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Preface
This Supplier Logistics Manual (“Logistics Manual”) is intended to provide all direct materials suppliers (henceforth: Suppliers) of HARMAN Automotive Division business operations (henceforth: HARMAN) a global guidance and operational instruction how to fulfill their delivery obligations to HARMAN. These requirements are in addition to the requirements set forth in any other executed Master Purchase Agreement, issued Purchase Order or Scheduling Agreement (including the General Terms and Conditions incorporated therein (www.harman.com/supply-chain) (collectively “Purchase Agreement”). To the extent of any contradiction between this Manual and any Purchase Agreement, the provisions of the Purchase Agreement shall prevail.

This Logistics Manual sets forth the data requirements, communication requirements and shipping and logistics procedures in support of day-to-day collaboration between HARMAN and Suppliers.

This document is global in nature and contains / references requirements and provides guidance independently of country of origin or HARMAN delivery address. Both HARMAN and Supplier are required to perform any transaction in full compliance to applicable laws and regulations. This document will not detail HARMAN’s country specific or regional requirements, but wherever such a set of requirements is available, it will reference those, and in case of conflict, the local requirements will supersede the general global requirements.

This document is specific to the requirements of HARMAN Automotive manufacturing and supply chain operations. For logistics requirements for other HARMAN divisions or for HARMAN indirect suppliers, please contact your HARMAN Buyers. For our quality requirements, please consult the Supplier Quality Manual (www.harman.com/supply-chain) under “Supply Chain Policies”.

This Logistics Manual is owned by HARMAN SIOP, Automotive Supply Chain Management. This document replaces and supersedes any previous version of Supplier Logistics Manual applicable to automotive related products. This is also a supporting Work Instruction under HARMAN Automotive corporate process PLM530 – Materials Planning and Supply Assurance. This is an online document; any printed copy is for reference only.

Harman – Supplier Communication and Information Exchange
Under the commercial relationship of HARMAN and Suppliers, effective communication and information exchange is key.

General Collaboration and Communication Requirements
Suppliers must designate one key contact personnel responsible for handling logistics support for each HARMAN Plant. If HARMAN plants are handled by one Supplier customer service team, the same contact person should be responsible for all HARMAN plants. Designated contact person must be available for HARMAN inquiries during business hours of the supplier location; should be trained in Supplier and HARMAN processes, should have access to Supplier logistics data (including but not limited to: production planning, production execution, stock, sub-supplier commitments, warehousing and delivery logistics) and Supplier’s regional fulfilment operations contacts. Designated contact person should have a trained backup. Planned absence of the designated contact person should be communicated to HARMAN in advance, and any unplanned absence as soon as possible.

Suppliers must provide HARMAN with emergency contact person(s) who may be contacted outside the Supplier’s normal business hours.
Full contact details of the designated contact person, their backup and next 2 levels of operational escalation points, as well as supplier emergency contacts must be maintained and published to all HARMAN purchasing entities (plants, material planners, category managers). If the Supplier handles HARMAN at multiple regional sales teams, the same information should be made available for each team.

The **standard language** of communication between HARMAN and Suppliers is **English**. Both designated contact persons and their backups must be able to communicate to any HARMAN location in English both verbally and in writing. In case of regional customer service support, local language contacts are preferred, with English required to be an available alternative language of communications. Suppliers must provide all HARMAN Plants with their **business calendar** (holidays, manufacturing shutdown times), as well as the physical address and opening hours of their facilities in case HARMAN is responsible for freight pickup at Supplier location. In case of multiple facilities / locations, the same set of information must be made available for all of them.

HARMAN values and appreciates **timely, accurate, proactive, professional communications** related to any business item.

**Maintenance of Terms and Conditions of Purchase**

HARMAN maintains a global agreement with Suppliers on Pricing and contractual terms and conditions. However, material demand planning and purchasing execution is done locally, by the Material Planning function of our manufacturing plants and pilot factories. In case of a requested pricing change or an observed price discrepancy, Suppliers must address HARMAN Procurement immediately.

To enable error-free demand planning and ordering, Suppliers are required to communicate both to HARMAN Procurement (Category Managers) and HARMAN Plants the following parameters. Beyond initial setup for first purchasing document placement, Suppliers are required to obtain HARMAN Procurement preapproval of any change before it takes place, and/or of any temporary deviation from material logistics parameters.

Key parameters to reconfirm:

- Country of Origin
- Ship-from location, in accordance with global delivery terms agreement
- Delivery terms
- Minimum Order Quantity
- Rounding value or Packaging quantity
- Leadtime

In line with the order response requirements below, Suppliers acknowledge the Purchasing Documents in lieu of a negative response, and are obliged to fulfil accordingly.

In case Supplier announces any change to the Products sold, including allowed End of Life notifications at any level of the Product assembly, the process in the Supplier Quality Manual and the Obsolescence Policy at [www.harman.com/supply-chain](http://www.harman.com/supply-chain) under “Supply Chain Policies”, must be followed, including notification to HARMAN Material Planner and Procurement.

**Electronic Communication and Collaboration**

Usage of electrical collaboration and information exchange solutions is fundamental in the HARMAN supply chain business network. Currently, HARMAN uses the tools listed below. Suppliers are required to use full functionality of the programs they have enrolled to, and alert HARMAN in case of any technical or operational issue that is related to a HARMAN managed software infrastructure. HARMAN is constantly evolving its collaboration toolset and will invite Suppliers to connect via more advanced platforms.
Traditional EDI
If Supplier is capable of establishing a traditional EDI connection, HARMAN will prefer connecting with the Suppliers using traditional EDI, for the communication of Purchasing Documents from HARMAN to Suppliers (including purchase orders, scheduling agreements and demand forecast), and for the communication of Advance Shipping Notifications (ASNs) from the Supplier to HARMAN. For ASNs, Supplier is responsible to create and transmit the ASN message at the same time when shipping documents are generated, and to ensure information quality in the message. HARMAN may initiate the extension of the scope of EDI beyond these minimum transactions to further areas of collaboration.

HARMAN is able to send either ANSI 830 or EDIFACT DELFOR messages.

EDI implementation is done by HARMAN Digital Supply Chain, and may be initiated either by HARMAN Procurement or Materials Planning. EDI mapping and testing is completed for each HARMAN plant.

WebEDI
If Supplier is not capable of establishing a traditional EDI connection, Supplier must join the WebEDI service provisioned by Seeburger (may also be referenced as HARMAN portal). WebEDI is an internet-based information system for the communication of Purchasing Documents from HARMAN to Suppliers (including purchase orders, scheduling agreements and demand forecast), and for the communication of Advance Shipping Notifications (ASNs) from the Supplier to HARMAN. For ASNs, Supplier is responsible to create and transmit the ASN message at the same time when shipping documents are generated, and to ensure information quality in the message.

WebEDI implementation is done by HARMAN Digital Supply Chain, and may be initiated either by HARMAN Procurement or Materials Planning. EDI mapping and testing is completed for each HARMAN plant.

HARMAN Purchasing Documents
HARMAN purchases components and other materials to fulfil production schedules to meet HARMAN customer demand. HARMAN uses SAP MM to create purchasing documents. Purchasing Documents are created by HARMAN Manufacturing / Material Planning at HARMAN plants, based on the commercial terms and conditions negotiated and documented by HARMAN Procurement.

Types of Purchasing Documents
For ongoing demand fulfilment authorization for suppliers, HARMAN creates Scheduling Agreements as a form of Purchasing Documents. This is the preferred ordering method for direct materials used in mass production of HARMAN products.

For incidental demand and as an exception, HARMAN will create Purchase Orders. Examples of items on Purchase Orders would include purchases of service parts, components for R&D testing, small infrequent orders, last time buy orders etc.
Purchasing via Scheduling Agreements + Forecast

Purchasing via Scheduling Agreement consists of 2 elements:

- **Scheduling Agreement** (SA, also known as blanket order, blanket PO, frame order) document establishes work authorization, defines the items, defines the supplier, defines timeframe of authorization, regulates terms and conditions of purchase including but not limited to pricing, payment terms, delivery terms. Only issued once, at the beginning of the authorization period, based on the procurement commercial agreement, and covers the ongoing material demand forecast that references this Scheduling Agreement.

- **Material Demand Forecast** communicates to the supplier the required quantity by requested delivery date. Updated weekly, changes communicated to the suppliers weekly, preferably through automated electronic data exchange.

**HARMAN Demand Forecast to Suppliers**

Terminology: in our process, Material Demand Forecast may also be referred to as Release(s), EDI Releases, forecast, delivery call-off, scheduled release(s), production release(s). This is a set of information related to an Order that specifies the requested delivery dates, and the required quantities to be delivered to HARMAN on those dates. Material demand forecast is part of the Order.

In the Forecast, both quantity and time are of the essence, only **on time delivery in full** is counted as Ontime Delivery Performance that meets the Agreements.

In the Forecast, **delivery date** is defined as the date when the supplier is required to fulfil the delivery at the place defined in the Delivery Terms section of the Scheduling Agreement. HARMAN consolidates requirements in weekly batches, unless otherwise specified in an Agreement. Suppliers should work with HARMAN manufacturing plants to ensure requirements are calculated for the day of the week when Supplier is best capable to deliver the goods to HARMAN (planning calendar). Unless explicitly agreed to in a separate Agreement or preapproved by HARMAN in writing, **early delivery of goods is not accepted**.

In the Forecast, **Quantity** is calculated as multiples of the rounding value or packaging quantity. Suppliers should align with HARMAN Plants to ensure forecast quantity is multiples of the rounding value or packaging quantity specific to their plant.

HARMAN manufacturing performs Material Requirements planning (MRP) weekly and will update the Forecast accordingly. In case of changes, for delivery dates and quantities the last updated and transmitted Forecast is decisive.

The **time horizon of Forecast** varies by manufacturing plant, program or supplier. As a rule, HARMAN will provide a demand forecast up to or in excess of the full commercial leadtime of the components. The horizon of HARMAN forecast consists of 2 time periods (zones):

- **Firm zone** (also known as frozen zone, firm period): forecast in this time zone is firm and fully binding. Suppliers are authorized to create transportation bookings for deliveries in the Firm Zone to meet the delivery dates of the Forecast.
• **Forecast beyond firm zone** (SAP term: planning zone) contain volumes that are non-binding for HARMAN. Suppliers must utilize this data for their manufacturing and sub-tier supply chain capacity planning.

**Supplier Forecast Response Requirements**
Suppliers must respond to HARMAN Forecast in the following manner:

**2 Working Days Response Requirement**
Within two (2) working days after receipt of a Forecast, Supplier must acknowledge Forecast receipt or notify HARMAN in case of missing data transmission. Supplier must review the Forecast for plausibility and notify HARMAN in case of concerns. Supplier must review Forecast and alert HARMAN of any risk, specifically of supply continuity risks. Supplier must review the Forecast for Order changes, indicate cancellation acceptance or liability claim.

**Supplier Delivery Confirmation Requirement**
Suppliers are required to provide a detailed positive confirmation of deliveries, in a data structure that meets the data architecture of HARMAN Forecast. HARMAN standard confirmation template can be obtained from Material Planning and Procurement. Supplier Delivery Confirmation must be sent to each HARMAN Plant not later than 12.00 am on Wednesdays (local time of HARMAN plant). Supplier Delivery Confirmation must correspond to every Forecasted date and/or quantity, for every PN in the Forecast, at least to the extent of the full commercial leadtime of the products. Suppliers are explicitly required to **inform and alert HARMAN of any delay or quantity deviation**, regardless of the cause of delay or deviation.

**Supplier Forecast Confirmation Requirement**
Any time upon request by HARMAN or at least quarterly, Suppliers are required to provide HARMAN with a written confirmation of production capacity by PN that meets the highest Quantity in the Forecast.

**Supplier Delivery to HARMAN**

**Trade Compliance Requirements**
All Supplier actions, including fulfilment of HARMAN Orders, must comply with all law and regulations relevant to the transaction, including but not limited to US import and export regulations. Supplier must correctly indicate country of origin as well as preferential country of origin of the products and provide supporting documentation respectively. Suppliers also must adhere to all HARMAN policies listed at [www.harman.com/supply-chain](http://www.harman.com/supply-chain), including the Supplier Code of Conduct document. Unless otherwise specified in an Agreement, Supplier shall abide to the requirements set forth in the Terms and Conditions document referenced in the Preface.

**Packaging and Labelling Requirements**

**Packaging** is specified and agreed for each material between HARMAN and Supplier in accordance with ecological, economic and qualitative criteria. Packaging must be adequate to protect the goods during freight and storage, in a production ready and defect free condition. Unless HARMAN articulates specific requirements, both returnable and expendable packaging should be proposed by the Supplier including design and cost, and the final decision on the packaging is made by HARMAN, documented at product qualification and as part of the contractual Deliverables by the Supplier. Any change to agreed packaging must be notified to HARMAN before application. Supplier is responsible for maintaining the condition of returnable packaging, including shipping containers.
Labelling must ensure proper identification of the product and its shipping units during handling, transportation, storage and manufacturing processes. Minimum data content and format requirements are listed in the Packaging Requirements documents below, unless specified by a drawing or technical specification.

While packaging and labelling requirements may differ by product, region/plant, mode of transportation, the following general requirements must be considered by all Suppliers:

- Packaging must comply with all related compliance and quality requirements and standards in their material and design.
- Packaging design should minimize packaging material use, should prefer sustainable packaging solutions and materials, including but not limited to reusable packaging. HARMAN will prefer reusable packaging wherever logistically and technically feasible.
- Packaging must be validated by the Supplier, and validation evidence must be retained.
- Labelling serves the purpose of product identification, with identical data content both at the components (wherever applicable) and at their immediate containers. Label content must reflect real data, and be consistent across product labels, shipping and commercial documents.
- In case of mixed containers (consolidated shipments, heterogeneous shipping units) Suppliers must ensure that full content of the shipping is marked with details on the outer packaging, and that different products are physically separated within the shipping unit.

All Packaging Requirements can be found at www.harman.com/supply-chain

Transportation, Delivery Logistics Requirements

Suppliers are required to fulfill Orders in full compliance with the Delivery Terms shown on the face of the Purchasing Documents. HARMAN uses the IncoTerms standard for delivery terms specifications.

Documentation Requirements

Supplier shall provide for each shipment at least the following documents:

- Full, detailed commercial invoice
- Packing List

Shipping Advice, Shipping Report

Suppliers are requested to create Advance Shipping Notification (ASN), and wherever enabled, send the ASN to HARMAN via EDI/WebEDI. Where no such electronic enablement is in place, Suppliers are required to provide shipping notification/shipping report to the purchasing HARMAN plants.

Delivery to HARMAN by Supplier’s Logistics Service Providers

To the place of delivery specified in the delivery terms on the Purchasing Documents, Suppliers must arrange transportation to meet the requested delivery dates as shown in the Purchasing Documents. Suppliers are responsible for the delivery performance of their logistics service providers.

Suppliers must ensure that their logistics service providers contact the respective Material Planner in HARMAN minimum 1 business day prior to the planned delivery date to get/confirm delivery requirements for the shipment (delivery appointments, customs clearance).

Delivery to HARMAN by HARMAN’s Logistics Service Providers

For all HARMAN paid transport for shipments >70kgs, the supplier is required to make a transport booking in the HARMAN Transport Management System (TMS). This system is
operated by the BDP 4PL organization for HARMAN and may also be referred to as Control Tower. A link to this tool and a supplier manual how to create transport booking is available under www.harman.com/supply-chain Supply Chain Policies “Transportation Management Details”. Recorded supplier training sessions are available in English and in Mandarin. After submitting the transport booking, the supplier will receive an email from the BDP 4PL team to advise which HARMAN contracted forwarder will pick up the shipment.

For shipments <70kgs the supplier is required to book the shipment directly with the HARMAN preferred parcel carrier (DHL, UPS, FedEx). The HARMAN material planner will advise the correct parcel carrier and account number that can be used for shipment booking. Suppliers should only use HARMAN parcel carrier accounts for preauthorized shipments in line with this Guidelines.

Expedited Freight
Any deviation from standard freight arrangements (freight service level, mode of transportation, routing) must have previous agreement between HARMAN and the Supplier, documented in writing or in the BDP 4PL tool.

If the Supplier is in delay or at fault, Supplier shall bear the cost of expedited freight and should use their own carriers of choice to arrange expedited transportation, ensuring fastest available delivery to HARMAN. In case HARMAN logistics service provider or forwarder account is used, Supplier shall reimburse HARMAN for all related costs. Supplier must provide Harman with full shipment trackability.

If expedited freight is requested by HARMAN, the following procedure should be used by Suppliers.

Expedited Freight of Supplier Managed Transportation
In case HARMAN requests freight service level upgrade or expedited freight of a shipment in writing, where the standard mode is transportation by the Supplier, Suppliers should contact the respective HARMAN material planner, who will advise the correct parcel carrier and account number that can be used for shipment booking. In these cases the delivery terms on the commercial transactional documents (e.g. invoice, delivery note, packing list) must reflect the change (fall back to EXW terms).

Expedited Freight of HARMAN Managed Transportation
In case HARMAN requests freight service level upgrade or expedited freight of a shipment where the standard mode is transportation by HARMAN, Suppliers must book transportation in BDP 4PL tool, then HARMAN Material Planner will initiate the change to an existing booking with BDP 4PL. After internal approvals, Suppliers will be contacted by the appointed logistics service provider for pickup arrangements.

HAZMAT / Dangerous Goods Shipments
In case of a shipment of Hazardous Materials / Dangerous Goods, Suppliers must make the transportation booking in BDP 4PL Tool, marking the shipment as Dangerous Goods (DG) freight at booking. Once the Control Tower appoints a 3PL logistics service provider, Suppliers should contact the appointed forwarder for detailed requirements.

Supplier Delivery Performance Requirements and Measurements
Ontime Delivery Performance Measurement
HARMAN’s supplier on-time delivery measurement measures the Suppliers’ performance on requested delivery date vs goods receipt date, and expects deliveries to be on time in full. It compares the purchasing document’s required delivery date/quantity to the actual delivery date/quantity from the goods receipt material movement document.
**Scores for date reliability**
- On time: 100 points
- Too late: 1 point
- Too early: 1 point

**Scores for quantity reliability**
- Full quantity delivered: 100 points
- Quantity discrepancy: 1 point

Tolerance windows are adjusted on plant and supplier level, considering the suppliers’ shipping method, shipping frequency and the agreed delivery terms.

In the example below you see an on-time delivery measurement with a tolerance window of +/- 2 days:

The monthly on-time delivery performance of a supplier will be the average of the on-time delivery result of each order line delivered during that month.

HARMAN is continuously working on improving and extending the capabilities of its supplier on-time delivery measurement. Category Managers and the Global Supply Chain team can provide details on this metric and an updated report of the supplier’s performance.

**Shipping Process Compliance Measurements**
HARMAN will measure Supplier compliance to the shipping procedures (including but not limited to proper use of BDP 4PL toolset, booking timeliness, booking accuracy).

**Invoicing Requirements**
Suppliers are required to provide HARMAN with a commercial invoice to facilitate payment for the goods purchased, as well as to enable foreign trade transaction processing. For Harman invoice requirements, please refer to your Purchase Agreement and www.harman.com/supply-chain “under Invoicing Requirements & Payment Inquires”.

**Local Requirements**
For shipments for HARMAN India (Harman International India Pvt. Ltd. manufacturing plant in Pune, MH, India), Suppliers are required to comply with the following requirements:

- Supplier must submit a full, final commercial invoice alongside the shipment, handed over to the LSP at freight pickup. Invoice number is recorded at import customs clearance and only the customs authorized invoice can be the basis of payments.* In the shipping documents, Supplier must be named as Shipper, even if shipments are fulfilled by Supplier’s LSP. LSP company name may only be mentioned as C/O.
Terms, Abbreviations, Definitions

4PL – 4th Party Logistics service provider. It is a company that provides an integrated transportation management solution, including operational management of logistics service providers.

ASN – Advance Shipping Notification – is an electronic message notifying HARMAN as a Customer of a confirmed shipment from the Supplier.

C/O – “care of” – appointed subcontractor (e.g. logistics service provider) of a company. In case Supplier outsources any of their logistics activities to a 3rd party, Supplier still need to be named in all shipping documents, and the service provider is to be named as C/O.

EDI – Electronic Data Exchange – is a standardized way of business-to-business information exchange between systems, in form of strictly formatted messages, without human interaction.

LSP – Logistics Service Provider – a 3rd party company that performs logistics services (including transportation, warehousing, customs processing) on behalf of Supplier or HARMAN.

MM – Materials Management – is an instance (module) of SAP for materials management (material planning, procurement, warehousing)

MRP – Materials Requirements Planning – is a transaction in SAP that calculates the material requirements to fulfil sales orders and/or to realize production plans.

PO – Purchase Order – is a form of purchasing documents in SAP. It is designed to regulate the terms and conditions and the scope of work for a demand fulfilment requirement.

Purchasing Documents – the Harman issued document setting forth quantity such as a purchase order, scheduling agreement and forecast

Release – is a business event related to a Scheduling Agreement, when HARMAN communicates to the Supplier the details of deliverables (demand forecast). It is also understood as a specific version update to the demand forecast message.

SA – Scheduling Agreement – is a form of purchasing documents in SAP. It is designed to regulate the terms and conditions of continuous / recurring demand fulfilment.

SAP – is an Enterprise Resource Planning and management application used by HARMAN to manage its business transactions.

WebEDI – is an electronic data exchange platform, hosted for HARMAN by a 3rd party service provider. WebEDI enables business-to-business data exchange and interaction via an internet portal.