IMDS Efficiency & Effectiveness

Foreword

The purpose of this document is to provide guidance in evaluating the efficiency and effectiveness of a Business Unit IMDS process. It can be accomplished by utilizing the attached Efficiency and Effectiveness Questionnaire. The document is optional. It was approved by the IMDS Steering Committee.

IMDS Steering Committee is convinced that the questions as such could be very helpful to prepare or optimise the company internal IMDS-processes, but the IMDS Steering Committee do not see the need to do audits of the supply chain.

IMDS Steering Committee
Chair J. Lundström,

September2007

IMDS Efficiency & Effectiveness

1.0 Purpose

The purpose of this document is to provide guidance in evaluating the efficiency and effectiveness of a Business Unit (BU) IMDS process. It can be accomplished by utilizing the attached Efficiency and Effectiveness Questionnaire. The document is optional. It was approved by the IMDS Steering Committee.

Definition: Effectiveness means completing activities so that organizational goals are attained ("doing the right things") concerned with ends. Effectiveness optimizes the reach of accomplishment whereas efficiency optimizes the effort and accomplishment.

2.0 References

- All IMDS Recommendations
- Global Automotive Declarable Substance List (GADSL) under www.gadsl.org
- Legal requirements to automotive industry (EU and worldwide) as mentioned in this document
- DIN-ISO 9000

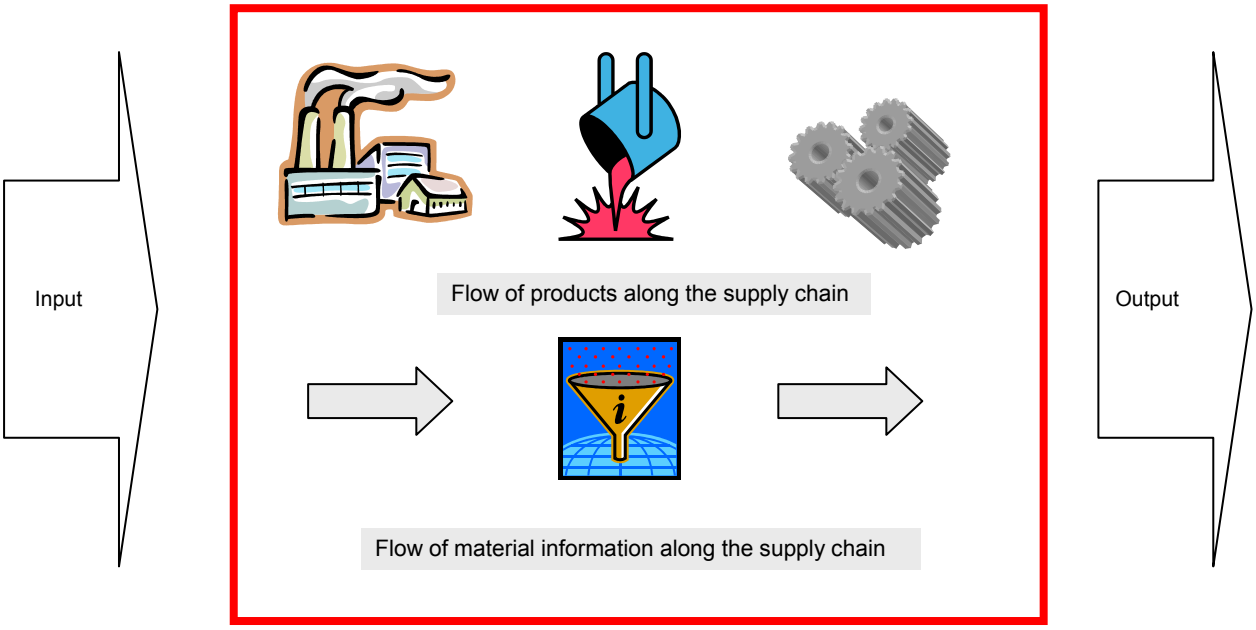
3.0 Periodic Process Evaluation

To achieve optimum efficiency and effectiveness, the following IMDS Efficiency and Effectiveness Questionnaire will be needed to be repeated periodically by the upper tier^{n-1} Business Unit (the customer) once being chosen as the valid document for inter-business unit purposes. The interval between the periodical evaluations should not exceed 2 years. In alternative the Business Unit's efficiency and effectiveness can also be assessed by external but accredited consultants.

4.0 Definitions/Descriptions

4.1 Definition: Business Unit (BU)

A Business Unit (BU) is an entity providing its automotive product(s) (assemblies) to the next higher tier level. The product is then incorporated into the customer's product. A BU can have only one single IMDS ID org.-address.
The automotive BU is part of the supply chain, producing materials (especially in the beginning of the supply chain) or components and assemblies (mid/end of the supply chain). Parallel to the flow of the materials/components/assemblies there exists a flow of information. The material declaration through IMDS system is part of this information flow.



BU (Business Unit)

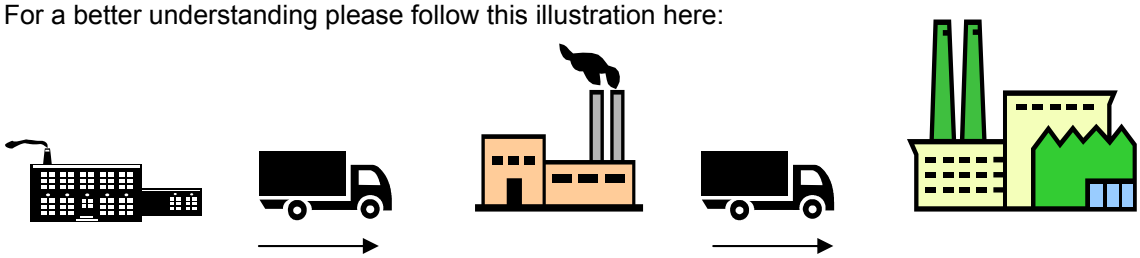
4.2 Definition: Component

4.2.1 Definition per EU Directive 2005/64/EC ('RRR'-Directive):

'Component part' means any part or any assembly of parts which is included in a vehicle at the time of its production. It also covers components and separate technical units as defined in Article No. 2 of Directive 70/156/EEC.

4.2.2 Definition per IMDS

The definition in IMDS follows the 'sender-recipient model'. Any product put onto the market from one BU to the other BU, along the automotive supply chain and which is used to build up an automotive vehicle is a component, as noted in this .
For a better understanding please follow this illustration here:



This definition covers in IMDS terms components, semi-components and materials (see IMDS REC001), once shipped within the supply chain. It does not cover basic substances.

4.2.3 Raw material supplied to the automotive industry

4.2.3.1 Substance (EU Directive 76/769/EEC, article 1, clause 3)
“Substance" describes a chemical element and its compounds as it occurs in the natural state or as produced by industry.

4.2.3.2 Preparation (EU Directive 76/769/EEC, article 1, clause 3)
"Preparations" are defined as mixtures or solutions composed of two or more substances, where both, "Preparation" and "Substance", are covered by IMDS terminology of “materials”. Metallic alloys which consist of different substances can be defined as “preparation” as well.

4.2.3.3 MDS Reporting Requirement starts at (Semi-) Component Level
Raw materials supplied to a next tier level must be reported in IMDS as materials. Raw materials, which are mixed to a new homogenous material (e.g. master batch colour from supplier A and a basic material plastic granular from a supplier B), have to be described in the same way.

A component per definition also covers the IMDS definition of a semi-component due to the fact that also raw materials are being supplied to the automotive tier customers. All Business Units BU supplying products into the automotive supply chain are affected by the IMDS material documentation requirement. Business units trading components, semi-components and/or materials for automotive industry are not exempted.

5.0 Business Unit (BU) requirements

An IMDS process should contain the following:

5.1 Business Unit (BU) material data collection

The Business Unit (BU) is required to collect material data information of all incoming automotive products from its suppliers. All IMDS component material data needs to reference suppliers’ data.

5.2 Business Unit (BU) assessing its supplier

The Business Unit (BU) is required to assess its sub-supplier’s material collection process by utilizing the Efficiency and Effectiveness Questionnaire (see in following).

5.3 Business Unit (BU) IMDS personnel requirements

The Business Unit (BU) is required to have only IMDS trained personnel assigned to the IMDS process to validate in-coming MDS from suppliers and create MDS for customers.

5.4 Business Unit (BU) IMDS Efficiency Questionnaire

The Business Unit (BU) is to utilize the Efficiency and Effectiveness Questionnaire.

5.5 Additional general Efficiency and Effectiveness Requirements

5.5.1 Final Assessment Result
The final assessment result is to be signed by both assessing and assessed BU, while the questionnaire responses are to be treated with confidentiality. Only the assessed BU is allowed to give information about assessment results to third parties.

5.5.2 Qualification of Auditor
The auditor assessing the BU needs to be qualified and is to have at least 3 years of experience on/with IMDS.

5.5.3 Re-assessment
Should the assessment result not be satisfactory, corrective measures are to be implemented and a new target date of re-assessment is to be arranged. In the re-assessment the results of the previous assessment are to be utilized. The re-assessment date is to be no later than 8 weeks from the date of the unsatisfactory assessment.

5.5.4 Quality of Material Data
The quality of the BU's material data is defined by all IMDS Recommendations valid at the time of the material datasheets' submission and by customer IMDS reporting requirements.

5.5.5 Detect and avoid System
The BU is to have established a suitable process system in order to detect and avoid non-conformities regarding IMDS Recommendations and must have a corrective action plans in place. Any violation of the quality of material data (ref. 5.5.4) is a non-conformity.

5.5.6 Traceability
For traceability reasons any defect or non-compliant IMDS datasheet generated by the BU must be comprehensible, identifiable and allocable per program and component. An example of a defect or non-compliant material datasheet would be a material datasheet that is in non-compliance to the GADSL-list (ref. www.gadsl.org).

5.5.7 Necessity to perform Tier^{n+1} assessments
The assessed BU is to regularly assess all its own suppliers (Tier^{n+1}) using this document.

6.0 IMDS Efficiency and Effectiveness Questionnaire

6.1 Purpose

Efficiency is the relationship between results achieved and resources used. The following questionnaire should be used to establish a benchmark to the IMDS processes of the assessed Business Unit (BU).

6.2 General Criteria Requirement

Any of the criteria that will be assumed or considered for a BU IMDS process requires the provision of proof or sufficient level of evidence by the certified and assessed BU. It is up to the auditing/assessing party (i.e. tier^{n-1} level BU) whether to accept the required BU's feedback or if the BU's customer will follow the maximum requirement in this document.

6.3 Efficiency Calculation

The following questionnaire should help the BU to analyze its own process of material declaration and to run a lean in-house IMDS process. The questionnaire will identify all parties which are involved in the process of material tracking between the tier^{n+1} supplier, the BU (as part of the supply chain) and the tier $^{n-1}$ supplier (next level customer in the supply chain).

6.4 IMDS Material Data by internal or external source

The BU can decide to create and/or validate IMDS material data with its own personnel or to have external expert personnel (e.g. consultants) performing the IMDS process on behalf of the BU. In either case the BU is solely responsible for the BU's material data and audit result, and therefore is also responsible for ensuring the qualification of the personnel (external or internal) involved in the IMDS process.
An external source (i.e. consultant) needs not to be assessed if a valid IMDS Efficiency proof was made available to the assessing party before the audit.

7.0 IMDS Efficiency and Effectiveness Assessment Evaluation

This section covers basic requirements keeping the BU's IMDS process efficient.

Note: The assessment is not to be continued by the assessing party if any of the Business Unit requirements described in this document per section 5 were not met by the assessed BU.

7.1 Personnel and Organizational Requirements to the BU

7.1.1 Qualification of Employee(s)

BU employee(s), directly involved in the validation, creation and submission process of IMDS material datasheets, is/are continuously trained (minimum annually) in IMDS and the training certificates are made available.
Alternative: Employee(s), concerned in the validation and creation process of IMDS material datasheets, is/are working with the IMDS System a minimum of 3 years.

Answer (20 Points): ☐ Result: 0

7.1.2 Employees' job description covers IMDS

BU employee(s), directly involved in the validation, creation and submission process of IMDS material datasheets, have a detailed job description that specifies all IMDS deliverables.

Answer (10 Points): ☐ Result: 0

7.1.3 Employee(s) educational status

BU employee(s), directly involved in the validation, creation and submission process of IMDS material datasheets, has/have a technical degree (preferable in chemistry, materials or science) or has/have a minimum of 3 years experience working with the IMDS.

Answer (20 Points): ☐ Result: 0

7.1.4 Employee(s) performing IMDS Material Data Validation

Only the BU's IMDS qualified personnel (ref. 5.1.1) is/are authorized in the material data validation process and can accept the BU's supplier material datasheets. Any other personnel is/are excluded from this.

Answer (20 Points): ☐ Result: 0

7.1.5 BU' IMDS personnel included in BU's organization

All BU's personnel involved in the IMDS process, covering the BU's IMDS qualified personnel (ref. 5.1.1) as well as peripherally involved personnel, is/are located in the BU's organizational chart, such as for

- Program Management
- Quality, for PPAP and part submission warrant
- Purchasing
- Materials and Design (Engineering)

Answer (20 Points): ☐ Result: 0

7.1.6 Involvement of Research and Development

The BU owns and utilises an IMDS process workflow involving the research, development and engineering department(s). Those departments are informed and take action considering when a component status is updated due to legal restriction and customer concern (ref. GADSL-list / substance of concern threshold updates). The BU shows evidence that its design as well as its production processes is legal and customer reporting compliant.

Answer (10 Points): ☐ Result: 0

7.2 General Process related Requirements to the BU

7.2.1 IMDS Process Flow Chart

The IMDS process flow chart describes all steps of the BU's IMDS process. For each IMDS process step all characteristics are defined and individual deliverables described.

Answer (10 Points): ☐ Result: 0

7.2.2 Process Flow Communication

The IMDS process flow chart is communicated within the BU's organization to all IMDS-involved employees, to the BU's IMDS experts as well as partially involved personnel.

Answer (10 Points): ☐ Result: 0

7.2.3 Process Operation Instruction

Derived from the BU IMDS process flow chart the instructions are available in a procedure manual and/or in operational instructions.

Answer (20 Points): ☐ Result: 0

7.2.4 Process Key Indicators

The BU's IMDS process key indicators are recognized, identified and being recorded.

Answer (10 Points): ☐ Result: 0

7.2.5 Process steps of potential risk

The BU has a system in place to identify potential IMDS process risks (internal and external) and can name responsible parties and corrective activities within the BU.

Answer (10 Points): ☐ Result: 0

7.3 BU Validation of Material Data

Data being submitted to the BU is to be validated against current IMDS Recommendations.

7.3.1 Utilization of IMDS Upload Request Function

Does the BU utilize the IMDS (Upload) Request Function in IMDS for sending IMDS reporting requests to the BU's Tier^{n+1} supplier?

Answer (20 Points): ☐ Result: 0

7.3.2 GADSL-List as Reference for Substances of Concerns

The current version GADSL listed under www.gadsl.org is used to identify Substances of Concern (SoC) and is the BU's standard reference list (worldwide/locally).
Note: **The assessment is to be stopped, if the answer is negative**.

Answer (30 Points): ☐ Result: 0

7.3.3 GASDL Substance of Concern "Expiration Date"

All reported part numbers with GADSL listed substances having an expiration date are under the BU's control.

Answer (30 Points): ☐ Result: 0

7.3.4 Reference to BU's Supplier(s) data

The BU can prove and make evident that all BU IMDS material datasheets are referenced to material datasheets from the BU's supplier(s) (exception: material(s) produced/shipped within the BU or provided by the IMDS Steering Committee Org.-ID 423.).
The assessment is to be stopped, if the answer is negative.

Answer (20 Points): ☐ Result: 0

7.3.5 Identification of Substances of Concerns

The BU can prove and make evident that it can identify Substances of Concern (ref. GADSL) for all its products (e.g. by in-house tool) at any time and flags such substances.

Answer (30 Points): ☐ Result: 0

7.4 Consolidation of the BU's supplier IMDS Data (assembled data)

Validated IMDS data submitted to the BU is to be consolidated/assembled reflecting the BU's product(s) shipped to the tier^{n-1} customer.

7.4.1.a Plant/Manufacturing BOMs used to consolidate the BU's Datasheets

The BU utilizes its product manufacturing Bill of Material (short: Man.-BoM) in order to consolidate the validated supplier IMDS material data (exp.: BU's MDS produced in-house)

Answer (20 Points): ☐ Result: 0

7.4.1.b Engineering BOMs used to consolidate the BU's IMDS Datasheets

The BU utilizes its Engineering Bill of Material (short: Eng.-BoM) in order to consolidate the validated supplier IMDS material data (exp.: BU's materials produced in-house)

Answer (10 Points): ☐ Result: 0

Note: Both methods of 7.4.1.a and 7.4.1.b can be established in the BU, but only one answer shall be evaluated and chosen (exclusion clause with Manu.-BOM preference)

7.4.2 IMDS Data is validated before submission

The IMDS data to be submitted to the BU's tier^{n-1} customer(s) is validated again against the GADSL-list and against customer specific material data reporting requirements before submission.

Answer (10 Points): ☐ Result: 0

7.4.3 Rejected IMDS Data Planning

In case where the IMDS data submitted to the BU's tier^{n-1} customer(s) is rejected, the BU can provide corrective planning initiatives in order to become GADSL and customer compliant (categories, disputation, rejection loops)?

Answer (20 Points): ☐ Result: 0

7.5 The BU performing supplier audits

The assessed BU is to assess its Tier^{n+1} supplier(s) using this Recommendation and its annex.

7.5.1 Requirement of IMDS compliance to Tier^{n+1} suppliers

The BU requires all its Tier^{n+1} suppliers to be compliant with all IMDS Recommendations.

Answer (30 Points): ☐ Result: 0

7.5.2 Tier^{n+1} supplier performance evaluations

The BU performs statistical analysis of each Tier^{n+1} supplier IMDS effectiveness performance of IMDS data submitted to the BU. The statistic is updated monthly and reflects a ½ year (6 month) period. The error rate required of the BU Tier^{n+1} supplier(s) is maximum 2% according to the following equation:

$$\frac{\text{Rejected Material datasheets [6 month]}}{\text{Submitted Material datasheets [6 month]}} \leq 2\ \%\ \text{[error rate]}$$

Answer (20 Points): ☐ Result: 0

7.5.3 IMDS Efficiency and Effectiveness Assessment Planning

The BU performs on regular basis (maximum interval of 2 years) Tier^{n+1} supplier assessments, or in alternative performed by external accredited consultants, utilizing the IMDS Efficiency & Effectiveness Evaluation (IMDS E&E)?

Answer (20 Points): ☐ Result: 0

7.5.4 List of Assessed / to be Assessed Tier^{n+1} suppliers

The BU can provide a list of already assessed Tier^{n+1} suppliers and/or can provide planning details of assessed Tier^{n+1} suppliers for the coming 12 months time (= provision of future assessment planning).

Answer (20 Points): ☐ Result: 0

7.5.5 Material Data Management as part of the BU's Purchasing Strategy

The BU can provide defined (purchasing/quality) sanctioned processes for controlling Tier^{n+1} suppliers infringing IMDS submission deadlines and repeated incorrect IMDS reporting.

Answer (30 Points): ☐ Result: 0

7.5.6 Material Data Management as part of the BU's Exclusion Strategy

The BU can provide a defined (purchasing) process wherein Tier^{n+1} suppliers are excluded from future development process for repeated material non-compliances and violation of IMDS Recommendations or customer IMDS reporting requirements.

Answer (30 Points): ☐ Result: 0

7.6 Additional Environmental Applications

This section covers the BU's environmental design capabilities.

7.6.1 BU's Policy and Objective Reducing Material Variety

The BU's material data and management are used to reduce material variations in development programs and products. Note: Those points will be only added to the BU's final result if the BU was rated minimum AB during the assessment.

Answer (10 Points): ☐ Result: 0

7.6.2 BU's Recycling Policy and Objective

The BU's material data and management are used in the BU's development programs and environmental considerations/decisions (DfE - Design for Environmental). The BU brings the material data information (from all stages of the product life cycle) into the design process to improve design decision-making and optimize product performance. Note: Those points will be only added to the BU's final result if the BU was rated minimum AB during the assessment.

Answer (10 Points): ☐ Result: 0

8.0 BU IMDS Performance Evaluation [*1]

The BU performs statistical analysis of its own IMDS effectiveness performances regarding IMDS datasheets submitted to the BU's Tier^{n-1} customer(s). The statistic is updated monthly and reflects a ½ year (6 month) period. The maximum error rate required to the BU is 2%, using this equation:

$$\frac{\text{Rejected Material datasheets [6 month]}}{\text{Submitted Material datasheets [6 month]}} \leq 2\ \%\ \text{[error rate]}$$

The total of submitted datasheets includes every version of a material datasheet submitted to the BU's Tier^{n-1} customer(s) and includes datasheets rejected by the BU's Tier^{n-1} customer(s) for the given period. Only material datasheets submitted according to the IMDS Recommendations and to customer requirements are to be considered into the equation, whereas material datasheets under disputation are not being considered.

Datasheets, rejected by the BU's Tier^{n-1} customer(s) over the last 6 months, are [qty] 1

Datasheets, the BU submitted to Tier^{n-1} customer(s) over the last 6 months, are [qty] 1

Derived from above the current BU effectiveness error rate to the auditing Tier^{n-1} customer

a.) is ≤ 1 percent (40 Points): Result: 0

b.) is> 1 percent ≤ 2 percent (20 Points): Result: 0

c.) is > 2 percent (0 Points): Result: 0

9.0 Final Business Unit Evaluation – Summary

The final efficiency calculation is to be performed during the BU's audit. Its assessment result is to be presented immediately to the BU. The assessment evaluation takes only applicable items into the calculation. Non-applicable questionnaire items will not be considered.

Example: If the BU does not use GASDL-listed substances for its products then it is not applicable to control GASDL expiration dates. In such a case the audit questionnaire item "GASDL Substance of Concern "Expiration Date"" is not considered and will not be counted into the BU Efficiency Calculation

9.1 Basic Evaluation

The basic evaluation covers the audit items of section 7.1 to 7.5. The basic evaluation is weighted by **60 percent** to the final audit result.

9.1.1 Evaluation of BU's Performance – Section 7.1

The performances on "Personnel and Organizational Requirements to the BU" are evaluated.

The maximum achievable number of points is [Total Possible: 100].
The assessed BU achieved [Total Achieved: 0].

9.1.2 Evaluation of BU's Performance – Section 7.2

The performances on "General Process related Requirements to the BU" are evaluated.

The maximum achievable number of points is [Total Possible: 60].
The assessed BU achieved [Total Achieved: 0].

9.1.3 Evaluation of BU's Performance – Section 7.3

The performances on "BU Validation of Material Data" are evaluated.

The maximum achievable number of points is [Total Possible: 130].
The assessed BU achieved [Total Achieved: 0].

9.1.4 Evaluation of BU's Performance – Section 7.4

The performances on "Consolidation of the BU's supplier IMDS Data" are evaluated.

The maximum achievable number of points is [Total Possible: 50].
The assessed BU achieved [Total Achieved: 0].

9.1.5 Evaluation of BU's Performance – Section 7.5

The performances on "The BU performing supplier audits" are evaluated.

The maximum achievable number of points is [Total Possible: 150].
The assessed BU achieved [Total Achieved: 0].

9.2 Additional Environmental Evaluation – Section 7.6

The additional environmental evaluation covers the audit items underneath section 7.6.
The additional environmental evaluation is weighted by **10 percent** to the final audit result.

The performances on "Additional Environmental Applications" are evaluated.

The maximum achievable number of points is [Total Possible: 20].
The assessed BU achieved [Total Achieved: 0].

9.3 Effectiveness Evaluation – Section 8.0

The effectiveness evaluation covers the items of section 8 and it is weighted by **40 percent** to the final assessment result. The performances on "BU IMDS Effectiveness Performance Evaluation" are evaluated.

The maximum achievable number of points is [Total Possible: 40].
The assessed BU achieved [Total Achieved: 0]

10.0 Assessment Result

The efficiency assessment result has maximum 110% points according to the formula:

[∑ (section 7.1 to section 7.5)] *60 + [∑ (section 8.0)] * 40 + [∑ (section 7.6)] * 10

if BU reaches AB Rating

The Business Unit [BU name] _____

with the IMDS ID address [IMDS-ID-No.] _____

was assessed on IMDS Efficiency and Effectiveness on [date] _____

by Customer _____ / or by accredited Company _____

with the following final audit result [Total **0.00** % achieved].

Performance Degree

The performance degrees are categorized as in following

Rating	Grade	Grade Name
> 90	fully satisfied	A
80 to <90	mostly satisfied	AB
60 to <80	limited satisfied	B
below 60	not satisfied	C

Grade Vision

C

Assessment Confirmation

Both parties, the assessed and assessing party, confirm hereby the assessment results:

_____ assessed Business Unit (signature and stamp)

_____ Customer or accredited Company (signature and stamp)

11.0 Co-operation and Assistance

Dr. Helmut Traiser, Executive of Traiser Consulting
Ralf Dües, Manager IMDS Europe of Lear Corporation

12.0 Annex & Remarks

Annex *1: This document will be revised when node quantities will be assessable in IMDS.