Optimization of the physical control circuit in the Port of Livorno

SMOOTH PORTS project

Analysis and identification of critical issues in the current control circuit and in the ICT system

[Deliverable 4]

Drafted by: Agnese TONOLA, DIR-SPEI
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CONTENTS

The access channel of the port of Livorno, with the Terminal Darsena Toscana- TDT, on the left and the Marzocco tower just standing close to the port waters. The planned Border Inspection Point is scheduled to be built in this area, presently dedicated to the containerized cargo

ABBREVIATIONS

ADM	Agenzia Dogane Monopoli- Monopoli Customs Agency
AIDA	Automazione Integrata Dogane Accise- Integrated Automation Customs Duties
CHED	Common Health Entry Document
CITES	Convention on International Trade in Endangered Species of Wild Fauna and Flora
CUFAA	Comando Unità Forestali, Ambientali e Agroalimentari- Forestry, Environmental and Agri-food Units Unit
DSCE	Documento Sanitario Comune di Entrata- Common Entry Health Document
DVCE	Documento Veterinario Comune di Entrata- Common Veterinary Entry Document
DCE	Documento Comune di Entrata per mangimi e gli alimenti di origine non animale utilizzabili- Common Entry Document for usable feed and food of non-animal origin
IMSOC	Sistema per il trattamento delle informazioni per i controlli ufficiali- Information processing system for official controls
MOCA	Materiali ed oggetti a contatto con alimenti- Materials and objects in contact with food
NRCU	Nuovo Regolamento controlli Ufficiali- New Official Controls Regulations

PCF	Posti Controlli frontalieri-Border Control Points
PIF	Posti Ispezione frontaliera-Border Inspection Points
QP	Quarantine Pest (organismo nocivo da quarantena)
RNQP	Regulated Non Quarantine Pest (organismo nocivo non da quarantena)
SF	Servizio Fitosanitario-Phytosanitary Service
SW	Single Window
TARIC	Tariffa doganale d'uso integrata- integrated Tariff of the European Union
TPCS	Tuscan Port Community System
TRACES	TRAde Control and Expert System
TRACES NT	TRAde Control and Expert System-New Technologies
USMAF	Ufficio sanità marittima, aerea e di frontiera- Health office
ATECO Code	**AT**tività **Ec**onomica classification adopted by the Italian National Statistical Institute (ISTAT) for national statistical surveys of an economic nature Italian translation of the nomenclature of economic activities (NACE) created by Eurostat
Spedimar	Freight forwarders' association
MONI.C.A.	Monitoring & Control Application Livorno Port

1 THE SMOOTH PORTS PROJECT

1.1 Description

The objectives of the SMOOTH PORTS project can be summarized as follows:

● Helping regional / local governments in Europe to develop and implement better policies

● Exchange of ideas and experiences on public policies

● Improve policy strategies and tools

To achieve these objectives SMOOTH PORTS wants to use the different solutions adopted by the ports of the project partners through an exchange of knowledge of the individual realities, of the effective tools and best practices that are being used and those that could be adopted.

Here are listed the key focuses:

● search for optimal procedures for customs clearance of goods in compliance with the common legislation in force both EU and governments, making their processing quick and avoiding unnecessary burdens for the environment and people taking into account that the legislation is increasingly "common" .

● solutions for information flow technology and communication of the various port activities linked to both traffic and their measurement in terms of pollutant production, and energy consumption (and consequently production of pollutants) linked to web communication.

● which alternative fuels can power port activities of the future?

● which information and documents are necessary and / or essential and which are duplicated and / or redundant in the communication and goods transfer systems

● comparison between the strengths and weaknesses of the respective political instruments can help improve the tools for territorial political decisions of the partners involved.

1.2 Partners and objectives

● LP - Free Hanseatic City of Hamburg - Ministry of Economy, Transport and Innovation (Coordinator)

● PP2 - Hamburg Port Authority - Marketing

● PP3 - Port System Authority of the Northern Tyrrhenian Sea

● PP4 - Seaport of Nantes

● PP5 - Municipality of Monfalcone

● PP6 - Varna region

Objective 1) Make customs clearance procedures for goods more efficient to reduce road traffic and CO2 emissions

Responsible partner: Free Hanseatic City of Hamburg - Ministry of Economy, Transport and Innovation (Coordinator)

Objective 2) Optimization and reorganization of control procedures and IT tools and reduce CO2 and pollution associated with traffic congestion at the port due to controls on goods.

Responsible partner: Port System Authority of the Northern Tyrrhenian Sea (Livorno)

2 FOCUS ON OBJECTIVE 2

This chapter explains the methodology used and the tools for achieving the Objective pursued by the Port System Authority of the Northern Tyrrhenian Sea "Optimization and reorganization of control procedures and IT tools and to reduce CO2 and pollution associated with traffic congestion at the port due to controls on goods ". It also provides an overview of the structure of the analysis developed, the sections of which will then be explored in the course of this work.

2.1 Methodology adopted and structure of the analysis

The optimization and reorganization of the control procedures require a careful analysis of the state of the art, with reference to the actors directly involved (control bodies) in the physical checks of the goods, to the type of goods handled in the Port of Livorno and consequently controlled, as well as the current movements that the individual control bodies must make in order to physically check the load at the visiting points.

Starting from the analysis of the AS-IS (and from the georeferencing of the information) it is therefore possible to identify the critical issues currently encountered (in terms of both CO2 emissions due to the movements carried out in port and poor coordination between the various bodies involved in the controls of the goods).

Identifying concrete critical issues makes it possible to analyze possible solutions which, if introduced, facilitate control activities, reduce the physical movements required and make all activities related to the "physical control chain" more sustainable over time.

For sake of clarity (and following the logic described in the above) the study has been divided into sections, which are then detailed in the following chapters:

1. Analysis of freight forwarders and port of Livorno traffic

2. Profile of control bodies and physical circuit of controls in the Port of Livorno

3. Territorial analysis: Georeferencing of information

4. Database design and updating proposals

5. Analysis and identification of critical issues in the current control circuit and in the ITC system

6. Proposals for improvement

2.2 Tools used

Both the digital tools and other tools used in the processing of the analyzes and related results are indicated below:

• TPCS - for analysis on freight forwarders and transported goods

• TRACES NT IT platform of the European Commission - for further information on goods control activities

• AIDA (Integrated Automation Customs Excise) - for further information on the goods handled

• GTS3 (Gate Transit Security) - for analysis on the transit of heavy vehicles

• Other IT tools

• ArcGIS - for territorial analysis and georeferencing of information

• TELEMACO - for analysis on the registry of shipping companies

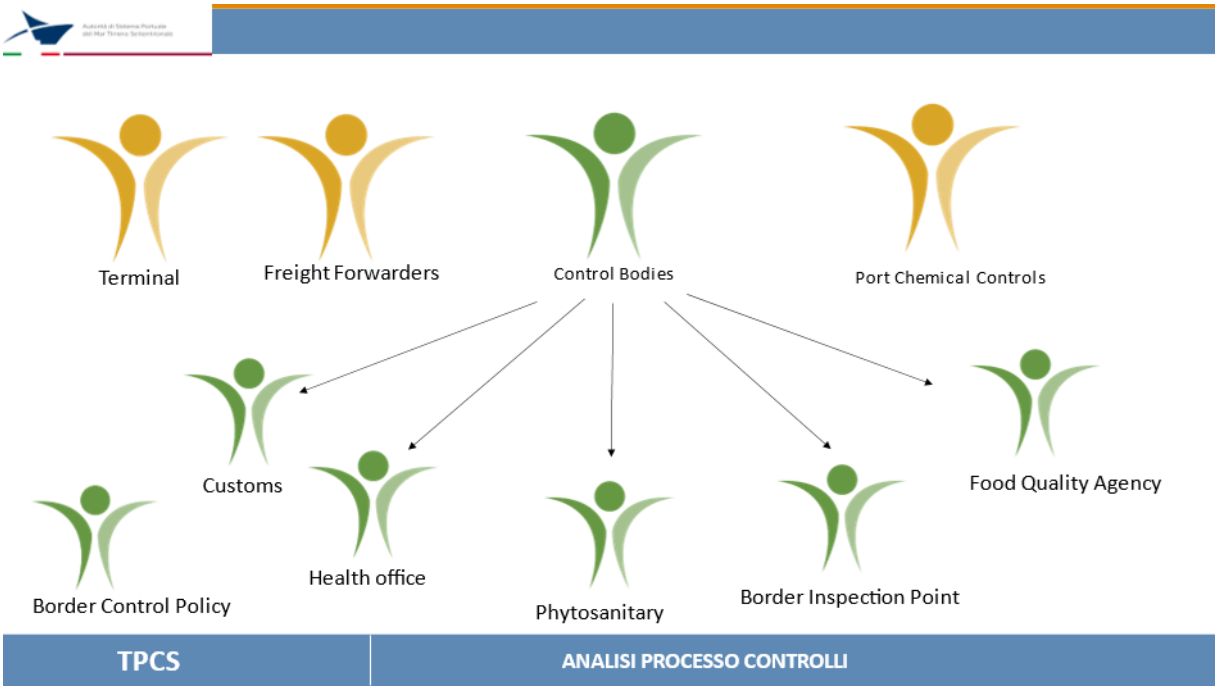
• Dbdiagram.io - for setting the database schema, to be populated to periodically carry out the analysis

• Draw.io - for flow charts

• TARIC - to correctly associate the goods with the control body in charge

11.1 Analysis of the procedure for carrying out the checks on the container yard (focus on information flows)

The process of forecourt controls involves a variety of stakeholders, which are summarized below:



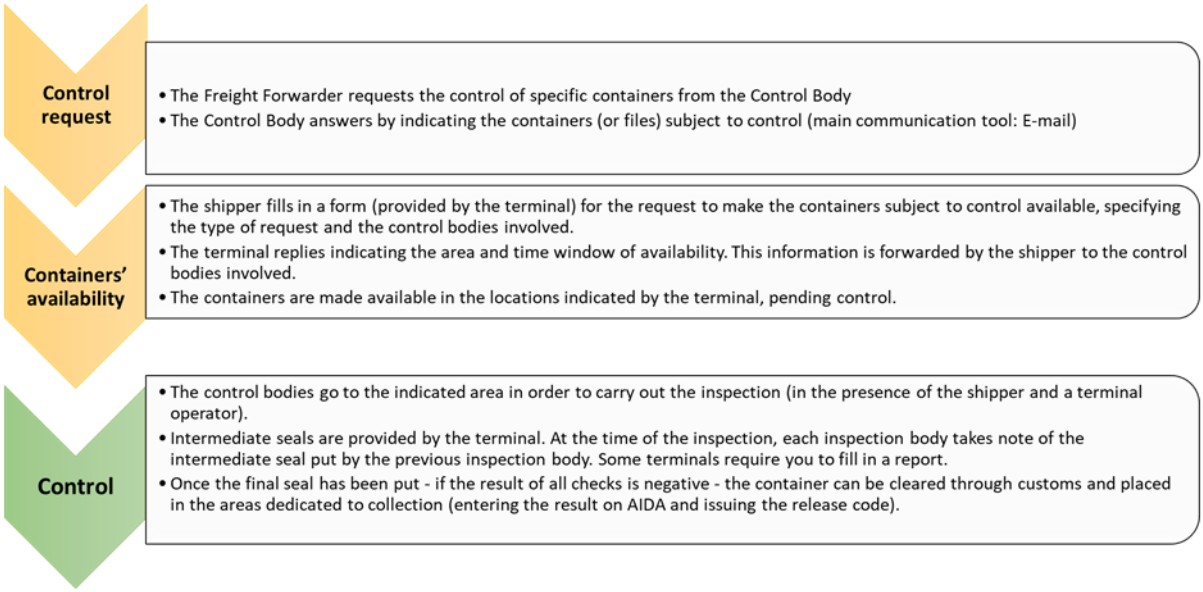
Picture 1 – involved stakeholders

The information flow concerning the requests for physical inspections of the goods can be split into three macro-phases:
1. the first refers to the opening, by the responsible forwarder, of the control practices at the various bodies involved in the physical inspections of the goods. The request for a case number usually takes place through the various software available to the entities (eg TRACES NT AND NSIS for USMAF / PCF).

2. The second phase refers to the request to make the container available in the yard (request that starts from the shipper, addressed to the terminal where the goods are stored). Following this request, the terminal makes the load available to the control bodies (in the indicated time slot) in order to carry out the required inspection activities. In the event that one or more entities do not physically show up for control (in the time band indicated by the terminal), the load will be made "unavailable" and a new request for availability must be made by the shipper.

3. The third phase, on the other hand, refers to the actual inspection activity, which involves the intervention of the various control bodies (according to time slots established with the local customs offices), in the presence of the responsible forwarder and a contact person of the terminal.

The AS-IS process is reported below, distinguishing the specific case of AGECONTROL, which currently provides for a different information flow compared to the other control bodies:



Picture 2 – Control Bodies Flows

The current scenario is marked primarily by poor coordination between the various control bodies and between the control bodies and the port terminal. This situation generates not only inefficiencies on the import / export process of the goods (longer times and costs), but also a negative impact in terms of CO2 emissions (also caused by the absence of concurrent controls on the goods).

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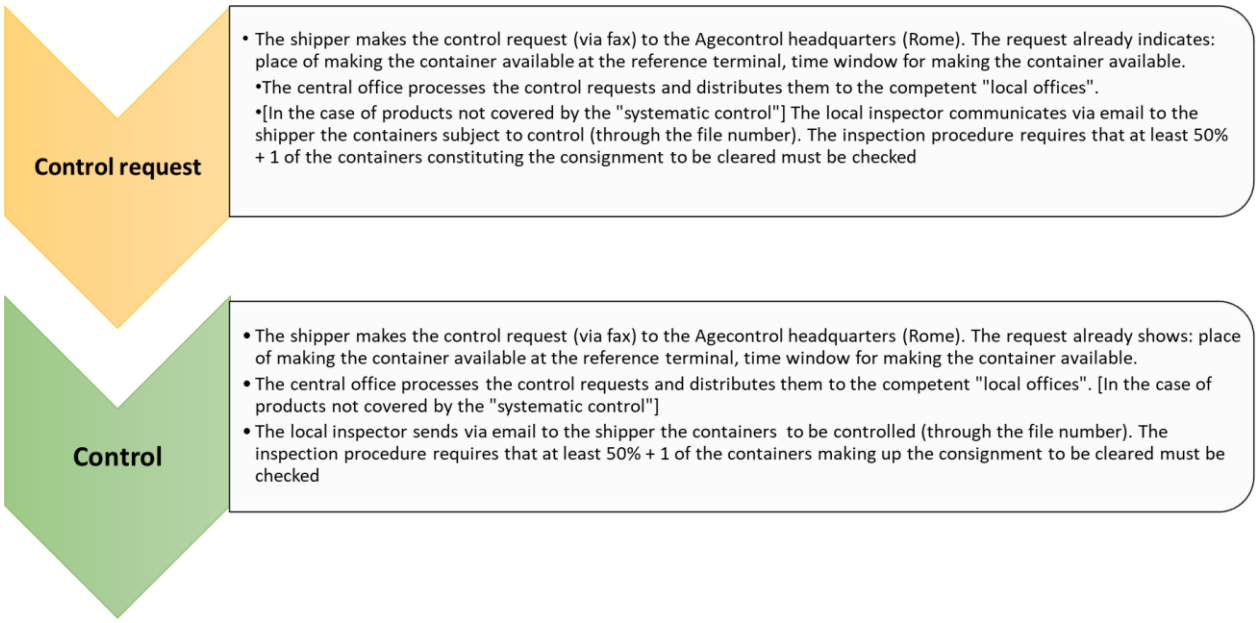
To this critical issue, others are added that we summarize below:

1. Frequent use of mail / telephone, preventing a real dematerialization of information and the sharing of the same among several actors involved.
2. Compilation of (different) forms for requesting the availability of goods in the yard. Each terminal adopts its own forms in different formats / channels (eg via email, via the web, etc.).
3. Absence of precise and shared rules between control bodies and terminals for visits to be carried out in the apron.
4. Poor communication between the control bodies also for types of data considered particularly relevant (example: the number of the seal to be applied to the container at the end of each inspection activity).
5. Communications are often bilateral, with intermediation by the shipper. This duplicates the information flows and creates possible errors and coordination difficulties in the process.



*Each control request matches one certificate, but in each certificate more than one container can be included.

Picture 3 – As-Is flow Agecontrol