ZAPP-Air

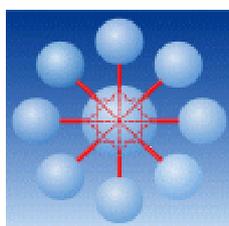# - Basic Concepts and Processes -

Version 1.5

DAKOSY

Datenkommunikationssystem AG

Mattentwiete 2

20457 Hamburg

Telefon: 040 370 03 – 0 Fax: **- 370**

Erstellt von	**: Daniel Blanken**
Geprüft von	**: Dirk Gladiator**
Freigegeben von	**: Dirk Gladiator**
Aufbewahrungsort:	:
Ausdruck	:
Datei	**: zappair_konzept_v15**

Version History

Version	Betr. Abschnitte	Grund	Name	Datum
1.5	All	First english Version	J. Diettrich	12.09.2008

For further information and change requests, please contact:

DAKOSY AG
- EDI Services -
Mattentwiete 2
D-20457 Hamburg

Tel.: 040 / 37003 – 502
Fax: 040 / 37003 – 370

Contents

1. Introduction

1.1   Structure and index

This document, based on the „Grobkonzept ZAPP-Air" provides a detailed description of basic principles and processes of the application ZAPP-Air,

The second chapter starts with an overall survey about the application. The third chapter gives a short description of the interface, while chapter 4 and 5 describe the process in ZAPP-Air as well as some add-on functions.

1.2   The IT-procedure ATLAS

In the context of a new customs law, which will be mandatory EU-wide in the year 2009, customs currently introduces (respectively already introduced) a new IT-based procedure, the so-called "ATLAS"procedure, for the clearing of imports and exports.

The ATLAS procedure includes the so-called two-staged exportation procedure, for the export of goods from the EU. This subdivides as follows:

1. **First stage** (not handled by ZAPP-Air)
   a. The company, who wants to export goods from the EU, declares the exportation at the customs office, concerned for its location ("**Export customs office**") .accepts
   b. The export customs office's acceptance of this declaration is called the "assignment". Customs allocates a unique reference number, the so-called **MRN** ("Movement Reference Number") to the exportation process.

2. **Second stage** (handled by ZAPP-Air)
   a. As soon as the goods are located in the last customs district (this may be the area of a port, airport or a border crossing point of road or rail) before leaving the EU (before the "exportation"), the forwarder handling the transportation notifies customs of the imminent export. The so-called "**Gestellungsanzeige**", (the presentation notification (PRE)) is submitted to the customs office, concerned for this last customs district („**Customs office of exit**").
   b. In reply to the presentation notification customs transfers all available data of goods of the first level of exportation for validation.
   c. Packages which are to be exported have to be „qualified" in additional messages to customs, i.e. information about the place of loading and the border-crossing means of transportation (e.g. flight number) have to be indicated.
   d. After completion of the **qualification** customs decides if the goods may be exported or have to remain within the EU. If applicable customs may order an „examination", of the goods and/or the associated documents.
   e. During the second stage of the export process, the customs office at exit has to be notified of every repositioning of goods within it's customs district.
   f. After the goods left the EU (e.g. the goods are loaded on board and the plane has departed) the procedure will be closed with a **completion message** to the customs.

2. ZAPP-Air

2.1   What is ZAPP-Air?

ZAPP-Air conduces as an integrated communication platform for the data interchange in connection with the second stage of the ATLAS exportation procedure.

Forwarders and their Handlings Agents at the airport are communicating via ZAPP-Air and thereby are providing status information about consignments. Based on these reports, ZAPP-Air exchanges the required messages and status reports with customs.

Illustration 1 – Communication in ZAPP-Air

2.2   Roles in ZAPP-Air

Table 1 - Roles in ZAPP-Air

Role / Abbrev.	Description	Function (s) in ZAPP-Air
Exporter	The exporter is the principal for the shipping of consignments. He declares upcoming exportations to the customs, using the electronic ATLAS procedure if applicable.	(not a direct participant in ZAPP-Air)
Forwarder	The forwarder organizes the transport of consignments by order of the exporter. In case that the consignment has been declared through electronic channels to the customs, the declaration through the forwarder has to be made eletronically as well (second stage of exportation in ATLAS).	- Submits consignment information to ZAPP-Air - Gives notification about the transport of goods from the Gateway HandlingsAgent to the HAC, if applicable - Receives status messages about consignments and the related customs processes - Gives notification about departures (unless happened through Carrier or TRAXON)
Local Handlings Agent	The local Handlings Agent takes over the transportation of the goods from the place of origin to the airport (of departure).	- Receives information about the consignments from ZAPP-Air
Gateway Handlings Agent	The Gateway Handlings Agent is the agent of the forwarder's agent at the airport. By order of the forwarder he consolidates smaller consignments to bigger collected consignments (so-called Consol) and organizes the transport to the Handling Agent of the Carrier.	- Receives information about the consignments from ZAPP-Air - Reports the arrival of consignments at the airport - Receives status messages about the customs process
Handlings Agent of the Carrier / HAC	TheHandlings Agent of the Carrier works by order of one or several airlines. The HAC is responsible for the loading of consignments into the plane.	- Receives information about the consignments from ZAPP-Air - Gives notification about the arrival of goods, if need be - Receives status messages about the customs process
Carrier	Self-explanatory	- Gives notification about the departures (if applicable indirectly via TRAXON)
TRAXON	TRAXON is a service bureau, whose offers among others include EDI-communication in the airfreight	- Transfers departure messages of the airlines to ZAPP-Air
ATLAS	Customs	- Receives data about exportation

		- Permits or interdicts the exportation of goods, orders an examination if applicable

2.3 ATLAS Self declarants

Beyond the functions described in 2.1, ZAPP-Air may be simply used as an information hub, i.e. the current status of exportation is available in ZAPP-Air, but the actual communication with customs takes place via an already established system of the forwarder. Forwarders, who are directly communicating with the customs whilst the first level of exportation procedure, are generally called "ATLAS Self declarants" in ZAPP-Air.

2.4 Consol- and direct consignments

In air freight a distinction is made between direct consignments (also known as „Direct-AWB" or „IATA-AWB") and consols (consolidated cargo, in correspondence to the "Consolidated container" in the sea freight).

> **So-called Back-2-Back consignments (Master-AWB with a single House Waybill) are treated as consol with one HAWB in ZAPP-Air.**

Technically the direct consignment is represented by the Master Air Waybill data; Single consignments within a consol are described as House Waybills, which refer to the Master Air Waybill representing the collected consignment.

2.5 MRN

From the customs point of view the consignments are treated as MRNs, no matter if it is about single consignments, Direct-AWB or consolidated consignments.

The MRN (**M**ovement **R**eference **N**umber) is allocated for individual exportation procedures (cf. 1.2); there may be various MRN on a single consignment (or parts of a MRN/ an exportation procedure).

In correspondence with the information from chapter 2.4 there are following results for the Direct-AWB and Consols, represented in illustration 2 (see following page).
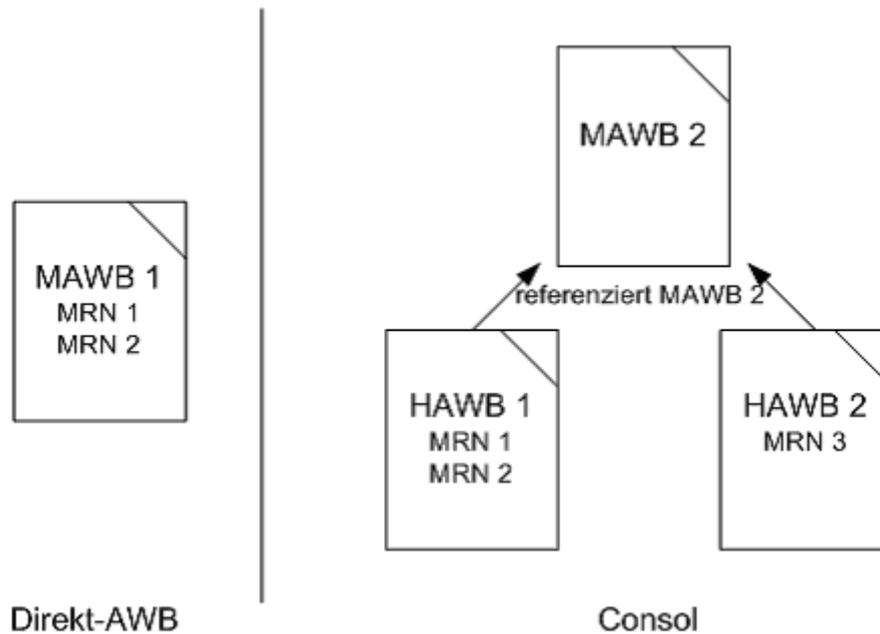
Illustration 2 – Structure und Consol

2.6   The pre-notification of exportation

According to the ATLAS procedure the second stage of the exportation process is initiated with the a presentation notification to the customs office at exit. Only after the qualification of goods, customs will check/validate the exportation process and deceide whether the exit of the goods is permitted or interdicted or if an examination of goods or associated documents should take place. The validation of the exportation process might take up to 2 hours or more.

To shorten the period between qualification and customs decision, the forwarder may pre-announce the imminent exit of goods to customs. This pre-notification initiates the second stage of the exportation process and (contrary to the presentation notification) might be sent before the goods actually arrived at the airport. The early start of the second stage of the exportation process means an early start of the validation period as well, abbreviating the time between qualification and customs' decision.
Within the validation time after the pre-notification customs may reply with a warning message, indicating that customs ascertained a conspicuity at the goods which shall be exported and an examination order will probably follow the qualification. In case that customs doesn't reply within 2 hours, you may assume that there was no conspicuity found.

> **A potential reaction of the customs in response to the preannouncement is not yet relevant, concerning the final permission or interdiction of the exportation of goods.**

The forwarder can trigger the pre-notification of a consignment **in ZAPP-Air** by setting the „pre-notification" flag when sending the declaration data.

2.7   The Z-Number

The Z-Number is a 12-digit alphanumeric combination, e.g. Z07A00034148. The number is used internally in ZAPP-Air to refer to several procedures, i.e. to generate a Z-Number for each received declaration.

The declaring forwarder receives the Z-Number with the FMA-message, with whom ZAPP-Air responds to the declaration of consignment. In ZAPP-Air, the Z-Number does not have any special meaning for customers.

3. Short description of the interfaces

3.1 Introduction

DAKOSY developed several interfaces for the communication between the participants and ZAPP-Air:

- **EDI**: Based on the Cargo-IMP Standard, commonly used in the airfreight

Air@Gate: An internet application to control status and regulate specific process sections Moreover there's an XML-interface under development at the time of creation of this document.

3.2 EDI

The message formats for the EDI-interface to ZAPP-Air are based on the standard „Cargo-IMP" for airfreight, as defined by the IATA .

For ZAPP-Air, several Cargo-IMP message types have been amended with special elements or existing elements have been changed, to integrate the needed information for customs processing. For a detailed description of those amendments refer to the manual „Cargo-IMP amendments for ZAPP-Air", please. Below, you can find a table of the Cargo-IMP messages which are used in ZAPP-Air

> **The Cargo-IMP EDI messages are documented in the internet under the following URL: http://www.zapp-air.de/edi_doku.html**

Table 2 - Cargo-IMP Nachrichten in ZAPP-Air

CIMP-message	Name	Description
FHL	House Waybill (also "HAWB" or "HWB")	In case of single consignments which shall be consolidated („Consol") the forwarder uses the message FHL, to declare, resp. update the consignment data in ZAPP-Air.
FWB	Master Air Waybill (also "MAWB" or "AWB")	In case of a Direct-AWB the message FWB is used to declare, resp. update the consignment data in ZAPP-Air. Moreover, the message FWB is transferred, to give notification about the collection of several single consignments to one collected consignment to ZAPP-Air.
FSU	Status Update	In correlation to a contained status code the message FSU is used by participants and the system ZAPP-Air itself, to inform others about status changes (status of goods and customs status) of consignments.
FMA	Acknowledgement	In the context of the communication in ZAPP-Air the message FMA may be used by several participants, to confirm the receipt of a message.
FNA	Negative Acknowledgement	In the context of the communication in ZAPP-Air the message FNA may be used by several participants, to signalize an error during the processing of a received message.
ZUC	ZAPP-Air Unknown Consignment	(Not necessary for normal ZAPP-Air activity) This message, created by DAKOSY, is used by the Gateway-Handling Agent to inform the forwarder about the arrival of goods, without an existing declaration in ZAPP-Air.

|		Moreover the Gateway Handlings Agent may use it to send additional information about the arrived goods to the forwarder.
ZMF	ZAPP-Air Manifest	(Not necessary for normal ZAPP-Air activity.) The **Z**APP-Air **m**ani**f**est conduces to transfer truck-manifest data. Forwarders and Handling Agents are using this possibility, in connection with the ZAPP-Air additional function „Air@Gate Mobile" (see 5.4)

3.3   Air@Gate (Web application)
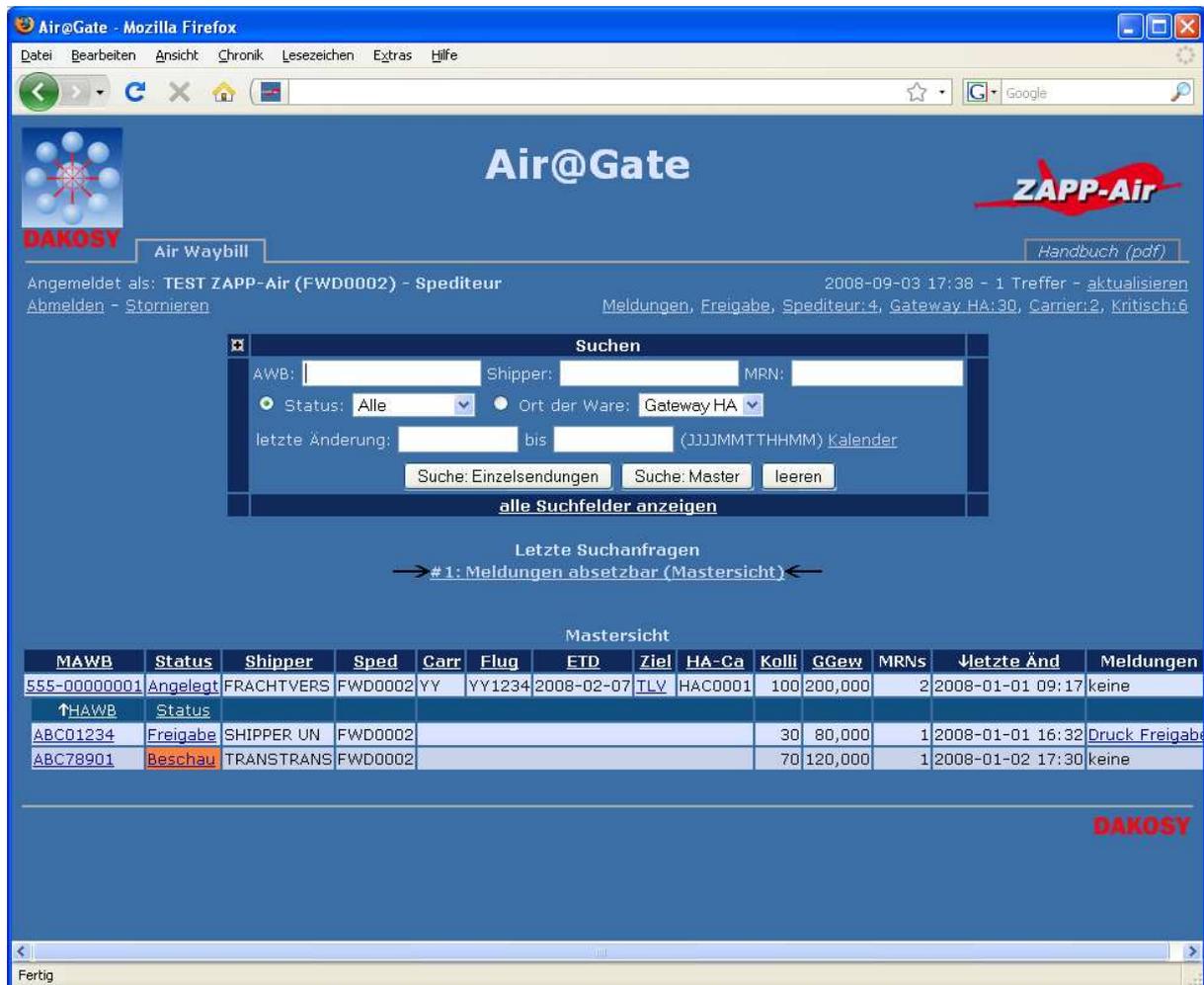
Illustration 3 - Screenshot Air@Gate

DAKOSY created the web application Air@Gate for forwarders and their Handling Agents in order to provide means of control- and regulation functions for the users in the context of ZAPP-Air. The availability of these functions depends both upon the status of consignment/announcement as well as the role of the user.

> **At present it is not yet possible to enter or update AWB-data via Air@Gate. The application is documented under the following URL: http://www.zapp-air.de/benutzer_hb.html**

4. The complete process in ZAPP-Air
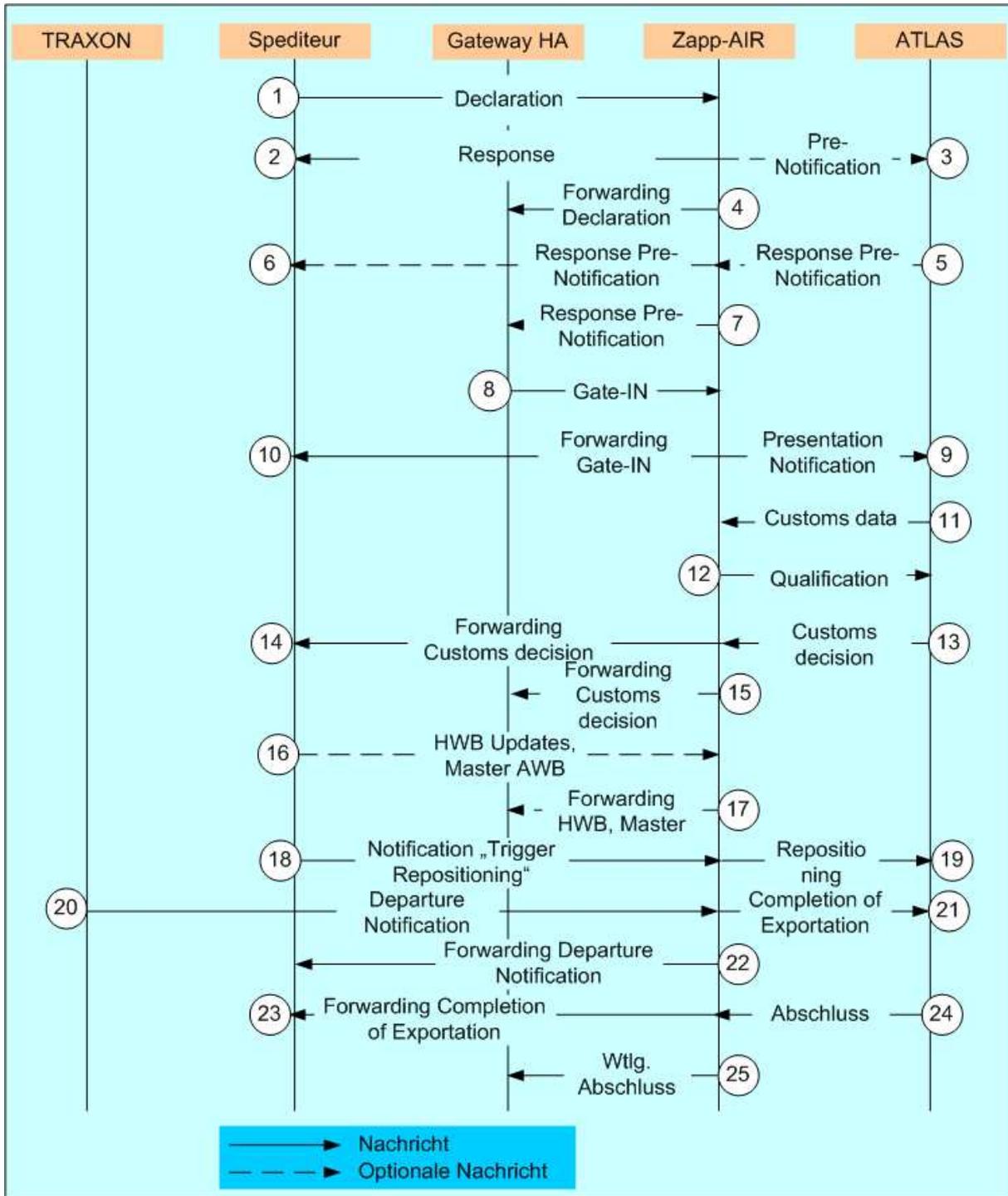
4.1 Standard Process

Illustration 4 - Gesamtprozess ZAPP-Air

The above illustration shows the standard process in ZAPP-Air. Special cases (e.g. interdiction of exportation through the customs) are described in the following section.

The individual steps of the standard process are explained below. The "Step No." column refers to the step numbers in the process illustration. Bracketed step numbers indicate anoptional, respectively conditional step.

For symplification at this point of the process illustration it is supposed that a consignment equates exactly one MRN. This is not always the case in practice, several presentations of goods/qualifications would be required in case of several MRN per consignment.

Step No.	Name	Description
1	Declaration	The forwarder declares the goods for export in ZAPP-Air, he transfers consignment data and corresponding customs-relevant information (e.g. MRN).
2	Response	In case of an incorrect declaration a corresponding error message will be transmitted, the goods have to be declared again. The forwarder receives a positive response, if no error occurred.
(3)	Pre-Notification	If the forwarder placed an according „pre-announcement indicator", his pre-notification is sent to the customs.
4	Forwarding Declaration	The declaration data of step 2 is forwarded to the Gateway Handlings Agent.
(5)	Response Pre-Notification	If a pre-notification has been placed (cf. step 3) the customs may response with „eliminate from the logistic process" within two hours. To the meaning of this response, please refer to chapter 2.6.
(6)	Response Pre-Notification	An information to the response of customs will be transmitted to the forwarder, where applicable.
(7)	Response Pre-Notification	Information of step 6 is provided to the Gateway Handlings Agent as well.
8	Gate-IN	If the goods arrive at the airport, the Gateway Handlings Agent notifies „Gate-IN" to ZAPP-Air.
9	Presentation Notification	The notification of Presentation of goods is sent to the customs after the arrival of goods at the airport (cf. 1.2).
10	Forwarding „Gate-IN"	The forwarder is being informed about the arrival of goods at the airport by ZAPP-Air.
11	Customs data	In reply to the notification of Presentation of goods the customs transfers the exportation data for validation to ZAPP-Air (cf.1.2).
12	Qualification	After receiving the customs data the consignments will be qualified towards the customs (cf. 1.2), i.e. the actual position of consignment and the expected time of departure will be announced to the customs.
13	Customs decision	The customs decides if the goods may be exported. If there has been a pre-announcement to the consignment, the decision will normally be reported within 10 minutes, otherwise it may be last up to 2 hours or more.
14	Forwarding of Customs decision	The forwarder is being informed about the customs decision.
15	Forwarding of Customs decision	The Gateway Handlings Agent is being informed about the customs decision as well.
16	Update HWB +	In case of a consol the forwarder once again transfers the associated

	Master AWB	consignment information, in order to validate the belonging of consignments to the so-called Master Air Waybil.. The forwarder transfers the final setting of the Master AWB as well.
17	Transfer Update HWB + Master	The transmitted data of step 16 are provided to the Handlings Agent.
18	Notification „Trigger Repositioning"	After all data has been finalized and the consol is packed, the forwarder releases the repositioning (see following step). This happens via special notification or by placing an according indicator while transmitting the Master AWB data (step 16).
19	Repositioning	With completion of the consolidation (in the case „Consol") and the permission of exportation, the physical goods may be moved from the HAS to the Carrier. This change of place will be communicated to the customs via the "notification of repositioning".
20	Departure Notification	TRAXON (or the forwarder) informs ZAPP-Air about the departure of the consignment.
21	Completion of Exportation	The notification of departure initiates the notification about the completion of the exportation of goods to customs.
22	Forwarding Departure Notification	Moreover the information about departure will be transferred to the forwarder.
23	Notification of Completion	Customs informs ZAPP-Air about the completion of exportation.
24	Forwarding Completion of Exportation	The forwarder receives the final information about the completion of exportation.
25	Forwarding Completion of Exportation	The Gateway Handlings Agent receives the final information about the completion of exportation.

4.2   Special cases

4.2.1 Local goods

"Local goods" are airfreight consignments delivered to the airport before a corresponding declaration has been sent to ZAPP-Air.

When ZAPP-Air receives a declaration of goods marked as "local goods" customs is sent a presentation notification immediately after receipt of the declaration, i.e. a seperate „Gate-IN" isn't expected anymore.

4.2.2 Difference between consignment data and physical consignment

If the Gateway Handlings Agent observes a difference between the delivered physical consignment and the declared data in ZAPP-Air, he may report this in the form of a "Discrepancy" message. This message does not replace the Gate-IN.

In the case of a discrepancy ZAPP-Air does not accept further notifications to the concerned consignment, only updates of the consignment data, Gate-IN or cancellation will be accepted.

In the case of a transmission of a „normal" Gate-IN or consignment data with placed indicator „local goods" after a a discrepancy occured, the case is considered to be resolved and the working of consignment may be continued.

4.2.3 „Customs error"

Customs error, i.e. notifications of error from the customs communication are immediately reported to the sender of a message in ZAPP-Air via eMail and other means, in order that he might be able to answer without time delay.

4.2.4 Examination

The customs has got the right to order an examination of the goods themselves or the associated documents at any time. If that's the case an immediate information is being enacted to the forwarder and the Gateway Handlings Agent. As long as there's no release (i.e. „permission of exportation") by customs, ZAPP-Air doesn't accept any further messages regarding the concerned consignment from other parties.

4.2.5 Interdiction of exportation

If customs interdicts the exportation of goods, the forwarder and Gateway Handlings Agent will be informed immediately. ZAPP-Air does not accept further notifications for consignments in the status "Interdiction of Exportation", except in the case of cancellation through the forwarder.

4.2.6 Correction of declaration data

The forwarder may update the consignment data, declared by him, at any time up to the time of repositioning.

4.2.7 Cancellation

It might be required to cancel the process for a single consignment or a whole Master AWB in ZAPP-Air.

On receipt of such message in ZAPP-Air, the cancellation for the concerned data is being noted internally. Thereby no further messages are being accepted or sent for the concerned House-, respectively Air Waybills. The data of the concerned MRN are not yet deleted with the cancellation.

> **The cancellation of a consignment in ZAPP-Air does NOT include the termination of the according exportation process in the customs' ATLAS system.**

In case of receiving a new declaration with (one of) the MRN at a subsequent point of time, ZAPP-Air directly takes over the customs status of the MRN for the new declaration.

In case of a new declaration containing one or more existing MRN, those MRN's customs status will be kept. I.e. if the MRN already had a permission of exportation it will still have the permission of exportation after being transferred to the new declaration.
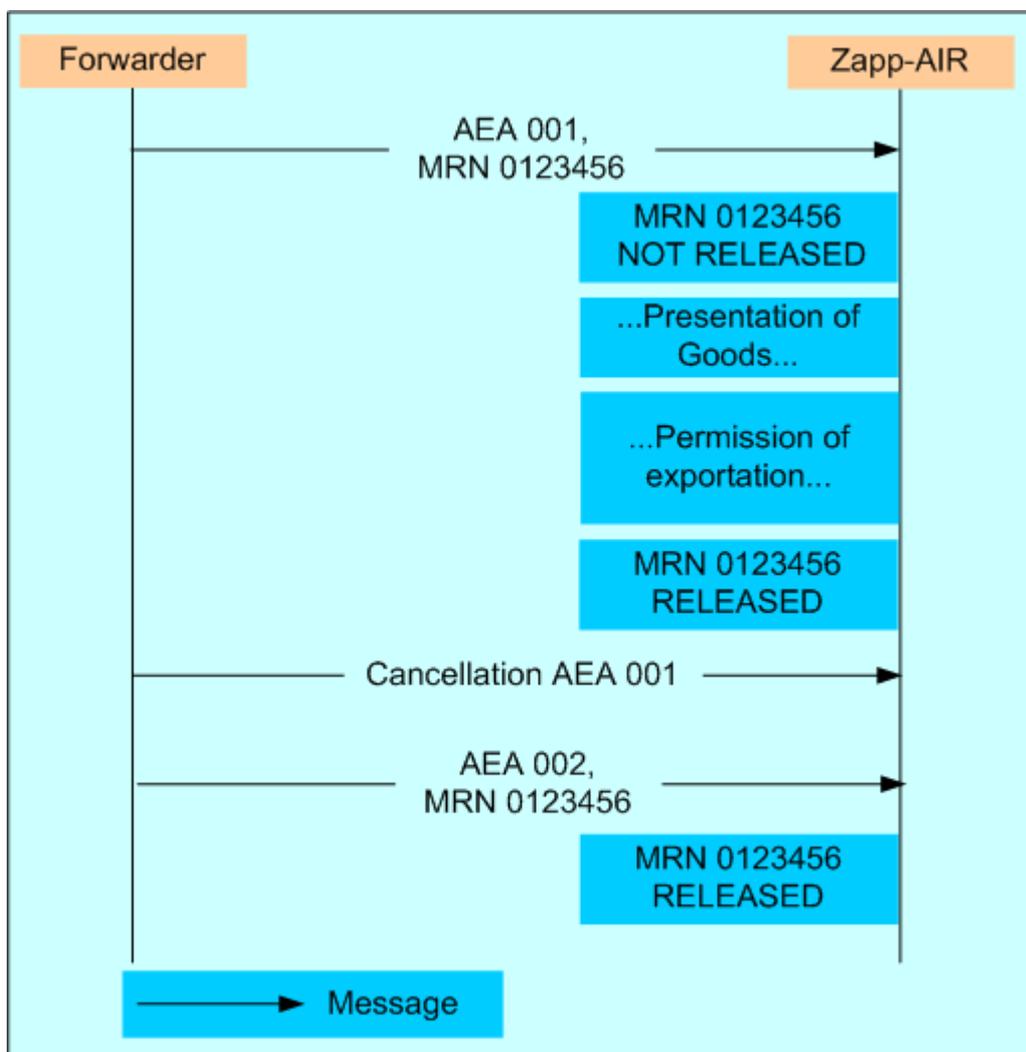
4.3   Limits and control functions

4.3.1 Validity of a MRN

An MRN remains valid up to max. 90 days on the part of the legislator. Therefore, the customs process in ZAPP-Air may only take place within the limit of these 90 days as well.

4.3.2 Acceptance of the pre-notification at customs

If customs doesn't react to a pre-notification within two hours, ZAPP-Air sets the status of this pre-notification to "pre-notification accepted".

4.3.3 Customs error

If an error occurs during communication with customs, the involved ZAPP-Air-participants are being informed per email.

4.3.4 Automatic notification of repositioning

If the forwarder submits the Master AWB for a consol and sets the indicator for an automatic repositioning, ZAPP-Air will check whether all of the MRNs associated with the AWB have a permission of exportation. If all of the MRN have the permission, a repositioning notification will be sent to customs.

However, if one or more MRN do not have the permission of exportation 15 minutes after the AWB was sent, ZAPP-Air will send an alert message to the forwarder and expects a new "Repositioning" message after all MRN have been released by customs.

5. Additional functions

5.1   Introduction

In the context of ZAPP-Air DAKOSY offers some additional functions, in order to support the involved forwarders' and Handlings Agents' work.

> **The usage of one or several of the additional functions, described in the following, has to be agreed upon with DAKOSY beforehand.**

5.2   Notification of local goods

As described in 4.2.1, there are cases of „local goods", i.e. a consignment is being delivered to the Handlings Agent, before being declared in ZAPP-Air. In some cases the air freight forwarder is instructed only after the goods have been delivered

For this purpose, ZAPP-Air provides an interface for transmission of consignment data, the Cargo-IMP message „ZUC". Using the „ZUC", the Handlings Agent may inform the forwarder about consignment details out of his inhouse-system.

The documentation to the ZUC message, along with the documentation of the other Cargo-IMP interfaces, is available in the internet (http://www.zapp-air.de/edi_doku.html)

5.3   Response from consignment data to the forwarder

ZAPP-Air provides the possibility for the Handlings Agent, to report not just local goods, but also data about „normal" consignments to the forwarder, using an extended version of the "ZUC" message (cf. 5.3).

In this case a copy of the data is being transmitted to the designated Handlings Agent (as information about the upcoming goods), at the time of arrival of the consignment data in ZAPP-Air.
On arrival of the goods the Handlings Agent sends the Gate-IN, if applicable. Moreover he sends the extended ZUC; the Handlings Agent may for example inform the forwarder about the deposit number or the dimensions of each package with this function.

5.4 Air@Gate Mobile

Air@Gate Mobile is an application used for further improvement and acceleration of the communication between the forwarder and Handlings Agent in the context of ZAPP-Air.

Air@Gate Mobile extends ZAPP-Air with the function of mobile data collection, which allows to control the transport of consignments to the airport and also to automate the notification of presentation of goods (for direct-AWB) at the time of arrival at the airport.

5.4.1 Air@Gate Mobile – „Manifest"

The application Air@Gate Mobile „Manifest" has been created in order to control the delivery process of individual packages of a consol.

This application may be used in order to support the control of the delivery of goods at the airport, as well as (upon arrival of a consignment at the airport) to automatically trigger the second stage of the customs process for a consignment.

Control of delivery

Air@Gate Mobile „Manifest" requires that the local Handlings Agent transmits the cargo manifest of the truck to ZAPP-Air, before loading the truck. The data is stored in ZAPP-Air and transmitted to the Gateway Handlings Agent, providing him with accurate information, which goods are being delivered with which truck.

An employee of the local Handlings Agent acquires information about the loaded packages with a mobile data acquisition device, while the truck is loaded. The acquired information is matched with the existing data of the cargo manifest in ZAPP-Air. Using the web-application Air@Gate, Forwarders and Handlings Agents may thereby verify, if all items have been loaded properly.

The acquisition of data ensues by scanning the barcode-label on the packages, i.e. without great loss of time.

After the delivery at the airport the unloading of consignments is again being controlled by an employee (of the Gateway Handlings Agent). He is equipped with a mobile data acquisition device as well, acquiring information about the unloaded packages. This allows him to to report potential damages directly.

Automatic Gate-IN

With the acquisition of several items during the unloading, the HWB number of every position (as far as known) is being matched with the existing declaration data in ZAPP-Air.

Air@Gate Mobile „Manifest" automatically initiates the customs process for a position which has been reported as delivered, in case that this position had been declared in ZAPP-Air before the delivery. This means an explicit notification of the „Gate-IN" via ZAPP-Air or the EDI interface is not necessary anymore.

5.4.2 Air@Gate Mobile – Truck

With the control of the delivery of single consignments at the Gateway Handlings Agent, Air@Gate Mobile „Manifest" has primarily been designed for the handling of consol consignments.

Air@Gate Mobile „Truck" has been created as an additional version of Air@Gate Mobile, in order to support the process of direct delivery and to enable an automatic „Gate-IN".

Air@Gate Mobile „Truck" also works on the basis of the cargo manifest-data. Here however the truck driver is being provided with a mobile device. The mobile device includes a GPS-receiver[1]. As soon as the current position of the truck is being located within a predetermined area (e.g. at the airport), the driver may trigger the Gate-IN (i.e. the notification of presentation of goods) with a single keypress.

Alternatively Air@Gate Mobile „Truck" can be configured so that the notification of presentation of goods will be automatically sent when reaching the destination.

Afterwards the truck driver is being kept informed about the ongoing customs process, via the mobile device again.

---

[1] GPS: Global Positioning System, equipment for the automatic definition of the current, geographic position

6. Further applicable documents

Name	Quelle	Verwendung
EDI Interface Documentation	http://www.zapp-air.de/entwurf/edi_doku.html	Documentation of the EDI-interface, created by DAKOSY for ZAPP-Air
Air@Gate	http://www.zapp-air.de/entwurf/benutzer_hb.html	Usage of the web-application, belonging to ZAPP-Air (german)

7. Lists

7.1   Abbreviations

Abbr.	Meaning
AWB	Air Waybill
Cargo-IMP	Cargo Interchange Message Procedures – from IATA and ATA (Air Transport Association of America) standardized EDI format for the airfreight
CIMP	cf. Cargo-IMP
Consol	Consolidated consignment (Consignment consisting of several, individual consignments) (cf. 2.4)
EDI	Electronic Data Interchange
HAC	Handlings Agent of the Carrier (see 2.2)
HWB	House Waybill
IATA	International Air Transport Association
Local goods	Goods that have already been arrived at the airport, during the time of declaration in ZAPP-Air through the forwarder.
MAWB	Master Air Waybill
Z-Number	Reference in ZAPP-Air which refers to processes, declared with an AEA.

7.2   Illustrations & Tables

7.2.1 Illustrations

7.2.2 Tables