**Annex 2 – Initial requirements for SMART functionalities and useful information**

4.1 EMS data platform with EDI

| *Req ID* | *Component* | *Description* | *MoSCoW* |
|---|---|---|---|
| EMS-001 | EDI transactions | The EMS reporting system will accept and load all EMSEVT, ITMATT and CAPE EDI transactions exchanged:<br>• for traffic potentially identified as UPU EMS (UPU S10 item prefix = "E%" or dispatch mail-class "E")<br>• from EMS exporting operators<br>• to operators delivering EMS items | Must |
| EMS-002 | Reporting link | For EMSEVT transactions the EMS reporting system assembles data by EDI reporting link*sending mailbox*receiving mailbox | Must |
| EMS-003 | EDI validation | The EMS reporting system holds a list of each interchange received (UNB line) | Must |
| EMS-004 | EDI validation | The EMS reporting system validates the interchange against Edifact syntax rules (ISO9735) and UPU Standards. Failed interchanges are logged locally | Must |
| EMS-005 | EDI validation | The EMS reporting system detects and logs duplicate transmission of an interchange | Must |
| EMS-006 | EDI validation | The EMS reporting system generates alerts to the sending operator upon detection of an incorrect interchange or a duplicate interchange | Must |
| EMS-007 | EDI validation | The EMS reporting system associates network timestamp information provided by external partners or local sub systems to the list of interchanges | Must |
| EMS-008 | EDI validations | The EMS reporting system loads network control records relative to EDI interchanges that are rejected for non-compliance to Edifact | Must |
| EMS-009 | EDI validation | For each EDI message received the EMS reporting system holds the reference of the EDI interchange in which the message was sent | Must |
| EMS-010 | EDI validation | The EMS reporting system validates each message in an interchange against the message syntax. Faulty messages are logged locally | Must |
| EMS-011 | EDI validation | The EMS reporting system detects and logs duplicate transmission of a message | Must |
| EMS-012 | EDI validation | The EMS reporting system generates alerts to the sending operator upon detection of an incorrect message or duplicate message transmission | Must |
| EMS-013 | EDI validation | The EMS reporting system generates alerts to the sending operator upon detection of an interchange rejected by the EDI network | Could |
| EMS-014 | EDI validation | Information about the interchanges and messages is accessible by the online reporting tool by operators or regional coordinators | Must |
| EMS-015 | EDI validation | The EMS reporting system will ensure that EDI interchanges that he is reprocessing are not counted twice in the reports produced from the interchanges and messages tables | Must |

## 4.3 EMS reporting system

### 4.3.1 EMS Calculation module

#### 4.3.1.1 Access to the EDI transactions

| *Req ID* | *Component* | *Description* | *MoSCoW* |
|---|---|---|---|
| EMS-100 | EDI transactions | The EMS reporting system has access to a copy of all EMSEVT, ITMATT and CAPE EDI transactions exchanged which are syntactically correct and relates:<br>• to traffic potentially identified as UPU EMS (UPU S10 item prefix = "E%" or dispatch mail-class "E")<br>• to traffic sent from any EMS exporting operator<br>• to any operator who processed EMS items or receptacles | Must |
| EMS-101 | Network timestamp | The EMS reporting system has access to a copy of all network control details for the EDI transactions that contain information relative to an EMS item | Must |
| EMS-102 | EDI transactions Network timestamp | The EMS reporting system ensures it keeps enough information to be able to associate a particular message or event to the network information record of the EDI transaction in which the message or item was transmitted over the EDI network | Must |
| EMS-103 | EDI transactions Network timestamp | The EMS reporting system reports on any EDI interchange that is missing the network timestamp from the network to which the EDI mailbox is attached | Should |
| EMS-104 | EDI transactions | The EMS reporting system can report on any EDI transaction which is not compliant to the message specification | Could |
| EMS-105 | Mailbox compliance | The EMS reporting system can report on EMSEVT transactions which are transmitted via EDI mailboxes which, in theory, are not intended for use for EMS | Must |
| EMS-106 | EMSEVT compliance | The EMS reporting system keeps track of the version of the EMSEVT message which is used between operator pairs to exchange item level tracking information | Must |
| EMS-107 | CAPE EDI compliance | The EMS reporting system keeps track of the version of the CAPE EDI message which is used between operator pairs to exchange dispatch information | Must |

#### 4.3.1.2 Calculation runs

| *Req ID* | *Component* | *Description* | *MoSCoW* |
|---|---|---|---|
| EMS-108 | Frequency | The EMS reporting system schedules calculations at frequencies defined by the EMS Unit | Must |
| EMS-109 | Frequency | The EMS Unit modifies the calculations schedule via an Online interface | Must |
| EMS-110 | Frequency | The EMS reporting system keeps a log of any calculations. The audit trail data in the logs will include at minimum:<br>• Name of the calculation script e.g. "StatisticsGeneratedFromDelivery"<br>• Version of the script<br>• Date and time when the calculations were started<br>• Requestor<br>• Period covered by the calculations<br>• Type of run: scheduled (frequency), ad hoc request | Must |

| *Req ID* | *Component* | *Description* | *MoSCoW* |
|---|---|---|---|
| EMS-111 | Anomalies | The EMS reporting system holds the launch of calculations for the official reports till any issue with missing EDI transactions, missing network timestamp, third party provided data or EMS reference data needed for the calculation has been resolved | Must |
| EMS-112 | Anomalies | The provider of the EMS reporting system informs the EMS Unit when the calculations of the official reports are postponed following an anomaly identified under EMS-111 | Must |
| EMS-113 | Traceability | The EMS reporting system can report on the audit trail data on request from the EMS Unit | Must |
| EMS-114 | Traceability | The EMS Unit can visualize online the audit trail data of each calculation run | Could |
| EMS-115 | Reference data | The EMS reporting system uses exclusively reference data valid for the period that is being calculated | Must |
| EMS-116 | Reporting links | The EMS reporting system calculates performance on the entire traffic regardless of the operator being in test mode or in full production mode | Must |

4.3.1.3 Assembly of EDI transactions into tracked entities

| *Req ID* | *Component* | *Description* | *MoSCoW* |
|---|---|---|---|
| EMS-117 | Item entity | The EMS reporting system is required to make provision for traffic collected outside the home base country of the inductor operator and for traffic delivered by an operator outside of his home base country | Must |
| EMS-118 | Item entity | The EMS reporting system is required to include in the calculations EMS traffic delivered by non-designated operators | Must |
| EMS-119 | Item entity | The EMS reporting system is able to select specific instances of a particular EMSEVT tag, a particular CAPE EDI message or a particular ITMATT occurrence as specified by the EMS Unit. This includes the filtering out of duplicate transmissions. | Must |
| EMS-120 | Item entity | The EMS reporting system must be able to enrich tracked entities with external data such as identification of MRS items (unwanted/returned goods) | Must |
| EMS-121 | Item entity | The EMS reporting system assembles EMSEVT and CAPE transactions by item-Id and reporting-link | Must |
| EMS-122 | Item entity | When an item receives multiple occurrence of the same event (tag) on the same reporting-route the EMS reporting system selects the occurrence as defined by the EMS Unit | Must |
| EMS-123 | Item entity | The EMS reporting system can link any event selected on a reporting link to the associated EDI transaction and network timestamp | Must |
| EMS-124 | Receptacle entity | The EMS reporting system assembles CAPE EDI transactions by receptacle-ID and reporting-link | Must |
| EMS-125 | Receptacle entity | When a receptacle receives multiple occurrence of PREDES, PRECON, CARDIT, RESCON or RESDES on the same reporting route the EMS reporting system selects the occurrence as defined by the EMS Unit | Must |
| EMS-126 | Item and receptacle entities | The EMS reporting system can link any CAPE message selected to the associated EDI transaction and network timestamp | Must |
| EMS-127 | Timeliness | The EMS reporting system measures transmission timeliness by sending operator | Must |
| EMS-128 | Timeliness and compliance | The EMS reporting system filters out retransmitted EDI data or outdated EDI data as per EMS Unit specification | Must |
| EMS-129 | Compliance | The EMS reporting system keeps track, by operator pairs, of the EDI mailbox combinations through which the selected EDI transactions are exchanged | Should |
| EMS-130 | Compliance | The EMS reporting system keeps track of the version of the EDI messages used between operator pairs | Must |

| *Req ID* | *Component* | *Description* | *MoSCoW* |
|---|---|---|---|
| EMS-131 | Compliance | The EMS reporting system reports on the volume of EMSEVT events by sending operator, sending mailbox, recipient operator, recipient mailbox, event tag and version of the message | Must |
| EMS-132 | Compliance | The EMS reporting system reports on the volume of dispatches by recipient operator and version of the message. | Could |
| EMS-133 | Compliance | The EMS reporting system reports on the provision of mandatory business elements, inclusive their values, between operator pairs | Must |
| EMS-134 | Completeness | The EMS reporting system reports on the provision of non-mandatory business elements, inclusive their values, between operator pairs | Should |
| EMS-135 | Enrichment | The EMS reporting system assigns the network timestamp to selected events selected for the item entity | Must |
| EMS-136 | Enrichment | The EMS reporting system flags specified items on specific routes using external source of information e.g. MRS. **N.B.:** no scenario requiring special identification has been identified yet | Must |

4.3.1.4 Performance calculations

| *Req ID* | *Component* | *Description* | *MoSCoW* |
|---|---|---|---|
| EMS-137 | Special items identification | The EMS reporting system can identify items with event EMA and:<br>• missing EMC event on the reporting-link but with an event EMC sent on a different reporting-link<br>• missing EMC event on the reporting-link but with EXA or EXB at outward-OE, or EXD or EXX terminating | Must |
| EMS-138 | Special items identification | The EMS reporting system can identify items without EMA on the reporting-link that starts from the origin/owner but with an event EMA sent from the origin/owner on a different reporting link | Must |
| EMS-139 | Special items identification | The EMS reporting system can identify items:<br>• with an EMC on the reporting link, missing EMD but with EXX or EXB aviation security terminating<br>• items on a transit route<br>• items without event EMD but with an event EMD transmitted by a different operator than the operator to whom the origin operator sent the event EMC<br>• items in a PREDES from the origin addressed to a different operator than the operator to whom the event EMA was sent | Must |
| EMS-140 | Special items identification | The EMS reporting system can identify with EMD, no delivery but with EDA, EDC, EME, EDF or EDX terminating | Must |
| EMS-141 | Anomalies | When tracking events are missing on a reporting route the EMS reporting system can identify whether the missing events were sent on another reporting-link and report on it | Must |
| EMS-142 | Standards | When calculating service performance against standards and service performance in working-days the EMS reporting system uses the standards in place at the time of the reference event i.e. for an item with dated EMA in February, EMB dated in March and revised leg 1 standards from March the item will always be measured against the leg1 standards event if the items included in the selection have an event EMB dated in March | Must |
| EMS-143 | EMS Cooperative reference data | Operators in full production and without validated leg 2 and leg 3 standards are measured against the default standards set by the EMS Unit | Must |
| EMS-144 | Recalculations | The EMS Unit can launch a recalculation of service performance on exactly the same selection of entities and associated events (snapshot taken during the first launch in the calculation module). The retention period of any snapshot is determined by the EMS Unit | Must |

| *Req ID* | *Component* | *Description* | *MoSCoW* |
|---|---|---|---|
| EMS-145 | Time between launch of the calculations and availability of the statistics. | The time between the launch of the calculations and the filing of the official statistics in the EMS statistics repository shall not exceed 12 hours when all reference data is available at the time the calculations are started | Must |

4.3.2 Statistics repository

4.3.2.1 Traceability and retention

| *Req ID* | *Component* | *Description* | *MoSCoW* |
|---|---|---|---|
| EMS-146 | Traceability local calculations | The EMS reporting system calculates sets of aggregated statistics using the entities created in the calculation module; the results are filed the results in the EMS Statistics repository. | Must |
| EMS-147 | Traceability local calculations | For each set of statistics filed in the repository the EMS reporting environment keeps the references of the calculation run on which the statistics are based. | Must |
| EMS-148 | Traceability local calculations | The EMS reporting assigns a unique ID to each set of statistics in the EMS Statistics repository | Must |
| EMS-149 | Traceability local calculations | The EMS central repository holds audit trail data for each set of statistics in the repository. The audit trail data comprises at minimum:<br>• Name of the set of aggregates e.g. EMC over EMD<br>• Date and time when the aggregates were calculated<br>• Requestor<br>• Period covered by the calculations<br>• Type of run: scheduled (frequency), ad hoc request, re-run<br>• Validation status: N/A, waiting for validation, validated<br>• For official results: date and time of validation | Must |
| EMS-150 | Traceability imported statistics | Each set of statistics sourced from external provider and filed in the EMS statistics repository is uniquely identified in the EMS repository | Must |
| EMS-151 | Traceability imported statistics | The EMS central repository holds audit trail data for each set of imported statistics filed in the repository. The audit trail data comprises at minimum:<br>• Name of the set of aggregates e.g. RUGBY<br>• Date and time when the statistics were uploaded<br>• Version of the upload script<br>• Reporting period covered by the statistics<br>• Type of run: scheduled (frequency), ad hoc request, re-run<br>• Validation status: N/A, Waiting for validation, validated<br>For official results: date and time of validation if applicable | Must |
| EMS-152 | Regeneration of statistics | The EMS Unit may launch, via an online interface, the recalculation of statistics (e.g. after a late update of the reference data) | Must |

| *Req ID* | *Component* | *Description* | *MoSCoW* |
|---|---|---|---|
| EMS-153 | Traceability | When official statistics are recalculated on request of the EMS Unit the previous statistics for the same period are flagged as "superseded" | Must |
| EMS-154 | Traceability | The EMS Unit can view the list of all the statistics filed in the repository with their status and their audit trail data, inclusive the references of the calculation run for locally calculated statistics | Should |
| EMS-155 | Traceability | The EMS Unit has a direct read/download access to any statistic in the repository | Must |
| EMS-156 | Consistency | For official statistics, whether they require validation or not, the EMS statistics repository holds only one valid/official set per reporting period | Must |
| EMS-157 | Calculations | The calculation module in the EMS statistics repository calculates aggregates on elapsed time or elapsed days between any pair of events, EMSEVT or CAPE upon request from the EMS Unit | Must |
| EMS-158 | Retention | The EMS reporting system holds the official statistic results for a period as defined by the EMS Unit | Must |

4.3.2.2 Aggregation levels for reporting

| *Req ID* | *Component* | *Description* | *MoSCoW* |
|---|---|---|---|
| EMS-159 | Aggregation items and receptacles | The EMS reporting system aggregates statistics at minimum between:<br>• Reporting-link<br>• Origin region<br>• Destination region<br>• Mail category (from PREDES)<br>• Mail sub-class (from PREDES) | Must |
| EMS-160 | Additional aggregation for leg 1 | Additionally the EMS reporting system aggregates statistics between by outward OE from the event EMC when available or by origin of the dispatch when there is no event EMC present | Must |
| EMS-161 | Additional aggregation for leg 1 performance against standards | Additionally the EMS reporting system aggregates statistics by collection zone and service standard | Must |
| EMS-162 | Additional aggregation for leg 2 items | Additionally the EMS reporting system aggregates statistics between by:<br>• Outward OE from the event EMC when available, or by origin of the dispatch when there is no event EMC present and PREDES is available<br>• Inward OE from the event EMD when available, or by dispatch address when there is no event EMD and PREDES is available | Must |
| EMS-163 | Additional aggregation for leg 2 receptacles | Additionally the EMS reporting system aggregates statistics by PREDES outward OE and PREDES dispatch address | Must |
| EMS-164 | Additional aggregation for leg 3 | Additionally the EMS reporting system aggregates statistics by inward OE from the event EMD | Must |
| EMS-165 | Additional aggregation for leg 3 performance against standards | Additionally the EMS reporting system aggregates statistics by delivery zone and service standard | Must |

| *Req ID* | *Component* | *Description* | *MoSCoW* |
|---|---|---|---|
| EMS-166 | Additional aggregation for transmission timeliness | The EMS reporting system aggregates statistics between:<br>• Sending operator<br>• Sending mailbox<br>• Receiving operator<br>• Receiving mailbox | Must |
| EMS-167 | Additional aggregation for transmission timeliness | Additionally, for events EMC, PREDES, EMK the system aggregates statistics by outward office of exchange | Must |
| EMS-168 | Additional aggregation for transmission timeliness | Additionally, for events EMD, RESDES, EMJ, EDA, EDB EME, EDC, EMF the EMS reporting system aggregates statistics by inward office of exchange or customs-return-point-ID (EDC) | Must |
| EMS-169 | Additional aggregation for EDI compliance | The EMS reporting system aggregates statistics between:<br>• Sending operator<br>• Sending mailbox<br>• Receiving operator<br>• Receiving mailbox<br>• Message name<br>• Message version<br>• Event tag (for EMSEVT) or Event code (for RESDIT) | Should |

4.3.2.3 Aggregation levels for monitoring

| *Req ID* | *Component* | *Description* | *MoSCoW* |
|---|---|---|---|
| EMS-170 | Aggregation items and receptacles | The EMS reporting system supports the same aggregation levels as for reporting with the addition of the day and weekday of the reference event | Could |

4.3.2.4 EMS statistics by measurement area

| *Req ID* | *Component* | *Description* | *MoSCoW* |
|---|---|---|---|
| EMS-171 | Performance in elapsed hours | For measurable items the EMS reporting system files per period of minimum 6 hours up to 240 hours and after 240 hours:<br>• the volume of items<br>• the average elapsed time by periods of minimum 6 hours up to 240 hours<br>• the average elapsed time for time > 240 hours | |
| EMS-172 | Performance in elapsed days and in working-days | The EMS reporting system files, per period of minimum 1 day up to 25 days and after 25 days:<br>• the volume of items<br>• the average elapsed time by periods of minimum 1 day up to 25 days<br>• the average elapsed time for time > 25 days | |

| *Req ID* | *Component* | *Description* | *MoSCoW* |
|---|---|---|---|
| EMS-173 | Leg 1 performance in elapsed or working-days | Additionally the EMS reporting system files the anomalies:<br>• The volume of items without EMA<br>• The volume of items without EMC<br>• The volume of items without EMA and without EMC<br>• The volume of items with EMA and EMC in non-chronological order | |
| EMS-174 | Leg 2 performance in elapsed or working-days | Additionally the EMS reporting system files the anomalies:<br>• The volume of items without EMC<br>• The volume of items without EMD<br>• The volume of items without EMC and without EMD<br>• The volume of items with EMC and EMD in non-chronological order | |
| EMS-175 | Leg 3 performance in elapsed or working-days | Additionally the EMS reporting system files the anomalies:<br>• The volume of items without EMD<br>• The volume of items with EMD and delivery in non-chronological order | |
| EMS-176 | Leg 1 performance against standard | The EMS reporting system files :<br>• RefVol.= Vol. of items delivered in the period with EMA and EMB and events in chronological order<br>• Ref.Vol with EMA and EMB but in non-chronological order<br>• Vol. of items selected with EMA without EMB<br>• RefVol measured OnTime<br>• RefVol measured Late<br>• RefVol with WrongOE<br>• RefVol with WrongCollectionPoint<br>• RefVol without OE (excl. missinEMB)<br>• RefVol without CollectionPoint | |
| EMS-177 | Leg 2 performance against standard | The EMS reporting system files :<br>• RefVol = Vol. of items delivered in the period with EMC and EMD and events in chronological order<br>• RefVol with EMC and EMD but in non-chronological order<br>• Vol. of items selected with EMD without EMC<br>• RefVol measured OnTime<br>• RefVol measured Late | |
| EMS-178 | Leg 3 performance against standard | The EMS reporting system files:<br>• RefVol = Vol. Delivered in Period<br>• RefVol1 = RefVol with EMD, EDB, EME and EDC in sequence<br>• Vol. in RefVol with no EMD<br>• Vol. in RefVol with EMD but Customs events in non-chronological order<br>• Vol. in RefVol1 with EMD but without OE code<br>• Vol. in RefVol1 with EMD but no delivery zone in the delivery event<br>• Vol. in RefVol1 for which the combination the delivery location is not found in a delivery zone attached to the inward OE | |

| *Req ID* | *Component* | *Description* | *MoSCoW* |
|---|---|---|---|
| | | • NumWorkingDays between actual delivery and calculated delivery; applies only to Vol. in RefVol1 with an entry found in the standards table<br>• Vol. in RefVol1 delivered within the standard<br>• Vol. in RefVol1 delivered later than the standard<br>• Ref.Vol with EMC and EMD but in non-chronological order | |
| EMS-179 | Return of tracking information items | The EMS reporting system files:<br>• Vol. of items with the reference event<br>• For any event tag the vol. of these items with the event present<br>• Vol. of these items with any of (EDH, EMH, EMI) event present | |
| EMS-180 | Return of tracking information CAPE | The EMS reporting system files:<br>• Vol. of receptacles selected<br>• Vol. of items from the origin operator in the selected receptacles<br>• Vol. from a different operator in the selected receptacles<br>• Vol. of items from the origin operator with EMC<br>• Vol. of items from the origin operator with ITMATT<br>• Vol. of items from a different operator with EMC or EMK from the origin of the PREDES<br>• Vol. of the selected receptacles with RESDES from the addressee of the dispatch<br>• Vol. of the selected receptacles with PRECON<br>• Vol. of the selected receptacles with RESCON<br>• Vol. of the selected receptacles with CARDIT<br>• Vol. of the selected receptacles with RESDIT 74<br>• Vol. of the selected receptacles with RESDIT 24 | |
| EMS-181 | Statistics transmission timeliness | The EMS reporting system files, per period of minimum 1hour, from – 4 hours up to 240 hours and after 240 hours:<br>• the volume of events<br>• the average elapsed time by periods of minimum 1 hours, from – 4 hours up to 240 hours<br>• the average elapsed time for time > 240 hours | |
| EMS-182 | EMSEVT V3 compliance | The EMS reporting system files in the EMS Statistics repository the following information:<br>• Sending operator<br>• Sending mailbox<br>• Receiving operator<br>• Receiving mailbox<br>• Message Type<br>• Message version<br>• Event tag<br>• RefVol = Number of events<br>• Vol. in RefVol with collection-postcode present( EMA)<br>• Vol. in RefVol with posting-office-ID present( EMA) | |

| *Req ID* | *Component* | *Description* | *MoSCoW* |
|---|---|---|---|
| | | • Vol. in RefVol with sender's-postcode present( EMA)<br>• Vol. in RefVol with item-lodgement-mode present( EMA)<br>• Vol. in RefVol with network-entry-location-type present( EMA)<br>• Vol. in RefVol with export-customs-office-ID present( EMB, EMC, EXD)<br>• Vol. in RefVol with customs-retention-reason present( EDB, EME)<br>• Vol. in RefVol with Held-reason present( EXD, EXX, EDA, EDF, EDX)<br>• Vol. in RefVol with Held-action present( EXD, EDA, EDF, EDX)<br>• Vol. in RefVol with outward-OE/transit-OE present (EXA, EXB, EXC, EMC, EMK)<br>• Vol. in RefVol with (transit-)dispatch-number present( EMC, EMK)<br>• Vol. in RefVol with (transit-)dispatch-address present( EMC, EMK)<br>• Vol. in RefVol with (transit-)export-receptacle-ID present( EMC, )<br>• Vol. in RefVol with transit/inward-OE present( EMJ, EMD, EDA, EDB, EME, EMF)<br>• Vol. in RefVol with dispatching-OE present( EMJ, EMD)<br>• Vol. in RefVol with received-dispatch present( EMJ, EMD)<br>• Vol. in RefVol with (transit)-import-receptacle-ID, present( EMJ, EMD)<br>• Vol. in RefVol with import-customs-office-id present( EDB, EME, EDC)<br>• Vol. in RefVol with sorting-centre-id present( EDD, EDE)<br>• Vol. in RefVol with delivery-office-id present( EMG, EDF, EDG, EMH, EMI)<br>• Vol. in RefVol with collection-point-id present( EDH)<br>• Vol. in RefVol with collection-point-postcode present( EDH)<br>• Vol. in RefVol with (attempted-)delivery-location present( EMH, EMI) | |

#### 4.3.3 Online reporting tool

| *Req ID* | *Component* | *Description* | *MoSCoW* |
|---|---|---|---|
| EMS-183 | Authorization to publish | Member operators with access to the Online reporting tool can see only performance on their traffic or on the traffic they processed. | Must |

##### 4.3.3.1 Official reports

| *Req ID* | *Component* | *Description* | *MoSCoW* |
|---|---|---|---|
| EMS-184 | Authorization to publish | The online reporting tool retains from publication the official statistics which are subject to validation till the authorization to publish has been granted by the EMS Unit. | Must |
| EMS-185 | Publication | The online reporting tool holds the statistics from publication till the monthly update of the reference data needed by the publication process has been received from the EMS Unit and uploaded. | Must |
| EMS-186 | Publication | The operator of the EMS Reporting system informs the EMS Unit if the publication of official statistics is pending receipt of reference data from their end. | Must |
| EMS-187 | Publication | For the official statistics that do require validation, the authorization to publish is granted by the EMS Unit via an online application | Should |

| *Req ID* | *Component* | *Description* | *MoSCoW* |
|---|---|---|---|
| EMS-188 | Official reports | The online reporting tool publishes official statistics for links when both the origin and the destination operators are in Full production (criteria set by the EMS Unit) | Must |
| EMS-189 | Reference data | For official reports the online reporting tool uses the version of the reference data that matches the period for which the reports are calculated. | Must |

4.3.3.2 Reports for operators in test mode

| *Req ID* | *Component* | *Description* | *MoSCoW* |
|---|---|---|---|
| EMS-190 | Operators in test mode | The online reporting tool generates reports with statistics about operators who are not in full production mode. These reports are filed in the download centre and accessible only by the EMS Unit | Must |
| EMS-191 | Operators in test mode | The online reporting tool publishes online performance reports for operators in test mode. The reports are accessible only by the EMS Unit | Could |

4.3.3.3 Online reporting and monitoring

| *Req ID* | *Component* | *Description* | *MoSCoW* |
|---|---|---|---|
| EMS-192 | Presentation | The on-line reporting tool presents statistics in the form of a series of dashboards, provisionally:<br>• Service performance measurement against standards<br>• Service performance in elapsed hours, days, working days<br>• Scanning performance<br>• Transmission timeliness<br>• Message compliance<br>• CSS performance | Must |
| EMS-193 | Drill down | From a dashboard and a specific statistic the user can look at the results from different perspectives, e.g.:<br>• Traffic from/to a specific region or a group of operators he has defined<br>• Traffic by outward office of exchange/inward office of exchange<br>• Traffic by induction zone<br>• Traffic by delivery zone<br>• Traffic by day of arrival<br>• Traffic by service standards<br>• Traffic by weekday/day | Must |
| EMS-194 | Audit trail | For any published statistic the user can view the associated audit trail information. | Could |
| EMS-195 | Export | For selected statistics the user can request that a report be generated online in Excel or pdf format. | Must |
| EMS-196 | Export | The user can request a printout of the statistics displayed on his screen. The printout will include the selection criteria applied e.g. group of operators, period, name of the statistics, audit trail information for reports. | Must |
| EMS-197 | Drill-down | For selected statistics the user can request that the system generates a diagnostic file for the entities behind the statistics and their associated details. The diagnostic file will include the selection criteria e.g. group of operators, period, name of the statistics. | Should |
| EMS-198 | Dashboard | A user can created his own dashboards. | Should |

4.3.3.4 Monitoring reports

| *Req ID* | *Component* | *Description* | *MoSCoW* |
|---|---|---|---|
| EMS-199 | Publication | Monitoring reports do not require authorization to publish | Must |
| EMS-200 | Drill-down | Drill-down is possible up to the individual entities, items or receptacles, for the last calculated statistics | Must |
| EMS-201 | Drill-down | Drill-down is possible up to the individual entities, items or receptacles, for the 13 past months | Must |

4.3.3.5 Download centre

| *Req ID* | *Component* | *Description* | *MoSCoW* |
|---|---|---|---|
| EMS-202 | Online storage | Each operator has access to only the statistics relative to its traffic or the traffic it processed and to global overviews as defined by the EMS Unit. | Must |
| EMS-203 | Online storage | The download centre keeps 15 months of formatted reports and diagnostic flat files online | Must |
| EMS-204 | Archive and retrieval | Upon request from the EMS Unit, formatted reports and associated diagnostic flat files are retrieved from archives for a period back up to 24 months | Must |
| EMS-205 | Folder structure | The name of the folder clearly indicates the period to which the reports and associated diagnostic flat files inside belong | Must |
| EMS-206 | Recalculated statistics | When official statistics have been recalculated the EMS Unit requests, via an on-line application, that former Excel reports and associated diagnostic flat files be removed from the download centre. | Must |
| EMS-207 | Access by Regional Coordinators or ad hoc groups | Regional coordinators and management of ad hoc groups have access to the performance statistics of each operator in the group. | Must |
| EMS-208 | Access by EMS Unit | The Excel reports and diagnostic flat files for all EMS operators are available to the members of the EMS Unit only and from one central place | Must |
| EMS-209 | EMS Unit consolidated statistics | Consolidated statistics in Excel are filed in a folder with access restricted to the members of the EMS Unit | Must |
| EMS-210 | Audit trail | The unique Id assigned to the statistics in the central repository and the creation date are reported in the footer of the formatted reports | Must |
| EMS-211 | Audit trail | The header of any accompanying diagnostic flat file will include the unique Id assigned to the statistics in the EMS statistics repository, the date of the creation of the file and the version of the script that creates the file | Must |
| EMS-212 | EMS Reports | At a minimum, the EMS reporting system should produce the following reports:<br>• Pay-for-performance reports – monthly and quarterly<br>• Monthly performance reports and overview – monthly<br>• Audit and measurement report – quarterly and annually<br>The indicators to be included in each report are referenced in Annex 1 | Must |

4.3.3.6 Reference data used during publication

| *Req ID* | *Component* | *Description* | *MoSCoW* |
|---|---|---|---|
| EMS-213 | Online storage | Each operator can view the reference that has been applied to its organization when publishing the reports. See EMS-004. | Could |

4.3.3.7 Access

| *Req ID* | *Component* | *Description* | *MoSCoW* |
|---|---|---|---|
| EMS-214 | Authorization and access rights | Only members of the EMS Unit grant access and privileges to the EMS new generation reporting system | Must |
| EMS-215 | Statistics | The EMS reporting system generates statistics on the use of the online reporting tool e.g.:<br>• The number of users registered, by administration, and with their level of authorization<br>• The frequency of access to the system by administration, dashboards<br>• The list of users who have not connected since a certain number of months, days, weeks | Must |
| EMS-216 | Access | The system can, on request of the EMS Unit, deactivate or reactivate accounts | Must |
| EMS-217 | Access | The online reporting tool can be accessed through a Web browser, requiring no special software to be installed | Must |
| EMS-218 | Access | The online reporting tool can be accessed through other devices such as smartphones, tablets ... | Must |

4.3.4 Alert module

| *Req ID* | *Component* | *Description* | *MoSCoW* |
|---|---|---|---|
| EMS-219 | Frequency | After each new monitoring statistics are generated the EMS reporting system runs comparison against the latest calculated statistics and the level of performance below or above which the requestor requested to be notified | Must |
| EMS-220 | Requestor | Members of the EMS Unit can request to be alerted when the performance of any member of the Cooperative, the members of a defined region, a list of members or an individual member falls outside defined levels | Must |
| EMS-221 | Requestor | An individual operator may request that an alert be generated when its performance falls outside levels it sets | Must |
| EMS-222 | Requestor | An individual operator may request that an alert be generated when the performance on its traffic processed by any operator, region, list of operators falls outside the levels it sets | Must |
| EMS-223 | Criteria | Alerts can be set on:<br>• Volume of items, dispatches, EDI transactions, events<br>• KPI e.g. EMC over EMA<br>• Time lag e.g. 2 days if it is anticipated that traffic will receive an event EMC within two days of the event EMA<br>• Group of operators (all, in the same region, user-defined lists) | Must |
| EMS-224 | Criteria frequency | Period covered e.g. items with EMA for Monday previous week up to day of the calculations | Must |
| EMS-225 | Criteria period | Period during which to run the report | Must |
| EMS-226 | Recipient of alert | Alerts are sent via email to the requestor | Must |
| EMS-227 | Recipient of alert | Only users with ad hoc level access can request alerts to be sent to another addressee | Should |
| EMS-228 | Alert notification message | The notification message will list the alert criteria and the anomaly detected | Must |

| *Req ID* | *Component* | *Description* | *MoSCoW* |
|---|---|---|---|
| EMS-229 | Alert notification message | The notification message includes a link to the monitoring dashboard where the corresponding statistics can be further analyzed | Must |
| EMS-230 | Email alerts | The EMS Unit can create email messages to be sent to EMS reporting system users, or groups of users. Emails shall be capable of having attachments, including Word, Excel, and PDF documents | Must |
| EMS-231 | Email alerts | They EMS reporting system should be capable of saving email templates, to be selected and used by the EMS Unit as needed | Should |

#### 4.3.5 Reference data

| *Req ID* | *Component* | *Description* | *MoSCoW* |
|---|---|---|---|
| EMS-232 | EMS Cooperative reference data | The EMS reporting system holds all reference data in centralized tables | Must |
| EMS-233 | EMS Cooperative reference data | Only the EMS Unit can request updates of the reference tables | Must |
| EMS-234 | EMS Cooperative reference data | The EMS reporting system is capable to handle updates via an online application or through an access to the EMS Operational Guide for the Cooperative reference data:<br>• Regions and associated operators<br>• Definition of full tracking<br>• Transport/leg 2 standards (regional)<br>• Country time zone association<br>• Criteria for full tracking<br>• Zones impacted by force majeure<br>• Default leg 3 standards | Must |
| EMS-235 | EMS Cooperative reference data | The EMS reporting system is capable to handle updates via an online application or through an access to the EMS Operational Guide for the operator's reference data:<br>• Membership status<br>• Tracking status<br>• Whether the operator has validated Leg 1 standards<br>• Whether the operator participates in the multilateral agreement<br>• Whether the operator participates in Pay-for-performance<br>• Reporting-links in Pay-for-performance<br>• Public holidays<br>• Working days/weekend days<br>• Leg 1 standards<br>• Leg 2 standards<br>• Leg 3 standards<br>• End-to-end standards | Must |

| *Req ID* | *Component* | *Description* | *MoSCoW* |
|---|---|---|---|
| EMS-236 | EMS Cooperative reference data | The EMS Unit grants access to the online reporting tool inclusive the download centre via an online application | Must |
| EMS-237 | EMS Cooperative reference data | Each set of reference data is assigned a validity period and the EMS reporting system ensures there is no overlap in time (e.g. there can exist only one set of leg 1 standards for operator xxx for the period between 01/01/2017 and 31/06/2017) | Must |
| EMS-238 | EMS Cooperative reference data | The EMS reporting system holds a history of the changes brought to any of the EMS reference tables listed | Must |
| EMS-239 | EMS Cooperative reference data | The EMS reporting system reports to the EMS Unit any error encountered during the update reference data requested either online or via an access to the EMS Operational Guide | Must |
| EMS-240 | UPU Code Lists | The EMS reporting system's operator ensures the version of the UPU CL108 (IMPC codes), UPU CL160 (EDI addresses), UPU CL112 (event reason codes), UPU CL113 (event action taken) is updated after each publication by the secretariat of the UPU Standards Programme | Must |
| EMS-241 | UPU Code Lists | The EMS reporting system notifies the EMS Unit when a UPU Code List has been updated | Should |
| EMS-242 | Validation | The EMS Unit can request online an extract of specific data elements used in various EDI messages over a specified period (i.e. outward OE codes in the events EMC for the past month, past week, etc.) | Must |
| EMS-243 | Validation | When a new set of service standards is uploaded for testing during the validation process, the EMS Unit can request the system to run compliance checks via an online module e.g.:<br>• Comparison of the codes in the standards table against the codes populated in EMSEVT<br>• Overlap of delivery and export zones for the same inward and outward OE<br>• IMPCs used in EMSEVT and CAPE are registered in UPU Code List as offices of exchange dispatching or accepting EMS items<br>• Duplicate codes within the same IMPC<br>• Blank cells<br>• Spaces before and after code<br>• Missing zone in the delivery and export office code list | Must |
| EMS-244 | Validation | The EMS reporting system can run test reports using reference data under validation i.e. before the reference data is applied in production | Must |
| EMS-245 | EMS Cooperative reference data | The initial values to populate the EMS reporting system will be provided by the EMS Unit | Must |
| EMS-246 | EMS Cooperative reference data | Operators in full production and without validated leg 2 and leg 3 standards are measured against the default standards | Must |
| EMS-247 | EMS reporting environments | The service provider supports three environments:<br>• Development testing: an environment where EMS Unit testers can load test reference data and test messages and from where they can access the EMS statistics repository to get the aggregated statistics<br>• UAT testing: an environment that uses the EDI messages from the EMS data platform<br>• Production environment | Must |

4.4 Hosting of the online reporting tool and its maintenance

| *Req ID* | *Component* | *Description* | *MoSCoW* |
|---|---|---|---|
| EMS-300 | Availability | The online reporting tool hosting system is expected to be accessible 24/7 over the public internet | Must |
| EMS-301 | Availability | System downtime for maintenance or implementation of any changes is agreed with the EMS Unit enough in advance such that sufficient notification can be provided to the users | Must |
| EMS-302 | Availability | Two environments will be made available to end users; one test and one production environment. Migration to production requires official authorization from the EMS Unit | Must |
| EMS-303 | Availability | The system is required to operate at 99.4% availability | Must |
| EMS-304 | Availability | In case of a disaster the system is required to be recovered within 4 hours | Must |
| EMS-305 | Availability | Sufficient notification will be provided of any system downtime for maintenance or the implementation of any changes | Must |
| EMS-306 | Availability | The online EMS reporting system is required to respond within 2 seconds from a request from an end-user | Must |
| EMS-307 | Availability | The EMS reporting hosting system is required to protect data, reference data and data in the download centre, from unauthorized access | Must |

4.5 Single sign-on

| *Req ID* | *Component* | *Description* | *MoSCoW* |
|---|---|---|---|
| EMS-308 | Availability | Users should be able to access the online reporting tool through a single sign on with the EMS Cooperative website and the EMS Operational Guide. The tool should therefore be developed to be compatible with the CAS single sign on system already in place for these two sites | Must |

## 4.6 Others

### 4.6.1 Track and trace

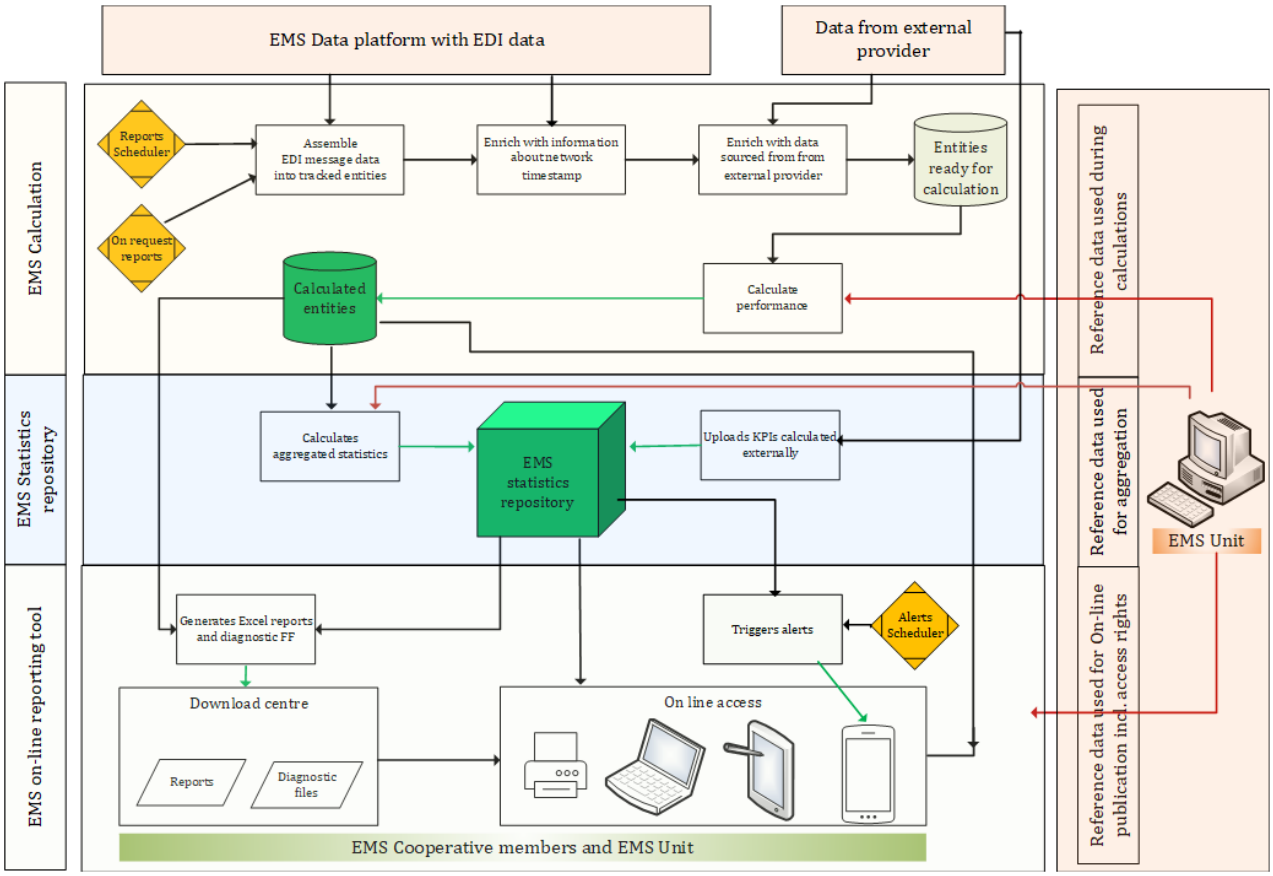
| *Req ID* | *Component* | *Description* | *MoSCoW* |
|---|---|---|---|
| EMS-400 | Online | The EMS reporting system publishes all EMSEVT and CAPE transactions found for an item, regardless of the timestamps | Must |
| EMS-401 | Online | If the item is found in a PREDES, from the origin or from a transit, the EMS reporting system can look for the characteristics of the dispatch (dispatch-ID, dispatch-closed date and time, planned transport departure and planned transport arrival) | Must |
| EMS-402 | Online | If the item is found in a PREDES from the origin operator the EMS reporting system can look for all the items in the receptacle and whether these items received inbound scans from the recipient of the dispatch | Must |
| EMS-403 | Online | If an item is found in a PREDES from a transit the EMS reporting system can provide<br>• Dispatch/consignment closure and transport details from PREDES, PRECON and CARDIT<br>• RESDIT 74, RESDIT 21, RESCON and RESDES timestamps for the receptacle | Must |
| EMS-404 | Online | If an item is found in a PREDES from transit only the items from the origin/owner operator in the PREDES are visible to that operator | Must |
| EMS-405 | Online | From the screen with list of items in a receptacle the user can request the tracking history of any other item in the receptacle | Must |

### 4.6.2 UPU CL160 (EDI mailboxes) and UPU CL108 (IMPC codes)

| *Req ID* | *Component* | *Description* | *MoSCoW* |
|---|---|---|---|
| EMS-406 | Online | The EMS reporting system publishes, per operator:<br>• the list of the EDI mailboxes and characteristics<br>• the list of IMPCs under the responsibility of the operator<br>A filter permits to view only the IMPCs that send/receive EMS mail | Could |

### 4.6.3 EDI capability

| *Req ID* | *Component* | *Description* | *MoSCoW* |
|---|---|---|---|
| EMS-407 | Online | The EMS reporting system publishes, per operator, which message and version he sends and receives | Could |
| EMS-408 | Online | The EMS reporting system presents to the requestor operator, by operator to whom he is sending EDI transactions:<br>• the name and version of the messages he his sending<br>• the name and version of the message he is receiving | Could |




**Useful information:**

## 6.2 UN/EDIFACT

UN/EDIFACT (United Nations rules for Electronic Data Interchange for Administration, Commerce and Transport) comprise a set of internationally agreed standards, directories, and guidelines for the electronic interchange of structured data, between independent computerized information systems.

Recommended within the framework of the United Nations, the rules are approved and published by UNECE in the UNTDID (United Nations Trade Data Interchange Directory) and are maintained under agreed procedures.

UNTDID includes:

– UNCDID

  UNCDID comprises a set of uniform rules of conduct for interchange of trade data by tele transmission (UNCID). The UNCID rules are meant to provide a background for users of EDIFACT (Electronic Data Interchange for Administration, Commerce and Transport) and other systems of Electronic Trade Data Interchange

– Glossary

– UNTDID

United Nations rules for electronic data interchange for administration, commerce and transport (UNTDID)

The UN/TDID contains the rules and general information on the establishment and use of EDIFACT message type.

The EDIFACT syntax is standard ISO-9735.

The UN/Trade data elements directory, of which EDIFACT data elements are an excerpt, is ISO- 7372.

Message types are based on business requirements and developed with participation of representatives from interested industries and organizations.

– United Nations directories

Set of directories for electronic data interchange for administration, commerce and transport. Each directory provides, for batch and for interactive EDI, the following set of information:

– Message type directory

– Segment directory

– Composite data element directory

– Data element directory

## 6.3 Short introduction to UPU messages

### 6.3.1 EMSEVT – item events

The EMSEVT message supports the exchange of events relative to international barcoded items. There are two versions of the EMSEVT message in use: EMSEVT V1 and EMSEVT V3 with EMSEVT V3 being a currently used version and allowing more events to be exchanged.

It corresponds to the UPU Standard - M40.

| *Event* | |
|---|---|
| *Tag* | *Description* |
| EMA | Posting/collection |
| EMB | Arrival at outward OE |
| EXA | Item presented to export customs |
| EXB | Item held by export customs |
| EXC | Item returned from export customs |
| EXD | Item held at outward office of exchange |
| EXX | Export cancellation |
| EMC | Departure from outward OE |
| EMJ | Arrival at transit OE |
| EMK | Departure from transit OE |
| EMD | Arrival at inward OE |
| EDA | Item held at inward office of exchange |
| EDB | Item presented to import customs |
| EME | Held by import customs |
| EDC | Item returned from import customs |
| EMF | Departure from inward OE |
| EDD | Item into sorting centre |
| EDE | Item out of sorting centre |
| EMG | Arrival at delivery office |
| EDF | Item held at delivery depot |
| EDG | Item out for physical delivery |
| EDH | Item arrival at collection point for pick-up |
| EDX | Import terminated |
| EMH | Unsuccessful (physical) delivery |

| | |
|---|---|
| EMI | Final delivery |

6.3.2 CAPE suite of messages

The CAPE suite of messages includes the following UPU messages:

**PREDES**: Pre-advice of dispatch prepared

Sender Origin designated operator office of exchange.

Addressee The destination designated operator office of exchange that is the office to which the dispatch has been sent.

Timing As soon as possible after dispatch finalisation, that is, when the dispatch documentation (paper CN 31, CN 32, or CP 87 or electronic equivalent) has been created and at a time in the process when there should be no changes to the data in the message.

Frequency Once per dispatch.

**RESDES**: Administration confirmation of dispatch. Receipt/current exceptions

The RESDES message contains information about receptacles of a despatch of mail that have been processed at a destination exchange office. Its purpose is to provide details to the exchange office of origin concerning the status of the receptacles processed so that quality of service can be assessed, as well as to support accounting.

Sender An exchange office of destination which is the responsibility of a postal administration acting as administration of final destination who received a "Pre-Advice of Dispatch Prepared" (PREDES) message.

Addressee The exchange office of origin which sent the corresponding "Pre-Advice of Dispatch Prepared" (PREDES) message.

Timing: For pre-advised dispatches the response RESDES will be generated:
A. As soon as the complete despatch has been processed, or
B. When explicitly triggered by the receiving administration, or
C. At a fixed time each day, detailing the date and time for each receptacle processed during the previous period

If no receptacle has been processed, no response message will be generated.
A RESDES message describes at most one dispatch.

Frequency: At least once per despatch, assuming at least one receptacle in the despatch has been processed.

**PRECON**: Pre-advice of consignment handed over

The PRECON message contains information about a consignment of mail which has been prepared for hand over to a carrier. Its purpose is to provide:
– planning information to the designated operator which will next handle the consignment;
– the means to automate the checking-in of mail as it is received by that designated operator.

Sender: Designated operator acting as sending operator or transit operator handling one or more receptacles in one or more despatches for a specific transport from or through its own country more receptacles in one or more despatches for a specific transport from or through its own country.

Addressee: Designated operator acting as operator of final destination or transit operator receiving one or more receptacles in one or more despatches of mail using the specific transport.

Timing: Ideally after the "Carrier Confirmation of Receipt" (RESDIT) message has been received or allowed time for carrier response has expired, otherwise at transport document production time. Sufficient time has to be allowed for the PRECON message to reach the destination mail unit.

Frequency: Once per consignment.

**RESCON**: Operator confirmation of consignment. Receipt/current exceptions.

The RESCON message contains information about a consignment of mail which has been received from a carrier. Its purpose is to provide information which can be used to assist with the measurement of the quality of service delivered by the transport provider(s). This can be achieved by monitoring the arrival of containers and receptacles against the pre-advised transport information.

Sender: Origin designated operator acting as transit operator or operator of final destination which received a 'Pre-Advice of Receptacles Handed Over' message (PRECON).

Addressee: Designated operator which sent the mail to the current designated operator.

Timing: For pre-advised consignments (i.e. PRECON received) the response RESCON will be generated:
A. As soon as the complete consignment has been recorded
B. When explicitly triggered by the receiving operator
C. When a pre-determined time period has elapsed since the expected arrival time, based on the mail category

Frequency: At least once per consignment.

**CARDIT**: Carrier/documents international transport

The CARDIT message contains information about a consignment of mail which is handed over to a carrier.

Sender: Designated operator acting as sending operator or transit operator handling one or more receptacles in one or more despatches for a specific transport from or through its own territory.

Addressee: The carrier or the handling agent acting on behalf of the carrier which will transport the receptacles from a particular place of departure to a particular place of arrival.

Timing: Subject to local arrangements. The transmission should be late enough to ensure the documents cover the mail actually handed over but early enough for carriers to uplift.

Frequency: At least once per consignment.

**RESDIT**: Carrier/confirmation of receipt or current exception

The RESDIT message contains information about a consignment of mail as it is processed by a carrier.

Sender: A carrier or handling agent, acting on behalf of the carrier, responsible for transporting receptacles from a particular place of departure to a particular place of arrival.

Addressee: A designated operator acting as sending or transit operator handling one or more receptacles in one or more dispatches for a specific transport from or through its own territory.

Timing: Ideally upon discovery of event. Time restrictions imposed by the need to inform the transit operator or operator of final destination in case of changes, especially for airmail; depending on events to be reported, date and time limits apply.

Frequency: Once or multiple per consignment.

### 6.3.3 ITMATT – postal item attributes

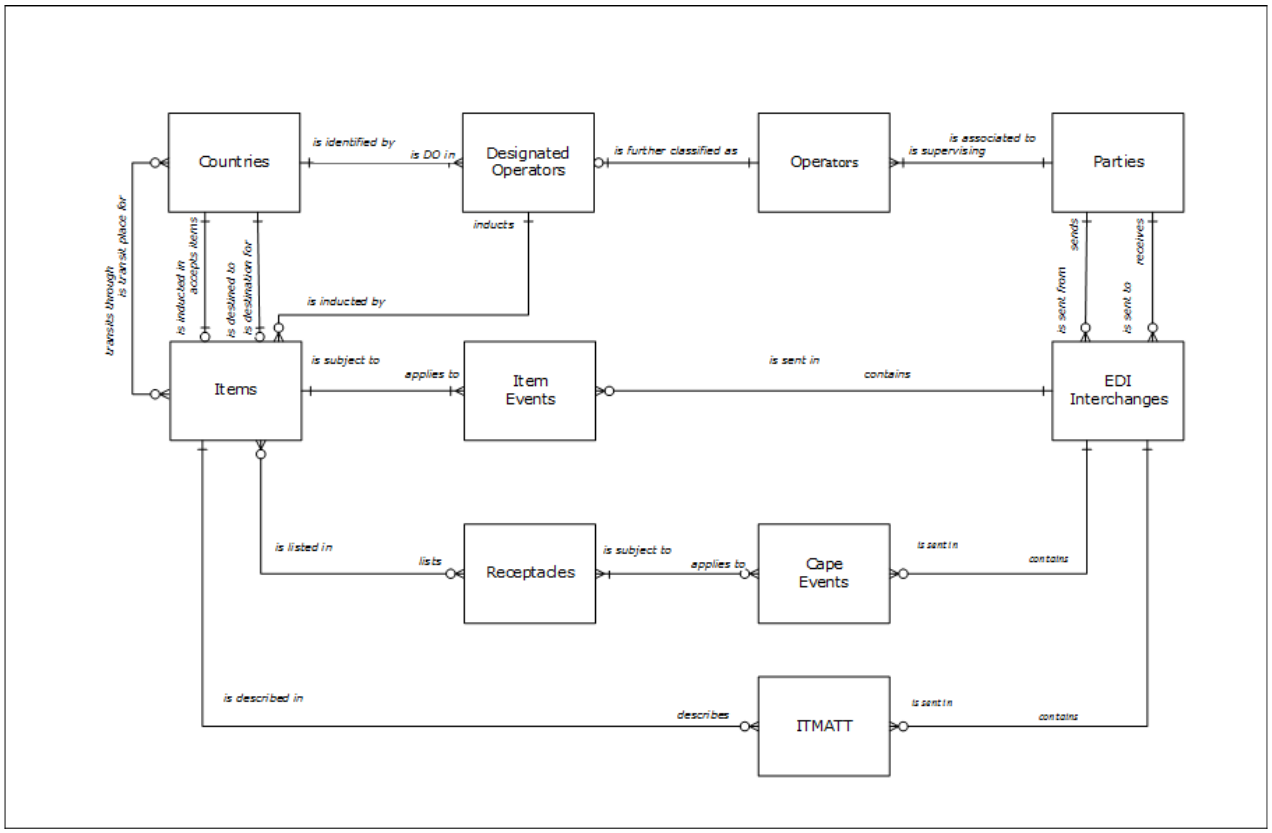
The ITMATT message contains information about the characteristics of a postal item such as the sender details, addressee details, description of the goods.

The aim in the initial development of ITMATT was to speed up the clearance process at destination. With the increase of security requirements in international transport and the growth on e-commerce, the aim is to provide enough information in the ITMATT for the border agencies to proceed with risk assessment prior to departure and for the customs authorities to collect duties and taxes on hundred percent of the inbound traffic.
Sender: A designated operator that exports items.

Addressee: The designated operator that will next process the item.

Timing: Early enough to meet processing requirements at origin and/or destination.

## 6.4 ERD countries, parties, operators, events and EDI


Countries
is identified by
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Designated Operators
is further classified as
Operators
is associated to
is supervising
Parties
inducts
is inducted by
is inducted in
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Items
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applies to
Item Events
is sent in
contains
EDI Interchanges
is listed in
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