

Supplier Logistics Manual

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Logistics Requirements of Harman Automotive Division Group

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Preface

1. Information Logistics

Communication between SUPPLIER and HARMAN is the basis of a successful cooperation. The preconditions for this are:

- Prompt, proactive notification of changes in all matters relating to supplier relations (agreements, processes etc.) by both parties.
- Compliance with and monitoring of agreements.

1.1 Communication between SUPPLIER and HARMAN

1.1.1 Contacts

Suppliers must designate one key contact personnel responsible for handling logistics support (name of contact, nominated deputy and superior, with e-mail address and phone numbers).

SUPPLIER must designate an emergency contact. SUPPLIER has the responsibility to advise any change of contact name, phone number or email.

The key contact person must have the necessary expertise.

Communication language:

- Language of corresponding customer HARMAN plant, OR
- English (as standard for international communication)

1.1.2 Availability

The key contact person designated by SUPPLIER (or his or her proxy) must be reachable on working days between 7 a.m. and 5 p.m. (SUPPLIER'S local time).

Outside of this time period (and during plant shutdown periods), appropriately qualified staff must be on call to handle "emergencies" (including holidays).

In holidays, SUPPLIER is required to provide the contact person to call in case of an emergency.

If SUPPLIER is planning a shut down during the holidays, SUPPLIER needs to produce and ship all the orders for that period in advance (before the shutdown).

SUPPLIER needs to notify the material planner about any shipment sent in advance.

SUPPLIER needs to notify the material planner of any changes in the contact person within 48 hours.

1.2 Information Interchange

Electronic data interchange (EDI) as method of information interchange is fundamental to all supplier relations with HARMAN. SUPPLIER should use EDI to receive and transmit information (such as delivery call-offs/ scheduled releases) from and to HARMAN. Suppliers who do not have an existing EDI link to HARMAN must establish an EDI system based on a jointly agreed schedule and procedure with the receiving HARMAN plant.

Technical requirements and message formats are set out in detail in the specific EDI contracts. This manual also relates to those contract elements. Further information can be obtained from the web page.

A distinction can be made between categories of EDI: Traditional EDI / WebEDI.

1.2.1 Traditional EDI

If SUPPLIER is EDI capable, for the interchange of ordering data HARMAN uses the following industry standards:

| North America Region | Standards |
|----------------------|-----------------|
| A. Franklin | EDIFACT or ANSI |
| B. Queretaro | EDIFACT or ANSI |
| C. Juarez | EDIFACT or ANSI |

HARMAN is able to send either ANSI 830 or EDIFACT DELFOR messages. This will be the only EDI message HARMAN exchanges.

SUPPLIER can choose EDIFACT or ANSI standards. The attached documents (section 7) are the guidelines for the SUPPLIER to develop the EDI map to receive HARMAN releases. Once the mapping is completed, HARMAN can begin testing.

To set SUPPLIER up in traditional EDI please contact the following HARMAN employees:

1. Primary contact: Aaron.brown@harman.com
2. Secondary contact: Bharat.paliwal@harman.com

1.2.2 WebEDI (Harman Portal)

For Non-EDI capable suppliers, HARMAN has the WebEDI portal.

WebEDI is an internet-based information system for suppliers to communicate with HARMAN, used for example in cases of low call-off volumes or where suppliers do not have the necessary infrastructure. Please check section 7 for WebEDI user manual.

WebEDI is the system of record that follows our shipments and MUST be used. In other words, if there are any discrepancies between the HARMAN systems this includes - KN-IL, Traditional EDI and BDP, then WebEDI must be followed. Please note that if you have any issues with the Harman portal, you must contact your assigned material planner immediately in order for HARMAN to correct the problem(s).

WebEDI is an alternative to traditional EDI. HARMAN standard WebEDI application is provided by internet marketplace SeeBurger (Internet: <http://www.seeburger.com>).

To set SUPPLIER up in WebEDI please contact the following HARMAN employees:

1. Primary contact: Pravin.garad@harman.com
2. Secondary contact: elizabeth.vigil@harman.com

1.2.3 EDI Transactions

Suppliers with an EDI connection to HARMAN use delivery call-off/ releases, and advanced shipping notifications (ASN) as the minimum EDI transactions.

1.2.4 ASN / Label Printing / Shipping Documents

SUPPLIER shall transmit an ASN via EDI/ WebEDI system at the same time that the shipping documents are generated.

SUPPLIER is responsible to send the correct information to the correspondent HARMAN plant (ASN quantity, date and invoice number) as well as documentation from EDI.

Shipping documents/ labels are generated in SUPPLIER’S own shipping system according to the following standards:

| North America Region | Standards |
|----------------------|-----------------|
| D. Franklin | EDIFACT or ANSI |
| E. Queretaro | EDIFACT or ANSI |
| F. Juarez | EDIFACT or ANSI |

If SUPPLIER uses WebEDI, it may generate the shipping documents with this tool. Please check section 7 for ASN user manual.

The information used for labeling purposes should be taken from the EDI release/ demand information sent.

1.2.5 KUEHNE + NAGEL (Harman Control Tower)

Harman uses a global control tower process and transportation management system to schedule / manage transportation. As part of the process, suppliers are required to submit shipment requests and upload copies of all commercial shipping documents to the KN IL transportation management & visibility system (document examples include: commercial invoice, packing list, etc.).

Timing for transmission of shipment requests is as follows:

- Ocean / air – Shipment requests should be transmitted between 7-14 days prior to the requested pick-up date.
- Ground – Shipment requests should be transmitted 3 days prior to the requested pick-up date.

Please note, small parcel shipments do not have to be requested and transmitted through the Harman transportation management system. Please book these shipments directly with Harman approved small parcel carriers.

There are two methods for creating and transmitting shipment requests in the system – eCommitment and eBooking. The embedded supplier user guides explain both functions in detail. In addition, there is an embedded video training recording file that provides step-by-step instructions for both functions.

After transmission of shipment requests in the system, Harman logistics operations teams plan transportation, send pick-up notifications to appropriate carriers, and distribute supplier load plans. Carrier pick-up notifications and supplier load plans ensure that everyone knows when, where, and what material will be picked up. Upon receipt of pick-up notifications, carriers should contact suppliers to discuss specific pick-up details.

The website for the system is <http://kuehne-nagel.com/portal/login.do>, and detailed login instructions are included in the embedded supplier user guides in Section 7. Questions or concerns should be directed to the following people:

➤ **Global**

Zoltan Szabellédi – Harman Global Logistics:

+ 361-347-9522 or zoltan.szabellédi@harman.com

Mark Faust – KN IL Program Manager

+ 984-232-6072 or Mark.Faust@Kuehne-Nagel.com

➤ **North America**

Tim Coleman – Harman Global Logistics

248-985-0081 or timothy.coleman@harman.com

KN IL Planning team in Raleigh, North Carolina: knrdu.il.gct.harman@kuehne-nagel.com

➤ **EMEA**

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KN IL Planning team in Luxembourg: knlux.il.gct.harman@kuehne-nagel.com

➤ **APAC**

Jerry Wu – Harman Global Logistics:

+86-21-2306-0918 or jerry.wu@harman.com

KN IL Planning team in Singapore: knsin.il.gct.harman@kuehne-nagel.com

1.3 Order Processing

SUPPLIER receives volumes as non-binding forecast. Based on this, SUPPLIER has to make sure

- that production capacity corresponds to this volume and
- that sub-suppliers are able to deliver material accordingly

1.3.1 Execution

The delivery dates quoted in the call-offs/ scheduled releases (Release processing) are the required dates of receipt by correspondent HARMAN plant. Any non-conformance to that standard must be agreed separately. SUPPLIER checks if the received delivery call-off/ release is complete, correct and plausible (e.g. that SUPPLIER name, part number, quantity and delivery dates are correct). If any discrepancies are noted, SUPPLIER must inform the responsible HARMAN contact immediately (2 days after release was received.)

Delivery call-offs/ scheduled releases are binding for SUPPLIER unless notification to HARMAN within 2 working days after receipt of the release that the requirement cannot be fulfilled.

Order confirmations are only required in case of a non-conformance to the specified delivery date or quantity. Any non-conformance to that standard is agreed separately (2 days after receipt of the releases).

In the case of process deviation, the supplier must prove a functional escalation management.

1.3.2 Order Tracking (Release Process)

SUPPLIER continuously tracks ongoing orders internally. SUPPLIER must be able to provide information of the progress of production at all times. Comprehensive, transparent tracking of orders placed with subcontractors must be ensured.

SUPPLIER will install an early warning system to detect long- term and short- term supply problems over the planning horizon. An effective crisis management system and emergency plans are required.

If disturbances occur which affect the compliance of HARMAN requirements SUPPLIER must initiate the necessary countermeasures. If it becomes clear that, despite the necessary measures initiated, the agreed deliveries cannot be met, SUPPLIER must notify their HARMAN contact immediately via email and advise a new delivery date and/or quantity, as appropriate.

In this case, SUPPLIER must also be able to provide information on the following points:

1. The cause of the supply problem
2. Production output capabilities for the part(s) in backlog and production planning (number of shifts/hours per working day and working days per week)
3. Alternative production options investigated (production lines and/or production schedule; always according to quality requirements)
4. Availability of alternative parts (always according to quality requirements)
5. Check the possibility of partial delivery
6. Premium freight capabilities and timing
7. Escalation of the problem inside its company
8. If no mutually agreed solution can be found, involvement from the highest levels within SUPPLIER's organization will be required.
9. Liability of SUPPLIER due to late delivery is regulated by the relevant delivery contract.

If no mutually agreed solution can be found, involvement from the highest levels within SUPPLIER's organization will be required.

Liability of SUPPLIER due to late delivery is regulated by the relevant delivery contract.

1.3.3 Lead-time modifications

SUPPLIER is responsible to communicate any lead-time changes to their corresponding HARMAN plant.

These changes must be address to the HARMAN material planner, plant director and buyer immediately to avoid any potential shortages.

HARMAN will update the system accordingly once and address any issues.

1.3.4 Production and Material Release

SUPPLIER is obligated to deliver ordered products and required associated materials to the receiving HARMAN plant.

Production releases are legally binding purchase orders of finished goods. However, regarding delivery dates the last updated delivery call-off/ scheduled release is decisive.

Material releases are the basis for HARMAN's obligation to reimburse respective materials purchased by SUPPLIER, if any. Production and material releases relate to dates of receipt by HARMAN.

Periods for production and material releases are defined in general in the relevant supply contract. If the agreed releases are verifiably inadequate to maintain delivery capability, SUPPLIER can apply for an extension for material release or request additional forecast data from his HARMAN contact in individual cases. Requirements beyond those periods represent non-binding forecasts, based on which SUPPLIER plans its production capacity and sample production.

1.3.5 Start-Up and Phase-Out Management

During start-up and phase-out, HARMAN expects increased flexibility from its suppliers. This requires a capacity planning process in order to be able to supply even small volumes timely in the right quantities without an extra cost or with the same cost of the SA.

Capacity planning must be coordinated between HARMAN and SUPPLIER in time. If it is initial agreement, procurement is in charge and after that, Supply Chain team is responsible.

1.4 Controlling of Logistics Performance

SUPPLIER shall monitor the following variables as a minimum in order to record its logistics performance and make the results available on request. Visual presentation of the results on site by SUPPLIER is recommended.

1.4.1 Delivery Performance

SUPPLIER shall operate a system to monitor and, at least on a monthly basis, measure its delivery compliance (in terms of delivery dates and quantities) to the delivery requests of the receiving HARMAN plant.

1.4.2 Premium Freight

Premium freight (also named special deliveries or expedited shipments) is considered to be outside the standard logistics handling as agreed between SUPPLIER and HARMAN in the supply contract. Premium freight is used when there is a risk to disrupt production as this cost is much higher than normal transportation.

SUPPLIER shall record, at least on a monthly basis, the premium freight for which it has been responsible (including as a minimum the instances of such shipments, the additional freight costs, and the cause). SUPPLIER must be prepared to provide information about premium freights – if required by HARMAN.

2. Packaging Logistics

2.1 Specification of Packaging

Packaging is specified between HARMAN and SUPPLIER in accordance with ecological, economic and qualitative criteria. Within the start of the product life cycle, the supplier can undertake the development of the packaging, in case this has an advantage due to process expertise and product know-how of the SUPPLIER.

The responsible HARMAN packaging planner and SUPPLIER finally agree on the product-specific packaging (packaging instruction) which is binding for future shipments. If the SUPPLIER follows this packaging, instruction will be considered in the supplier- evaluation.

The following basic principles must be followed:

1. Avoidance of packaging (as much as possible). The packaging must not be larger or more elaborate than essential to protect the goods.
2. Padding material should be kept to a minimum.
3. Use of single-type component materials. Composite Materials are not allowed.
4. Returnable packaging must be designed to be cleaned, emptied and drained easily.

For more details, please refer to the HARMAN packaging manual in **Section 7**.

2.1.1 Expendable Packaging

SUPPLIER must:

1. Ship parts only in approved Harman series containers.
2. Do not ship in supplier-owned containers unless preapproved. HARMAN will not be responsible for losses)

3. Do not ship in damaged or dirty containers.
 - a. Communicate repair needs without delay.
 - b. Carry a 3-day supply of alternative packaging: A lack of returnable containers is not an excuse to stop shipping.
4. Inventory Management
 - a. Deviation reporting upon container receipts (24 hr window). Supplier is responsible for unreported deviations.
 - b. Monthly inventory reporting
 - i. Include all locations, in-transit and damaged
 - ii. SUPPLIER container inventory with deviations will be communicated to SUPPLIER for investigation and correction within 5 working days. Deviations that are not aligned after 5 working days will initiate a debit to the SUPPLIER's account.

2.1.2 Returnable Packaging

1. Repair and Maintenance
 - c. Do not store containers outside unless approved by HARMAN
 - d. SUPPLIER must tag damaged packaging and call HARMAN Material Planner immediately to disposition
 - e. SUPPLIER is responsible for returnable containers maintenance (clean without dust inside and outside, emptied and drained easily, without any old label).
 - f. SUPPLIER should not scrap or recycle packaging unless authorized by HARMAN Material Planner. This includes all packaging material, damaged inserts, layer pads, top caps and pallets.
2. Bank builds are the responsibility of the SUPPLIER
3. The returnable containers should not be used for bank builds.
4. Bank builds must be repacked prior to shipping.

3. Dispatch Logistics

3.1 Shipping Procedure

When accepting the delivery for shipping, the carrier acknowledges receipt of the quantity and type of parcel or packing unit, but not its content, value or weight.

All paperwork including the bill of lading, the packing slip, and/or commercial invoices are to be sent with the carrier separate from the material at the time of shipment.

Pick-up times and assigned time windows at SUPPLIER's location and other specific requirements are to be agreed between SUPPLIER and carrier/ 3PL.

The prompt, complete and safe delivery to HARMAN has top priority.

3.1.1 Carriers

The HARMAN-specified freight forwarders and parcel services are generally to be used. Exceptions shall be permitted only in specific cases and only upon prior written consent of the respective HARMAN facility. HARMAN has specific carriers and shipping instructions guide for NAFTA, EUROPEAN COMMUNITY, ASIA PACIFIC, etc.

3.1.2 Premium Freight

SUPPLIER usually organizes premium freight. SUPPLIER shall agree with the receiving HARMAN plant on the carriers to be used in order to ensure the fastest method.

The costs of premium freight shall be borne by the responsible PARTY. Where HARMAN bears the cost, a prior written declaration of acceptance is required from the responsible HARMAN plant or 3PL provider in charge.

3.1.3 Combining of Shipping Units

All shipping units must be handed over in a logistically optimized form to the carrier (freight forwarders, parcel services).

Where possible, multiple smaller units should be combined to form one larger unit, taking account of the generally recognized dimensional and weight limits.

3.1.4 Pallets, box pallets and large containers

Shipping units shall contain only one single type of load carrier as a matter of principle.

All wooden crates, pallets and dunnage have to be identified with the IPPC HEAT STAMP, in order to avoid any penalty or custom delays. All wooden packaging without this specification will be charge back to the SUPPLIER.

3.1.5 Maximum weight of packing units

Regional/ local regulations concerning maximum weight for single packing units has to be considered.

3.2 Delivery specifications

The basic outer dimensions of pallets must be maintained. Protrusions and overhangs must be avoided.

SUPPLIER must pack all shipping units in a manner, which is safe for transportation and protected from unauthorized access.

The pack items should be packed in single-type batches. Parts of different releases must not be combined in one pack item.

Packing items are combined to form a safe unit on the shipping unit, and safeguarded against slippage in transit.

At least the top layer must be covered.

Available label pockets must be used.

Tags must be attached to returnable packaging by means of easily removable, residue-free adhesive spots or adhesive tape. Tags must not be glued onto returnable packaging.

The packaging must be clean. Compliance with HARMAN-specific cleanliness regulations and conditions in the delivery and production areas must be ensured.

Mixed consignments are permitted in principle, unless otherwise agreed. The number of mixed consignments should be kept to a minimum. Identical items should be distributed across the smallest possible number of shipping units.

3.3 Labeling of Shipping Units

3.3.1 Labeling Methods

All shipping units are to be identified by a master label. The following minimum data are required with barcode included:

- HARMAN type/HARMAN part number
- Total quantity
- Name of SUPPLIER/ SUPPLIER code or number
- Date Code/Traceability.

In the case of heterogeneous shipping units (mixed containers), SUPPLIER must ensure it that:

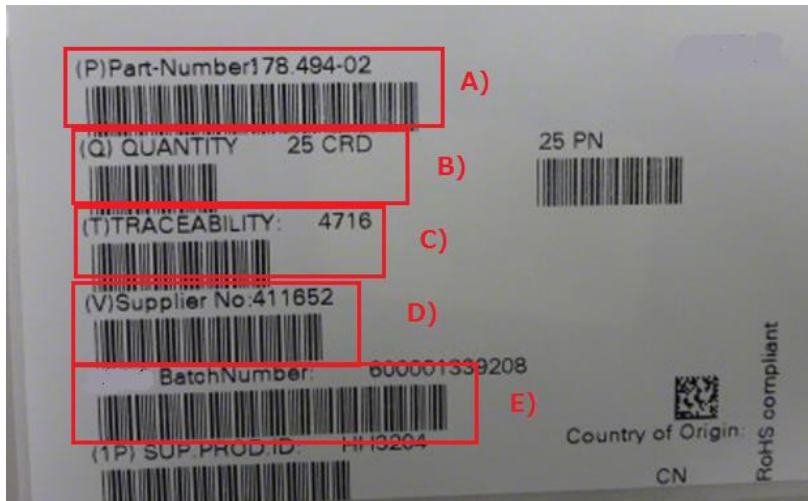
- the transport packaging is identified as a "mixed shipment"
- All HARMAN part numbers in the container are identified with their respective total quantities and different releases within the shipping unit are physically separated from each other and clearly identified.

The smallest packing units are marked by a barcode. Barcodes are obligatory for minimum information requested below:

Label information:

1. HARMAN type/HARMAN part number
2. Quantity per packing unit
3. Date Code/Traceability
4. Name of SUPPLIER/ SUPPLIER code or number
5. Batch identification

Example:



3.4 Shipping Advice

SUPPLIER's advice of shipping to the responsible carrier must be sent in time to comply with the due date of delivery to the destination (unloading point) specified by HARMAN.

The carrier must be provided with all data relevant to the delivery prior to shipping.

These data include:

Collection address:

- Address of SUPPLIER
- HARMAN SUPPLIER number (as on the delivery call-off)
- Collection date and time

Delivery address:

- Destination/ unloading point
- Delivery date

Consignment data:

- Quantity, type of shipping units, where appropriate load meter
- Gross weight
- Where appropriate, customs declaration

The advice of shipping from SUPPLIER to the carrier designated by HARMAN should be sent by EDI/ WebEDI. Until implementation of EDI/ WebEDI, the advice forms and procedures of the respective carrier are to be used.

The carrier shall collect the shipment within a specific time slot, or at the specific time agreed between SUPPLIER and the carrier.

Advice of shipping of hazardous goods must be sent separately. In the case of hazardous goods, SUPPLIER is responsible for ensuring that the collecting carrier is provided with all necessary complete and correct documentation (MSDS mandatory). Components that require extra-ordinary packaging due to their volume shape or design must be announced to the carrier prior to shipping. Any temperature control required due to sensitivity to heat or frost must be stated to the carrier in time prior to shipping.

3.5 Shipping Documents

To identify each delivery, the carrier draws up a separate hand-over document to be handed to the recipients at the destination. Without exception, SUPPLIER shall sent shipping documents (packing, Invoice, AWB, etc.) to the current HARMAN contact.

In order to record the delivery, carriers are usually to be provided with the following information:

3.5.1 Delivery Note

- Sender's address
- SUPPLIER number
- Recipient's address (receiving plant, unloading point as per delivery call-off)
- Total quantity in delivery and quantities per shipping unit
- Usage identification (optional)
- HARMAN part number, incl. quantity and type of packaging
- Number of exchange pallets used per order
- Delivery note number
- Order number / blanket order number
- Batch number and, where appropriate, shelf life/expiry date
- Part modification / revision status
- Invoice

4.0 Logistics Quality

4.1 Supplier Performance Assessment (Q2 process) – Logistics

The aim of the Q2 process is to provide an objective overall analysis of the delivery performance. It also provides a systematic, comprehensive assessment of HARMAN suppliers based on uniform criteria.

The results of the Q2 procedure are incorporated into the following decision-making processes:

- Selection of preferred suppliers
- Exclusion of poorly performing suppliers
- Supplier development measures
- Selection of potential suppliers
- Supplier recognition

The highest-volume suppliers and the preferred suppliers, as a minimum, are assessed at regular intervals. This assessment is based on the performance delivered in the assessment period.

The HARMAN Supplier Result Assessment is structured and weighted as follows:

- Quality result
- Cost/ price result
- Logistics result:
 - ✓ Delivery compliance
 - ✓ Flexibility
 - ✓ Logistics (EDI capability, shipping documents, labeling, etc.)
 - ✓ Communication, Cooperation

The responsible HARMAN planner can provide information on the details of the plant-specific logistics results of the Q2 process. The responsible logistics department can provide information on the overall result.

4.2 Logistics complaints

HARMAN will provide a monthly delivery performance sheet to the SUPPLIER with the following details:

- Good receipts date/Quantity
- Scheduled date/Quantity
- Over/Under Delivery quantity
- Early/Late delivery days
- Open Quantity
- Date/Quantity reliability

SUPPLIER is responsible to communicate any data discrepancies within the next 5 days after receiving the information.

If not complains are reported from the SUPPLIER, HARMAN will assume that the data provided is correct and no errors were found.

5. Outlook

HARMAN is continuously striving to improve its incoming and outgoing logistics processes. This means that the requirements placed on suppliers will continue to change in future.

The goal is to formulate standardized requirements and to limit logistics concepts to a manageable variety.

In this, the focus will be on:

- Establishment of the e-business capability of HARMAN suppliers and increased digitalization of the supply chain through EDI/WebEDI.

This requires the proactive involvement of HARMAN suppliers and service providers. Only suppliers who are prepared to proactively cooperate with HARMAN in new, collaborative concepts may expect to continue business with HARMAN on a long-term basis.

6. Abbreviations

| | |
|---------|--|
| 3PL | Third Party Logistics: Integrated external logistics service provider (transport and/or warehousing) |
| AWB | Air WayBill |
| ASN | Advanced Shipping Notice |
| EDI | Electronic data interchange |
| EDIFACT | Electronic data interchange for administration, commerce and transport |
| MSDS | Material Safety Data Sheet |
| WebEDI | EDI via internet, with content displayed and/or entered using a browser |
| SA | Schedule Agreement |

7. Attachments

WebEDI User Manual

WebEDI ASN User Manual

Traditional EDI Mapping Guideline (DELFORD96A)

HARMAN Becker Mapping Specifications (ANSI 830 4010)

HARMAN Becker Packaging Manual

Traditional EDI (ASN Standards)

KN IL eCommit Reference Guide

KN IL eBooking Reference Guide

KN IL Training Recording (Power point)

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