be distributed throughout a government's national customs offices with the issuing authorities being the IRU in the case of TIR, the CCC/ICC in the case of ATA and the National Customs Authorities or their assigns in the case of SAD. These issuing organisations, except for the SAD, currently provide an international guarantee chain for payment. The most important aspect of card preparation is the authenticity and signature requirements of customs authorities and the guaranteeing associations. For this purpose a second card must be used for signature and held by the customs offices and guaranteeing associations. This second card will contain the private key which will enable the writing of the signature on the smart card. This process will be undertaken by guaranteeing

organisations raising the necessary carnets. It will also be used by Customs Offices for the signing of clearance certificates. Testing the Smart Card carnet, for automated customs transit must involve data exchange between the customs offices of departure, the company/forwarder involved in sending a shipment to a receiving company in another country, and the customs offices and transit checkpoints along an itinerary and in the country of destination. The truck must also carry delivery/consignment among other documents which can be emulated by the smart card.

The lorry driver will submit to customs clearance centres and border points the smart cards which will contain carnet and goods/journey details. Authentication of these documents at Customs clearance centres and border points can be obtained through access to public certificates which may be available off-line (via earlier distribution of certificates) or on-line to a central directory service.

Each goods shipment will be recorded centrally at a Registry (one per country). The Registry will support the authentication of all messages through access to a directory service. It will also support the tracking and reporting of shipments.

Following this approach fraud should be minimised as the transmission of data between organisations is signed and the signature can be verified by the Customs office.

Using Smart Card security provision, identification can be legally established for people and vehicles where currently evidential security is needed. The ease of reading by the customs officer and/or computer data base can provide the beginnings of an intelligent system to select what is to be investigated and examined. This selection monitoring can be complementary to the emergence of artificial intelligence in the investigative and control process. The Smart Card can provide mobile checks against central files once the vehicle leaves the frontier. The same card can be used for both import and selective export as well as for transit procedures among myriad applications within the inland transport and other fields.

Registration Authorities which address the entry procedures for users subscribing to the service and Certification Authorities which maintain the Directory of certificates are important to the support of this service.

1.3. 3T and Customs Transit

The longer term objective of the 3T Project is to provide a complete solution to the automation of Customs Transit. 3T will develop on-line systems to allow exchange and control of Transit information together with off-line mechanisms to allow local control where data communications services do not exist. The 3T Project will focus on the added value services to be offered to the different "participants" between the consignor and consignee of goods.

The 3T system could also be used to provide other transport related functionalities such as addressing data bases, communications, electronic funds transfer, electronic drivers license and vehicle registration as represented in the INCA and DRIVE Projects. Current information Technology and Telecommunications (IT + T) are sufficiently mature and standardised to implement an automated Customs Transit system that should alleviate the critical deficiencies inherent in the existing paper system. This can be achieved while maintaining the structure of the current carnet issuing and legal/regulatory system allowing a smooth migration towards the 3T Smart Card system.

The 3T system can provide a portable means for interoperability and interconnectivity between National Customs Systems and can function with existing and planned terrestrial, mobile radio (GSM) or satellite communications.

1.2. Market Situation and Prospects

Customs, transit, import and export concerns the EEA, where control is increasingly dependent on modern communications and computer technologies and other economic regions involving the most advanced industrialised countries, the least developed and all others in various stages of development. The ultimate goal is to implement standardised and harmonised customs transit procedures on a global basis. The inhibitor in this process is not technology but rather problems of primarily a policy, procedural and financial nature.

The operational readiness for automation is made possible after years of work in developing trade facilitation standards such as EDIFACT, Smart Card standard, and data communications protocols. There is a growing convergence of technological and economic development which will progressively lead to the broad use of Electronic Data Interchange systems resulting in the so-called paperless and cashless society. For Customs Transit, documents are an absolute necessity for control. However, inefficient paper must be replaced with efficient portable electronic platforms or files to eliminate problems such as border delays, security of information and fraud.

Technology exists and is being developed which can accommodate EEA, pan-European and global solutions. These basic requirements must allow for simplicity, speed, flexibility, reliability, modularity, low cost, ease of computer interface of different standards and of different supplies in different countries, as well as providing appropriate levels of security for the involved parties.

The conditions for implementation of automated customs and trade facilitation must be determined by taking into consideration such factors as national support levels, investment policy and patterns of trade. It is 3T's contention that customs automation and trade facilitation is a process which starts with the orderly and progressive transition to electronic means from today's manual paper procedures. Each sovereign country must adhere to standards for the harmonisation of an evolving automated global customs and trade system. By definition, these standards should apply to both national customs authorities and to all commercial participants in

the trade process such as the consignors, consignees, freight forwarders, transport companies and guarantee organisation among others.

As the automated customs transit and trade facilitation process escalates from national to regional, to global systems, connectivity will be required between national customs computers as well as network management to enable transaction processing wherever it is required. The requirement is an on-line communications system with off-line capabilities that supports decision-making closest to the transaction, and a network architecture that permits the organisational flexibility, efficiency and, especially, the required transaction response time.

The removal of the internal frontiers implies that importers and exporters are able to declare consignments at an external Community border in an E.U. member state other than that in which the authorisation has been granted.

If this facility is to be provided then each E.U. member state would need to have access to details and all authorisations issued throughout the Community. An EDI telecommunications network linking all the customs offices of the member states would be required and the network linking all the customs offices of the member states would be required and the NCTS Pilot Project for customs transit stressing and EDI network between EEA Member States is now in process (DG XXI). The 3T Smart Card concept would greatly simplify the operational requirements of this complex network for both off-line and on-line operation on a highly secure and cost effective basis. In fact 3T has been declared complementary to NCTS.

The 3T Pilot Project is expected to take 24 months and will develop the application software required as a basis for the commercial service. Further work will be required post pilot prior to the launch of the commercial service, this will include:

- Changes to the procedures and applications reflecting the conclusions reached from the validation of the pilot project. This may for example include further carnets not originally addressed in the pilot.
- Implementation of wider infrastructure to significantly widen the scope of the original pilot service.
- Support service and implementation procedures.

We estimate that the initial commercial service will be in place no more than 12 months after the successful completion of the pilot.
