United Nations e-Business Standards and Tools for Sustainable Agriculture Trade

Specifications for an Electronic Quality Certification System for Fresh Fruit and Vegetables

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Contents

1. INTRODUCTION

1.1 Objective

This document presents the eQuality certification system processes and business requirements for fresh fruit and vegetables covered by marketing standards. It provides a high level, functional description of the main business processes to be managed by an electronic conformity certificate management system for such goods. This functional system specification can be used as a template for the technical development and implementation of such an eQuality system.

This functional specification has been developed with support of the German Bundesanstalt fuer Landwirtschaft und Ernaehrung (BLE) and based on the German eQuality Management System.

This document describes the:

- High-level end-to-end business processes
- Sub-processes
- Main entities and their state transitions

The following major process threads are described in this document:

- Risk analysis process
- Decision-making process
  - Start / take decision
  - Manage adjustments
  - Take decision & notify
- Conformance checking process
  - Handle control results, including:
    - Reporting compliance, defects, waivers, split lots
    - Automatic exchange of electronic data with national customs authority (conformity certificate, waiver declaration and certificate of non-conformance data)
    - Automatic exchange of electronic data with competent authority in the country of importation (conformity certificate data)
  - Manage complaints process - follow-up inspection of the defective lot (reinspection)
- Issuance of (paper) conformity certificates process

1.2 Intended Audience

Intended audience for this document:

- Competent authorities and UN agencies that wish to design and implement electronic conformity certificate management systems for fresh fruit and vegetables

- Any person responsible to plan or oversee business processes, requirements, functional specifications or the testing of conformity certification systems for fresh fruit and vegetables

1.3 Abbreviations and Acronyms

The following table provides a list of the principal abbreviations and acronyms used in this document.

Abbreviation/Acronym	Definition
CA	Competent Authority
eQCert System	Electronic Quality Certification System
RfC	Request for Certification

2. HIGH LEVEL SYSTEM OVERVIEW

2.1 Actors

Exporters request certificates directly in the eQCert system. Afterwards, they submit customs declaration data to the national customs authorities. Additionally, they participate in the transportation of goods and their presentation to the competent authorities.

Note: Exporters can use representatives to request certificates on their behalf

Competent authorities are the authorities issuing conformity certificates, non-conformity reports or waivers in the eQCert system. They also interact with economic operators in the process of presenting and inspecting the goods, and national customs authorities by sending certificates or waiver data.

National customs authorities represent the customs authorities interacting with the competent authority via the eQCert system in order to request and receive conformity certificate information or waiver declarations. They also interact with exporters (or their legal representatives) by receiving and processing the relevant customs declarations.

2.2 Export - High Level End-to-End Process

1. Risk Analysis Process	
Brief Description	The exporter initiates the certification process by requesting a conformity certificate for a consignment from the competent authority of the exporting country. The RfC is then registered and passed on to the competent authority. Based on the RfC "control date" the eQCert system will either initiate the risk analysis process or delay that process. Where the request control date is not within the time limit set by the competent authority (e.g. within the next 48 hours), the system will start the timer for automatic initialization of risk analysis and record the risk analysis results (risk or no risk identified). The system will inform inspectors of the kind of controls that could be carried out and inspectors decide which to use. Based on the outcome of the risk analysis process the system will indicate whether: • The RfC has gone through the risk analysis and is now being evaluated by the competent authority of the exporting country • The RfC has gone through the risk analysis and a conformity certificate or a waiver will be issued automatically In the case of the latter, if the exporter has approved trader status, thus benefiting from a reduced level of controls or exemption, then an automatic issuance of conformity certificate or waiver is enabled in the system. In this case, the eQCert system should automatically check whether the exporter is an approved trader (i.e. an authorized trader classified in the lowest risk category) and if their authorization is still valid. **Outcome:** Risk analysis completed, results recorded and communicated. • Risk identified, risk analysis results recorded indicating the recommended control types, the lots that should be checked and the sample size. The system will assign status "risk identified" to the RfC and to each lot for which the system identified a certain level of risk • The competent authority or the competent inspection body should maintain the catalogue of sample sizes (number of packages to be taken to check the lot for conformity). The eQCert system may include a function for manual or automatic selection of sample size

	• No risk. conformity certificate/waiver may be issued automatically or pending final decision by certification officer
Actor(s)	Primary: Competent authority Secondary: Exporter
Pre-Conditions	Exporter submitting an RfC

Basic Flow of Events			

Actor(s) Actions	**Result/System Response**		
eQCert System	Automatic	1.1	Receive RfC and accompanying documents (scanned documents) Validate RfC data, set RfC status as "requested" Verify "control date"
		1.2	Initiate risk analysis if the control date of request is within the time limit set by competent authority (e.g., less than 48 hours) or upon expiration of "timer for initiation of risk analysis", if such function is enabled.
		1.2.1	Set RfC status to "risk identified" if relevant
		1.2.2	Issue conformity certificate or waiver automatically if no risk (for example, when the exporter has the status of approved trader) and the automatic issuance function is being enabled within eQCert system. Set RfC status as "issued"

2. Decision-Making Process

2.1 Start Take Decision

Brief Description	The "start take decision" process is the first step of the decision-making process. The timer to "take decision" is started as soon this step is initiated. The decision-making officer should perform the following tasks: • Query information about requests for certification using a set of pre-defined "control completed" criteria • Display all the information provided by the exporter (requests and accompanying documents), including the result of risk analysis and the status of each lot • Review the RfC data, conditions and criteria • Evaluate the RfC and take a decision on how to proceed The decision-making officer uses the information provided by the eQCert system to perform the relevant checks and **decide if additional information is needed and/or if the RfC requires adjustments.** The final result of this process will be one of the following outcomes: • The decision-making officer concluded that the RfC data requires adjustments and will initiate the "**manage adjustments**" process. • The decision-making officer concluded that the RfC data does not require adjustments and will initiate the "**take decision**" process • The timer expires without the decision-making officer initiating the "start take decision" process, meaning the system will **automatically make the decision** to proceed with the recommended controls of all lots
Actor(s)	Competent authority: Decision-making officer
Pre-Conditions	The take decision process starts once the RfC is accepted by the eQuality system and there is a risk analysis result indicating recommended control types and the lots that should be checked

Basic Flow of Events

Actor(s) Actions	Result/System Response

Decision-Making Officer	View request for eQCert	2.1.1	The detailed view of all information that the exporter has provided as well as the result of risk analysis is displayed
			Start "timer to take decision" if such a time limit is defined in the national legislation
eQCert	Control decision: "selected for control"	2.1.2	Stop "timer to take decision" The eQCert system will automatically confirm the control decision: "selected for control" on all lots selected for control at the expiration of time limit set for "take decision"

2. Decision-Making Process

2.2 Manage Adjustments

Brief Description	The conditional process "manage adjustments" starts when the decision-making officer decides that the RfC data requires adjustments and initiates the "**manage adjustments**" process.
	
	The decision-making officer may perform one of the following adjustments:
	
	• At the level of the RfC
	
	   ◦ Edit the RfC
	
	   ◦ Upload additional accompanying documents to the RfC
	
	   ◦ Request accompanying documents and/or additional information
	
	• At the level of a 'lot'
	
	   ◦ Edit one or several lots of a selected RfC
	
	   ◦ Split lot function is mainly used in the follow-up after non-conformities, especially when sub-quantities of the lot are brought into conformity
	
	Final situation:
	
	• The RfC is updated and the decision-making officer can initiate the "**take decision & notify**" process

Actor(s)	Competent authority: Decision-making officer Exporter eQCert system - Automatic
Pre-Conditions	• Information from the exporter for adjusting the RfC and/or individual lot is available • Additional documents are available for submission

Basic Flow of Events

Actor(s) Actions		Result/System Response	
Decision-Making Officer	Edit the RfC	2.2.1	RfC updated. No change in the RfC status
Decision-Making Officer	Upload additional accompanying documents to the RfC	2.2.2	RfC updated. No change in the RfC status
Decision-Making Officer	Request accompanying documents and/or additional information	2.2.3	Notification sent to exporter. RfC updated. No change in the RfC status
Exporter	Submit requested accompanying documents and/or additional information	2.2.4	Notification sent to competent authority. RfC updated. No change in the RfC status
Decision-Making Officer	Split lot	2.2.5	Split lot and update information on lots
Decision-Making Officer	View history of the RfC	2.2.6	The history of the RfC is displayed
Decision-Making Officer	View history of the lot	2.2.7	The history of the RfC lot is displayed

2. Perform Conformity Checks

3.1 Handle Control Results

Brief Description	The process starts when the decision-making officer confirms the decision to control one, several or all lots in the RfC or when the system automatically confirms the decision to control all lots. The inspector should perform the controls as indicated by the eQCert system for each individual lot "selected for control". The following types of checks may be performed: • **Documentary check** - checking the accompanying documents, all necessary particulars about produce, including the country of origin • **Identity check** – checking whether the lot presented complies with the information in accompanying documents and whether labelling and accompanying documents comply with each other. • **Physical check** – taking samples as indicated by the system (sampling plan) and assess the lot (produce meet the requirements of the marketing standards including the labelling) Based on the outcome of the controls the inspector will record the results of the checks performed on verified lots by selecting from the drop-down list the control result as follows: • If the lot has been found to conform after control, the inspector should select the control result "conform". The system will change the status for this lot to "conform". An **eQuality certificate can be issued for this lot**. • If the inspector decides to waive the control on the lot, they should select the control result "waiver". The system will change the status for this lot to "waived". A **waiver declaration can be issued for this lot**. • If the inspector decides to cancel the control on the respective lot (the product is not subject to marketing standards), the inspector should select the control result "cancelled". The system will change the status for this lot to "cancelled". An **eQuality certificate** or waiver **cannot be issued for this lot**. • If the lot does not meet marketing standards, the inspector should select the control result "**defects/non-conformities**" and provide information about the type of defects by selecting one or several types of defects from the drop-down list, providing comments/explanations about the defects listed. The system will mark the control as "initial inspection" and initiate the complaint process. When defects are detected, the inspector shall record the respective percentage of the produce not in conformity with the standard by number or weight. A

non-conformity report is issued. In the detected state, the lot cannot be exported. The decision whether the lot will be brought into conformity is up to the exporter. The inspector may enter a date for a possible follow-up inspection.

- If only a part of the lot does not meet the marketing standards and the rest conforms, the inspector may split the lot so as to allow for the new lots to be processed:

  - Sub-lot that meets the quality requirements:

    - Capture information about the sub-lot that meets the quality requirements (number of packages, type of packaging, weight etc.)

    - Record control results: "conform"

  - Sub-lot that does not meet the quality requirements:

    - Record (initial) control results: "defects"

    - Record complaint providing information about:

      - **Defects/non-conformities** and the percentage found

      - **Reasons of complaint**

      - **Follow-up actions**, if the compliance of produce with the standard is possible by a change in marking or by re-grading

    - Issue non-conformity report and notify trader about the defects, rejection reasons. Information and how they can bring the respective product(s) back into conformity (if possible) may be part of the oral advice

The final result of this process is the following:

- All lots have the status "conform" and the RfC has the status "control completed". An electronic conformity certificate will be automatically issued and the RfC will move to status "issued"

- All lots have the status "waived" and the RfC has the status "control completed". An electronic waiver declaration will be automatically issued and the RfC will move to status "waived"

- Some lots have the status "conform" and others "waived". The RfC has the status "control completed". An electronic conformity certificate will be issued just for the lots with status "conform". An electronic waiver declaration will be issued for the lots having the status "waived". The RfC will move to status "issued"

	• Additional steps are needed and will be performed as a follow-up on initial controls. The inspector has to initiate the "manage complaints" process.
Actor(s)	Primary: Competent inspection body – Inspector
Pre-Conditions	The decision-making officer confirmed decision to perform controls

Basic Flow of Events

Actor(s) Actions			Result/System Response
Inspector	View RfC	3.1.1	The detailed view of all information that the exporter has provided as well as the result of risk analysis is displayed
Inspector	Control results • Control result "conform"	3.1.2	Change status of lot to "conform" If all lots have the status "conform" the RfC status is changed to "control completed" and an electronic conformity certificate generated for all lots in the RfC If one or several lots have the status "conform" and the other lots have the status "waived" the RfC status is changed to "control completed" and: • an electronic conformity certificate may be generated for the lots with the status "conform", and • an electronic waiver declaration may be generated for all lots with the status "waived"
Inspector	Control results • Control result "waiver"	3.1.3	Change status of all lots to "waived" If all lots have the status "waived" the RfC status is changed to "waiver" and an electronic waiver declaration may be generated for all lots in the RfC

Inspector	Control results • Control result "defects"	3.1.4	Notify exporter about rejected lots and defects. Initiate complaint process. If the compliance of produce with the standard is possible by a change in marking, the exporter will be informed
Inspector	Split lot	3.1.5	Split lot and update information on lots
eQCert	Automatic notification	3.1.6	Exporter is notified about the issuance of the electronic "conformity certificate" and/or electronic "waiver declaration"
eQCert	Automatic exchange of electronic data with national customs authority	3.1.7	Conformity certificate data and waiver declaration data is automatically exchanged with customs
eQCert	Automatic exchange of electronic data with competent authority in the country of importation	3.1.8	Conformity certificate data automatically exchanged with competent authority in the country of importation

3. Decision-Making Process

3.3 Take Decision & Notify

Brief Description	Based on the outcome of the RfC evaluation process, the decision-making officer will record the control decision on all requests for certification with the status "risk identified". The decision-making officer may decide to confirm the decision to control all the lots of the RfC or certain lots. The system will notify the inspectors assigned to/responsible for controls to be carried out at the "place of control" of the decision to perform the controls. The result of the risk analysis will serve as support for the control decision.

	The decision-making officer may also decide to not check/waive the controls on all or certain lots of the RfC. A justification for such decision should be provided together with an indication regarding the validity of the "waiver declaration" which will be generated for the respective lots.
	The decision-making officer may also decide to cancel the controls on certain lots of the RfC (e.g., if the product is not subject to marketing standards or where a request for cancellation has been received from the exporter). A justification for such decisions should be provided. The system will change the status for the respective lot to "cancelled and an eQuality certificate cannot be issued for this lot. If all lots have to be cancelled, the RfC itself will be cancelled.
	The decision-making officer in consultation with the inspector can decide to select only part of the lots for control and waive control on the remaining lots.
	Final situation:
	• Decision-making officer to confirm the level of risk and the decision to perform recommended controls on all or certain lots of a RfC. The RfC can now be checked by the inspector
	• Decision-making officer to waive the control on all or certain lots of a RfC
	• Decision-making officer to cancel the control on all lots. The RfC is cancelled. This will terminate the conformity certification process
Actor(s)	Competent authority: Decision-making officer
Pre-Conditions	The decision-making officer initiated the "start take decision" process

Basic Flow of Events

Actor(s) Actions			Result/System Response
Decision-Making Officer	Confirm decision • Confirm "control decision" as "selected for control"	2.3.1	The system will automatically notify the inspectors assigned to/responsible for controls to be carried out at the "place of control"

Decision-Making Officer	Downgrade risk • Select all lots • Change "control decision" to "waiver" • Select "waiver reason" • Input "valid to"	2.3.2	Change status of all lots to "waived" Change status of RfC to "waived" Generate "waiver declaration" Notify exporter about the waiver Notify customs about the waiver. Exchange eWaiver data with customs system
Decision-Making Officer	Downgrade risk for certain lots • Select lot for which a risk downgrade is applicable • Change "control decision" to "waiver" • Select "waiver reason" • Input "valid to"	2.3.3	Change status of selected lots to "waived" RfC status will remain unchanged Generate "waiver declaration" for selected lots Notify exporter about the waiver for selected lots Notify customs about the waiver for selected lots
Decision-Making Officer	Decision to cancel RfC • Select all lots • Change "control decision" to "cancel" • Select "cancellation reason"	2.3.4	Change status of selected lots to "cancelled" Change status of RfC to "cancelled" Notify exporter about the cancellation of RfC
Decision-Making Officer	Decision to cancel certain lots • Select lot for which a cancellation is applicable • Change "control decision" to "cancel" • Select "cancellation reason"	2.3.5	Change status of selected lots to "cancelled" Change status of lot to "cancelled" Notify relevant parties

3. Perform Conformity Checks

3.1 Manage Complaints Process - Follow-up Inspection of the Defective Lot (Reinspection)

Brief Description	The process starts when the inspector records defects identified in the initial inspection. Based on the outcome of the follow-up inspection, the inspector will record the result of controls. Final situation: • If the lot has been found to conform after the follow-up inspection, the inspector should select the control result "conform". • If the exporter didn't manage to bring the products in compliance with the standard, the inspector should select the control result "non-conform" and reject the issuance of an electronic conformity certificate for the respective lot. A non-conformity report is issued for the respective lot
Actor(s)	Primary: Competent authority – Inspector
Pre-Conditions	The decision-making officer has confirmed decision to perform controls

Basic Flow of Events

Actor(s) Actions			Result/System Response
Inspector	View request for eQCert	3.2.1	A detailed view of all information provided by the exporter, the result of the risk analysis and information about non-conformities is displayed
Inspector	Control results • Control result "conform"	3.2.2	Change status of the lot to "conform" If all lots have the status "conform" the RfC status is changed to "control completed" and an electronic conformity certificate is generated for all lots If one or several lots have the status "conform" the RfC status is changed to "control completed" and: • an electronic "conformity certificate" may be generated for the lots with the status "conform", and • an electronic "waiver declaration" may be generated for all lots with the status "waived", and

			• an electronic "non-conformance report" may be generated for each lot with status "non-conform" so as to facilitate the follow-up process
Inspector	Control results • Control result "non-conform"	3.2.3	Change status of lot to "non-conform" If one or several lots have the status "non-conform" the RfC status is changed to "control completed" and: • an electronic "conformity certificate" may be generated for the lots with the status "conform", and • an electronic "waiver declaration" may be generated for all lots with the status "waived", and • an electronic "non-conformity report" may be generated for all lots with status "non-conform"
eQCert	Automatic notification	3.2.4	Exporter is notified about the issuance of the electronic "conformity certificate" and/or electronic "waiver declaration" and/or electronic "non-conformity report"
eQCert	Automatic exchange of electronic data with national customs authority	3.2.5	Conformity certificate data and waiver declaration is automatically exchanged with customs
eQCert	Automatic exchange of electronic data with competent authority in the country of importation	3.2.6	Conformity certificate data automatically exchanged with customs

4 Issuance of Paper eQuality Certificates and/or Waivers	
Brief Description	The conditional process "issuance of paper eQuality certificate and/or waivers" starts only if a paper eQuality certificate and/or waiver is requested by the exporter and/or national customs authority. Based on the outcome of quality controls the certifying officer issues the electronic conformity certificate and/or waiver. Output:

	• An electronic conformity certificate/waiver reference number is generated, and an electronic conformity certificate/waiver is created
	• The exporter is notified about the issuance of the electronic conformity certificate/waiver and a PDF document is provided in the exporter's electronic workspace
	• Conformity certificate/waiver data is automatically exchanged with customs. The dataset to be exchanged is defined at the national level
	• Conformity certificate/waiver data is automatically exchanged with the competent authority in the country of importation, where a bilateral agreement for facilitation of such information exchange is in place
	• If the exporter needs a paper conformity certificate with a signature and stamp for customs clearance or to be shared with the importer, the certifying officer will print, sign and stamp the paper conformity certificate. The system may generate and print a QR-code to replace the signature and stamp.
Actor(s)	Primary: Competent authority – Certifying officer
Pre-Conditions	The inspector completed the controls, all products meet the marketing standards

Basic Flow of Events

Actor(s) Actions			Result/System Response	
Certifying officer	View request for eQCert	4.1	The detailed view of all information that the exporter has provided as well as the result of risk analysis and controls is displayed	
Certifying officer	Issue paper eQCert	4.2	A paper conformity certificate/waiver may be printed	

2.3 eQuality System – Supporting Processes

| eQuality Supporting Processes/ Macro Process	Process	Process Description/ Requirement Specification	Stakeholders Involved
Managing Reference Data	1. Competent authority maintaining the **reference data** used in the eQuality system	The competent authority is responsible for the management of the eQuality reference data (code lists). The following code lists should be maintained by the eQuality system: • UN/CEFACT, ISO (country codes, units of measure, package kind, etc.) • eQuality system specific (recognized competent export inspection bodies, bilaterally agreed requirements, inspectors assigned for controls by locations, risk level, inspection/control types, refusal reasons, decision conclusion, etc.) The competent authority may use in the eQuality system other code lists such as: • Customs specific code lists (e.g. customs offices, HS codes/combined nomenclature, etc.)	Competent authority: Reference data administrator
Managing Database of Products Covered by Marketing Standards	2. Competent authority maintaining a **database of products** covered by marketing standards	The competent authority is responsible for the management of the **database of products** covered by marketing standards. The competent authority should assign a HS / combined nomenclature code to each product. The competent authority should assign one or more marketing standards to each product, as set by: • importing country in compliance with the bilaterally agreed requirements and marketing standards (e.g. UNECE standards, or national product specific marketing standards or general marketing standards)	Competent authority: Reference data administrator

eQuality Supporting Processes/ Macro Process	Process	Process Description/ Requirement Specification	Stakeholders Involved
		• exporting country standards (in the absence of bilateral agreements) e.g. UNECE standards	
		The following information should be recorded in the products database:	
		• HS / combined nomenclature code (selection from HS / combined nomenclature)	
		• Product name, in national language(s)	
		• Product name, in English	
		• Scientific name	
		• Synonym (alternative names for the product also used in Trade)	
		• Product group (selection from list: FFV)	
		• Applicable standards (selection from the list: UNECE and/or national product specific marketing standards, general marketing standards)	
		• Valid from	
		• Valid to	
Managing Database of Traders	3. Competent authority maintaining a **database of traders** covered by marketing standards	The competent authority is responsible for establishing and maintaining a database of **traders covered by** marketing **standards,** classifying traders in risk categories. The following information may be included in the **traders database**: • Registration number • Name and address • Trader role(s): importer, exporter, packer etc.	Traders competent authority: Reference data administrator

eQuality Supporting Processes/ Macro Process	Process	Process Description/ Requirement Specification	Stakeholders Involved
		• Trader size: small, medium, large	
		• Risk ranking: information needed for its classification in one of the risk categories (including indicator if is an approved trader to benefit from reduced level of controls/exemption)	
		• Additional information, e.g. existence of a quality assurance system or self-check system related to conformity of marketing standards	
		• Information concerning findings made during previous checks of each trader (continuously update the trader's database with information collected during conformity checks): results of checks, non-compliances, sanctions applied	
Managing Database of Approved Traders	4. Competent authority maintaining a **database of approved traders** covered by marketing standards	The competent authority is responsible for establishing and maintaining a database of **approved traders**. The competent authority may authorize traders who are classified in the lowest risk category and who provide special guarantees of the conformity to marketing standards to self-check and sign the conformity certificate. **Generic workflow for authorization process** • Trader applies for the authorization • Competent authority is checking the criteria and conditions such as: ○ Trader has inspection staff who have received training approved by the competent authority ○ Trader has suitable equipment for preparing and packing produce	Traders competent authority

| eQuality Supporting Processes/ Macro Process	Process	Process Description/ Requirement Specification	Stakeholders Involved
		• Trader commits to carry out a conformity check on the goods they dispatch and have a register recording all checks carried out • Competent authority approves application and grants authorization • Competent authority suspend authorization where the authorized trader no longer complies with the requirements for authorization	

Workflows

1. Risk Analysis Process
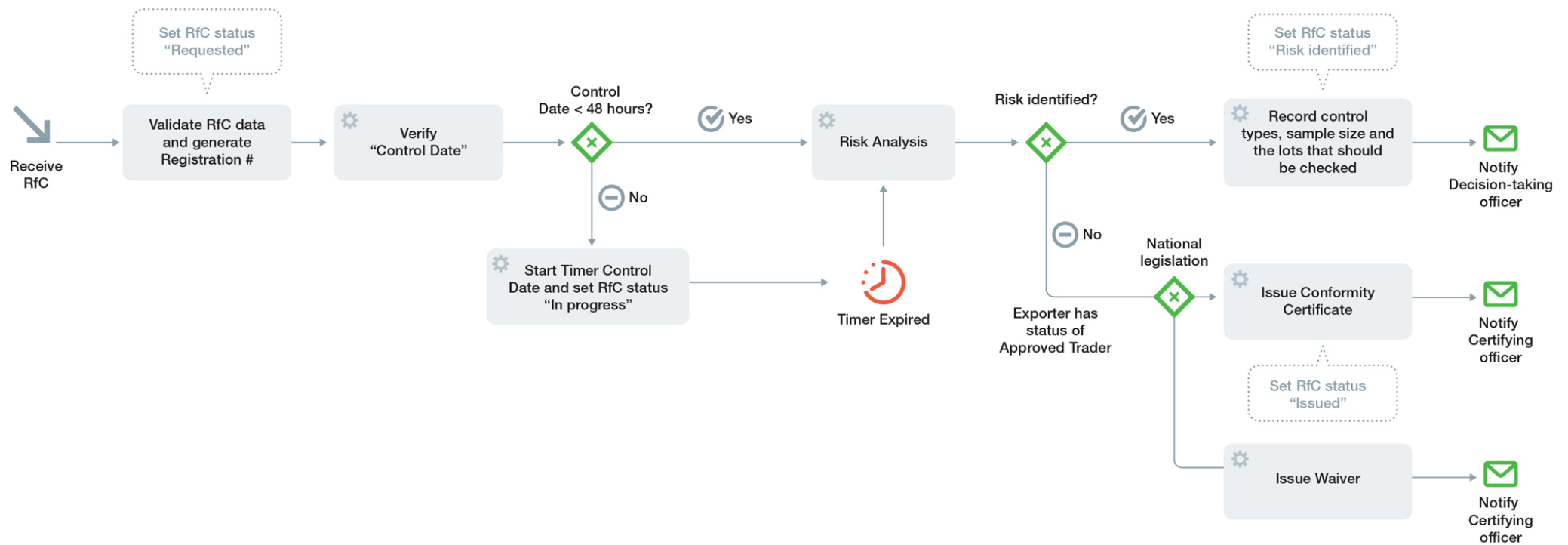
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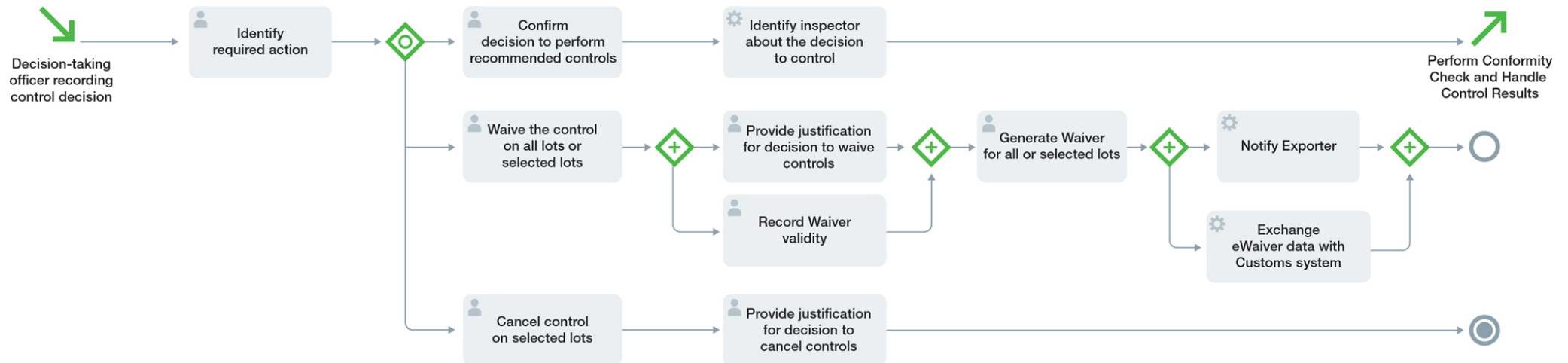
2.1 Start Take Decision
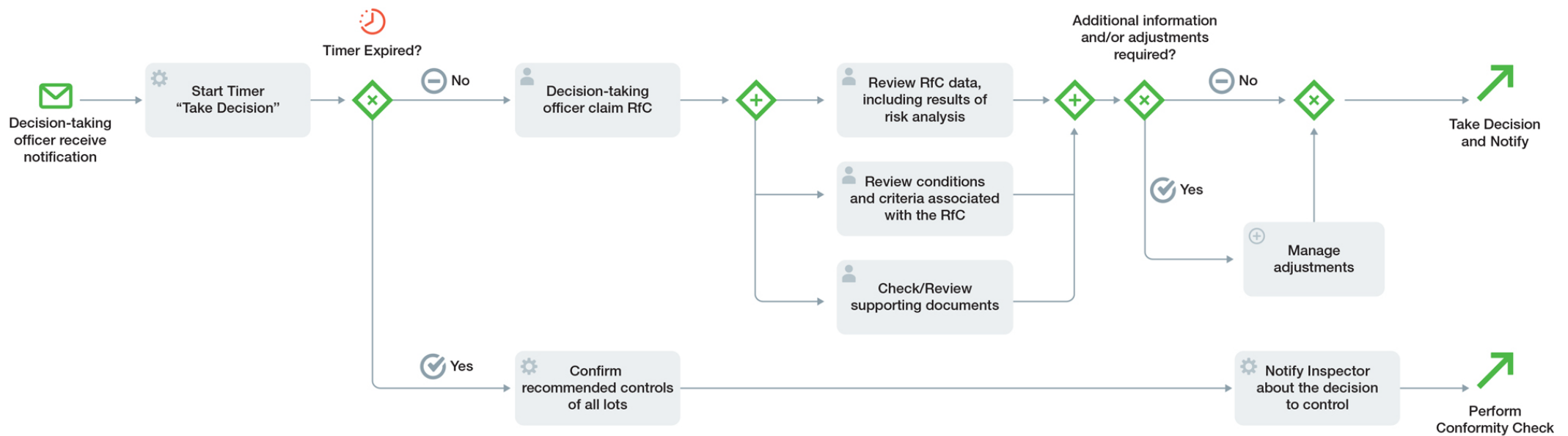
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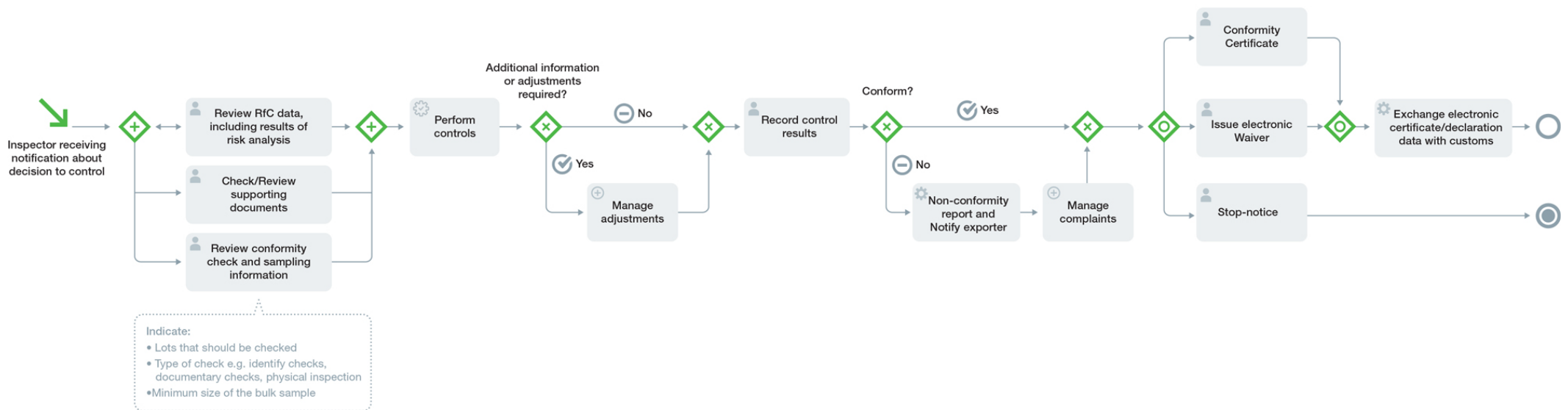
2.2 Manage Adjustments
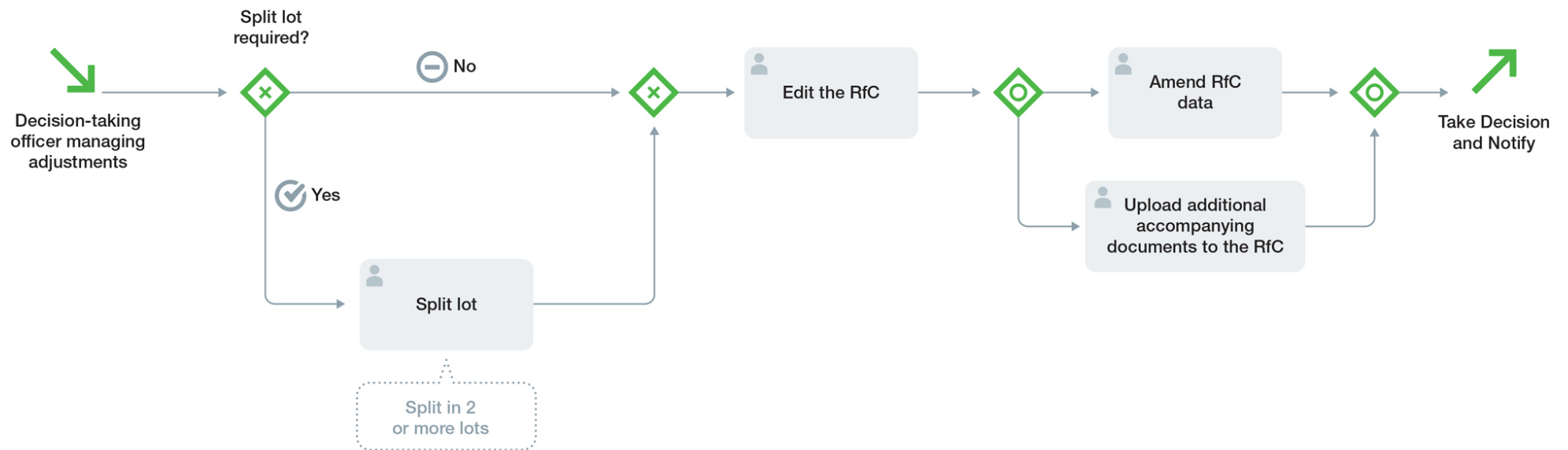
2. Decision-making Process

2.3 Take Decision & Notify

3. Perform Conformity Check

3.1   Handle Control Results

3. Perform Conformity Check

3.2   Manage Complaints Process - Follow-up Inspection of the Defective Lot (Re-inspection)