Survey Paper on Bill of materials

Naveen Kumar M R¹, Rakshith N²

¹Asst professor, Dept of IS&E , VVCE,Mysuru
²Asst professor, Dept of CS&E, VVCE,Mysuru

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Abstract *– Mercedes-Benz' stands for tradition, innovation and the future of the automobile and represents quality and safety on roads throughout the world. Based in Germany, Daimler AG with its business units Mercedes-Benz Cars, Daimler Trucks, Daimler Financial Services, Mercedes-Benz Vans and Daimler Buses, is a global leading producer of premium passenger cars and the largest manufacturer of heavy- and medium-duty trucks in the world. MBRDI is the largest Research and Development center of Daimler AG outside Germany and contributes in the areas of Computer Simulation (CAE), Design (CAD), Electrical/Electronics and IT-Services. Research and development engineers at MBRDI assess the performance and reliability of various sub-systems and contribute to product development in all the stages of the life-cycle.The industrial training at MBRDI includes an understanding of the basic concepts about .NET framework, using VB.NET platform for programming and various tools like Visual Studio.As a whole the industrial training gave an overall exposure to the company, its activities, the technologies used, the quality standards followed and the role of an employee in an organization so as to improve the productivity of the company*

Keywords— structure search, code numbering, modular part list

1. INTRODUCTION

DIALOG is the product documentation system for administering bills of materials for Mercedes Benz Cars and Mercedes Benz vans. A modern web client that has replaced the old mainframe interface DIAhost is available for all views, i.e. for Development, Plants and After-Sales. The next window contains Different fields like

- NFC: New function codes, short commands to call up a dialog function related to an object.
  For example: ASL for output part list.

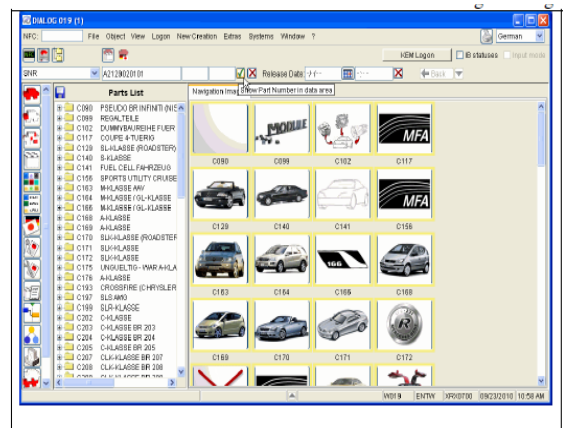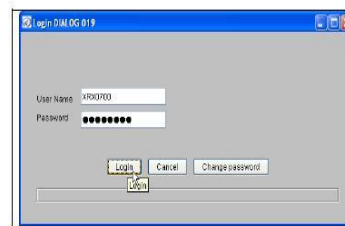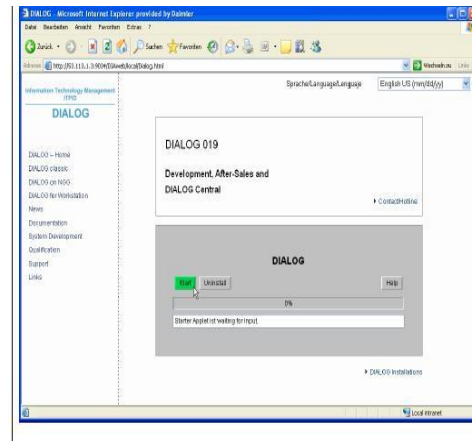NFC is of three types: Development NFC,   After sales NFC and Production NFC.

Figure 1

Structure Search

In the DIALOG view we can see the parts list structure. Starting with the product, the main module, module, sub module, the position and the position applications, exe and configuration files on to users PC or PCs. variant are listed here. On further levels you can see the assemblies as well as single parts.

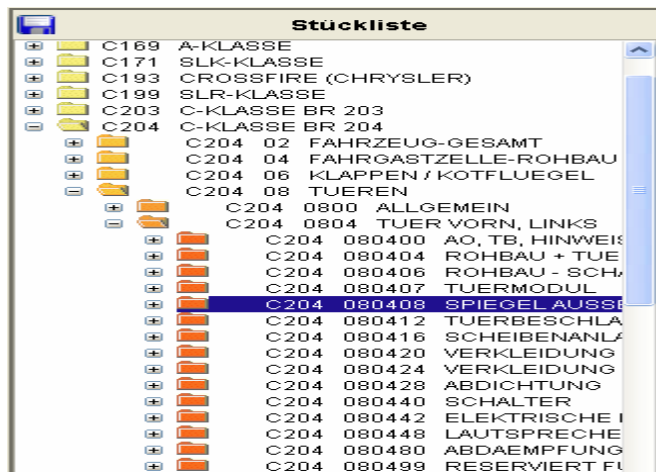The following figure shows the highest structure level of the model series

Figure 2

Figure 3

You can view the series structure by expanding the data. The parts list structure consists of:

• HM = Main Module ("Hauptmodul")

• M = Module
• SM = Submodule
• P = Position
• PV = Position Variant

The following example shows an expanded parts list structure (structures in DIALOG in the C202 series from the series /Project up to the part number)
Example:

Series
C202
Main Module C202 06
Module C202 0604
Submodule C202 060428

Position P 0100
Position Variant PV 0001
Part number A2028800186
Bill of materials/Parts list

Variant Structure Part list

The Variant structure parts list for Mercedes-Benz-products in the System EDS

• Is a structured parts list
• Documents different variants

That means, the variant parts list

• is structured to the assembly sequence

  ➤ from the single parts to its assembly
  ➤ from lower assemblies to upper assemblies (until to the highest assembly of the parts list)

• Is subdivided to functions in design groups / design subgroups (KG und KGU). The design sub groups are still subdivided in parts ranges (TU).

• Allows to document different variants of products within one parts list, if these variants are similar. Item numbers (parts), which are valid for all variants with same quantity, can be assigned to all.

The documentation of the variant structure parts list consists of:

• the real parts list
• Master data and usage listing of the parts list.

Determinations of modular parts list
• Kinds of modular parts lists
  In the "normal case" a modular parts list is a relationship part item number with part item number, i.e. the relationship of an assembly (ZB) with several single parts and/or sub assemblies (ZBs) (A -, H -, N or Q-item numbers). As "special case" there is also the SAA modular parts list, which represents a relationship of a SAA item number (parts list variant) to one or more part item numbers (item numbers which is or would be documented on structure level 0 and 1 of the variant structure parts list).

• Change status (AS) logic with modular parts list

Change status (AS) of modular parts list = change status (AS) of part. With already existing part AS, i.e. if so far no modular parts list existed, the first modular parts list gets put on with the next AS.

- Distribution code with modular parts list
  The manufacturer/assembly plant of the ZB. needs all parts/structures within the ZB, i.e. it must be present with all single parts/sub assemblies in the distribution list. So the modular parts list distribution code is the sum distribution code of the plants, which are contained together in all positions of the modular parts list. Modular parts list data are supplied only to these plants and not to plants, which are affected by single modular parts list positions only.

- Distribution record types
  The modular parts list data (EDS-K7-record type) become distributed to the plant systems as record type S01 - S19
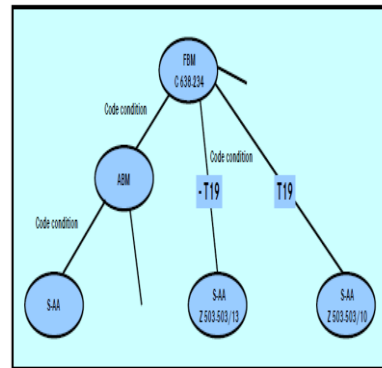
CODES

Functions of the code

The code encodes technical extents from the point of view of sales and functions which results of the wishes of the customer or to the customer offered options. The code is the connecting "language" between the customer, sales, development, production and the commercial departments; the code is an elementary control instrument in the product documentation. The code has two functions:

- The code controls the application from parts lists to models and the application from component model to vehicle model.
  The development department documents which parts list may be used by which code condition with a model (vehicle or major component) or which major component model by which code condition with a vehicle model. The rules for the application of a parts list or a major component model will still be documented in the language which is needed for the process chain, so for plants and the sales/service departments.

- Documentation of the feasibility.
  To the code will be documented to which models it may apply, and the relationship to other codes (possible code restrictions) Both named functions of the „codes" will be manually deposited in the BCS-System (Model, Code, Parts list variants) by the development section. Thereby, what is

feasible, how it is feasible, how it is to be sold or produced will be documented.

FBM	=	Vehicle model
ABM	=	Major component model
S-AA	=	Parts list variant

Code feasibility to models (vehicle or major component models)

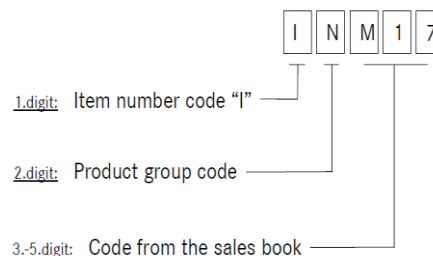All possible codes are assigned to the model (vehicle (FBM) or major component model (ABM)).

The following feasibilities get defined:

- Model-related feasibility
  May a code be used dependent or independent with a model?

- Addition of codes
  If code "A" will be used, so code "C" has to be added automatically.

A "general code condition" is independent from the model.

Example: A vehicle model can have either 4-gear or 5-gear. Never both together.

Code numbering

1.digit: Item number code "I"

2.digit: Product group code
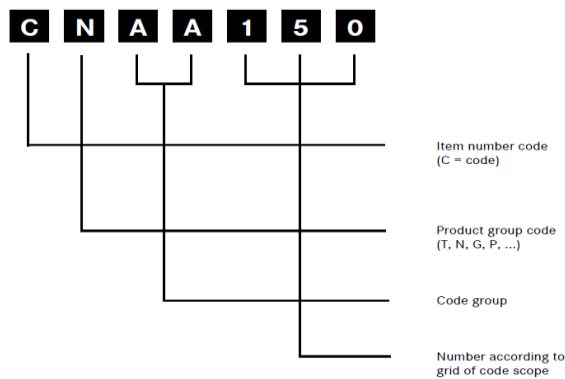
3.-5.digit: Code from the sales book

Code Scope

Definition of the code scope (CU)
The code scope is interpreted as

- ➢ CU: if it reflects the main characteristics of a code.A code can be assigned only to one CU.
- ➢ Characteristic: if separate scopes are to be marked.

Code scope numbering


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Example:     CNAA.150
Meaning:     Code scope – commercial vehicle – axles – axle ratio
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Some of the code groups are,

AAM=BODY TYPE
ABR=ENGINE- / GEARBOX-ASSEMBLY
CAA=ADDITION TO COLLECTIVE CODES
CAH=CAPACITIES
CAM=ENGINES
CBM=MODEL-BUILDING CODES

Conclusion

The industrial training is an exposure to the industry at the right time. It helps in learning the details of company such as the technology involved, product and services, tools used etc. Through the training one will get insight into the project life cycle and also it helps to closely watch the happenings in an industry. Through the industrial training program one can prepare himself for the further project work and will provide a strong foundation for his carrier.

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