FISITA WORLD AUTOMOTIVE CONGRESS

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TSI NNSTU

The Russian Federation
Nizhny Novgorod State Technical University named after R.Y. Alekseev
Transport Systems Institute

Measures Aimed at Increasing of the Russian Light Commercial Vehicles Recyclability Level

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First information sources

Directive 2000/53/EU

- list of components dismantling of which is obligatory
- information to be included in catalogues

Directive 2005/64/EU

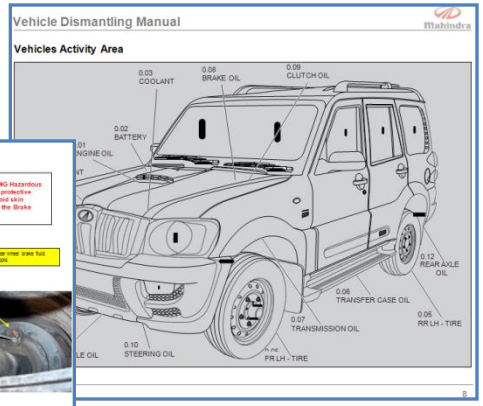
- the main purposes of creating catalogues

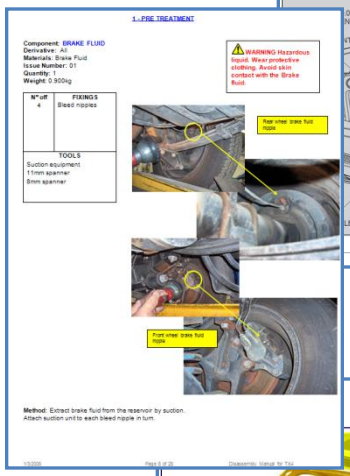
ISO 22628

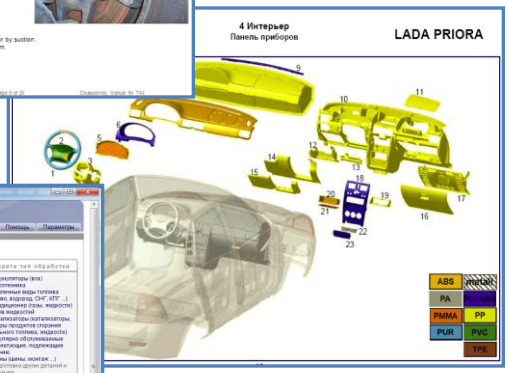
- method of calculation of recyclability and recoverability rates
- ELV dismantling process

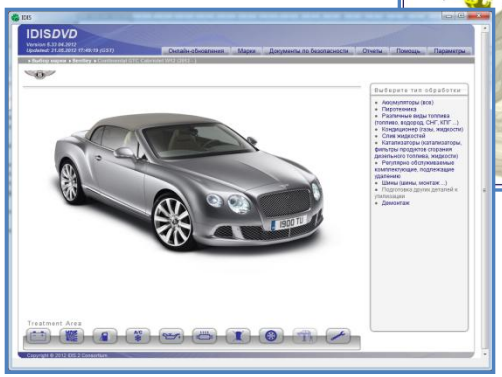
Existing analogs

- equipment
- form









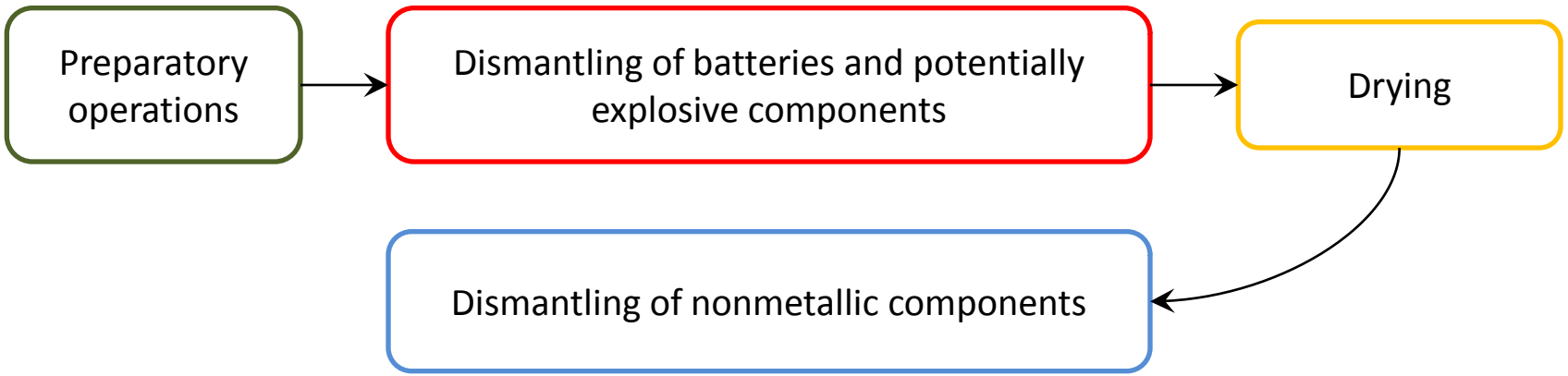
Analysis of the construction

The most important parameters from standpoint of dismantling for the needs of recycling

+ Vehicle category and model
+ Configuration
+ Fasteners used in construction of appropriate components
+ Nomenclature and placement of hazardous materials

Experimental disassembly

Dismantling process:



Experimental disassembly

Collected information:

- ✓ Safety requirements
- ✓ Time per operation
- ✓ Mass of separated materials
- ✓ Quantity and nomenclature of fasteners
- ✓ Graphic material

Conclusions on:

- **Complexity of the process**
- **Disadvantages of the construction**
- **Components to be inserted into the catalogues as recommended for dismantling**
- **Sequence of operations**

Form of the experimental dismantling protocol:

№	Component/liquid name	Amount	Material mark	Appropriate tool/equipment	Fasteners list	Operation algorithm	Graphic material	Time per operation, sec.	Component/ fasteners mass, grams

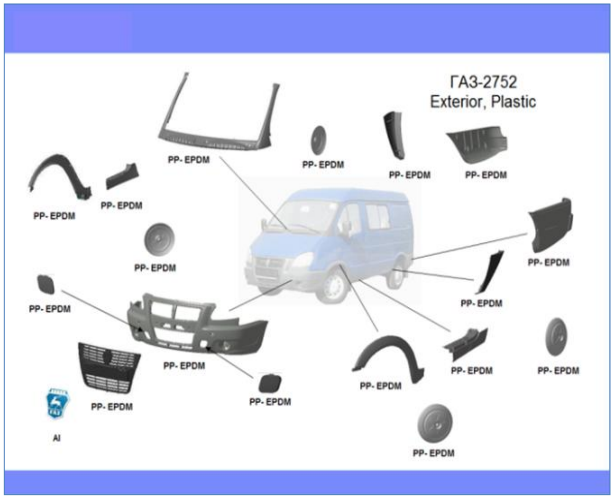
Some results of the experimental disassembly

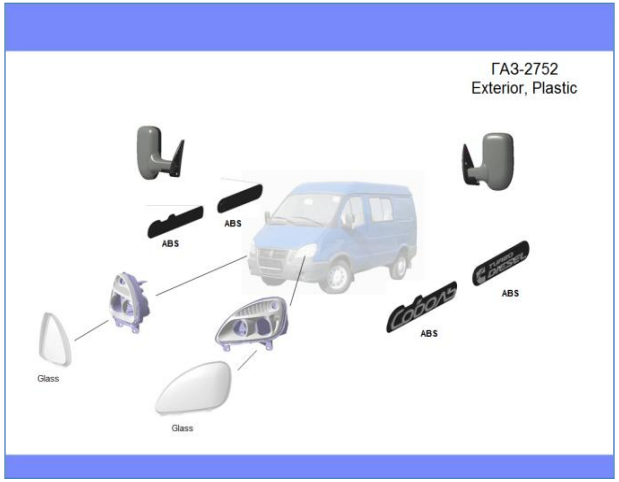
Parameter	Sobol Business 	GAZelle Next 
Complexity, man-hours	6	6,2
Mass of dismantled materials/ Excluding liquids, kg.	200,7 / 123,8	372,6 / 296,7
Number of component names that are recommended for dismantling, pcs.	55	49
Mass of the components recommended for dismantling, kg.	81,4	94,8

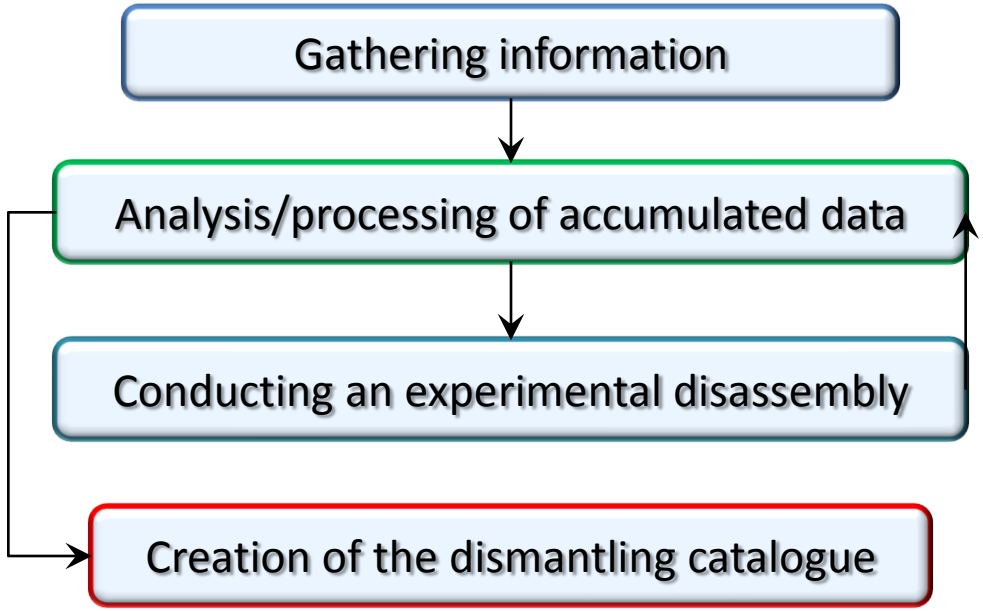
Conclusions

+ Dismantling catalogues for the GAZ Group LCVs

+ Unique methodology of creating dismantling catalogues for the needs of ELV recycling







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Thank you for attention!

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