



**ECLASS E.V. GUIDELINES  
AND BASIC PRINCIPLES  
FOR THE BASIC ORIENTATION  
AND FURTHER DEVELOPMENT  
OF THE ECLASS STANDARD**

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## Author

These Guidelines and Basic Principles were initially drafted for the Cologne-based ECLASS e.V. in 2006/2007 by a project group associated with the Structure and Technology Expert Group (including representatives from BASF AG, IFCC GmbH, RWE Systems AG, Siemens AG, Wacker-Chemie GmbH, and the ECLASS Head Office). In 2018/2019, they were revised by Strategic Working Group S2 (Quality in Content), and were further completed in 2020 in consultation with the OpArm and the Board of Directors.

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## ECLASS basic philosophy

The ECLASS Standard contains structural elements exclusively for products and services deemed ethically unobjectionable according to internationally valid conventions (e.g., the UN Global Compact of the UN Procurement Division). In this sense, corruption-related services would be deemed unethical, for example.

Each individual user is fundamentally responsible for his or her usage of ECLASS. This applies to the standard as a whole or in parts, as well as for any integration into company-specific applications.

Thus, ECLASS only provides structural elements for the purposes of selection and description. These are documented as part of an ongoing process of version maintenance. It is the responsibility of every user who uses this standard to verify the correctness and completeness of the structural elements used, for each specific use case. The association assumes no liability for incomplete or incorrect structural elements.

ECLASS is an internationally oriented standard for classifying and describing products and services. It has been maintained and further developed by the ECLASS association since 2000.

ECLASS is intended as a cross-sectoral, ISO/IEC-compliant industry standard that standardizes procurement, warehousing, production and sales in and between companies, and enables product data to be exchanged digitally across all (language) barriers. In this respect, ECLASS serves as a useful tool in industrial settings, in commercial transactions, in construction and handiwork, and in the services sectors, reducing data-related frictional losses both within single companies and between companies. ECLASS creates benefits along the entire value chain, and throughout the entire product life cycle. ECLASS helps support essential in-house functions, partners and processes by making products and services uniquely describable, globally identifiable and communicable regardless of language. This leads to a significant acceleration of all processes, while at the same time increasing their quality and reducing time and resource requirements. In addition, as an established uniform

semantic standard, ECLASS is a key building block for the Internet of Things and for information-driven production (smart manufacturing).

In large part due to the growing – in some cases competing – demands on the ECLASS Standard, and due to the increasing number of participants with which the ECLASS association collaborates, it is necessary to define and explain the basic principles followed by all ECLASS association organs in further developing the ECLASS Standard. The guidelines and basic principles described in detail below thus serve as a means of coordinating with other institutions, and by providing binding guidelines, help add transparency to the ECLASS e.V. operational framework.

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## 1 ECLASS Guidelines

The following guidelines explain and define the standard's basic orientation and focus.

### Guideline 1:

#### **“The structure of ECLASS is cross-sectorally oriented”**

ECLASS has the goal of structurally describing the entirety of all products and services available on the market. The relevant information is provided in the form of a four-level hierarchical classification tree with associated descriptive structures including blocks, aspects, properties, keywords, values, units, etc.

### Guideline 2:

#### **“ECLASS is market-oriented due to its universal applicability”**

Any product or service that can be offered and consumed or used on the market should be able to be uniquely classified and queried using the ECLASS Standard.

### Guideline 3:

#### **“As a classification structure, ECLASS is identity-oriented”**

The identity of a product or service is described on the lowest level of the hierarchy (Level 4 = commodity class). The higher levels of the hierarchy (levels 1 through 3) serve as a logical and linguistic structuring aid (e.g., for searching, finding or managing products and services). These higher levels are not associated with defined product properties. However, they are associated with definitions and keywords.

All products belonging to a given ECLASS classification class are described with the properties valid for that classification class. After a successful evaluation of its properties, every product can be uniquely identified, as it will differ from similar products at least in terms of its set of property values. Nevertheless, the ECLASS Standard makes no claim to provide all properties essential to a

commodity glass. The nature and scope of the properties provided will be determined by the expert group responsible for this content area.

#### **Guideline 4:**

##### **“ECLASS incorporates languages and special country-specific features in a neutral way”**

ECLASS is internationally oriented. In accordance with this understanding, ECLASS is not bound by singular or nationally focused standards (norms, technologies, languages). However, to the extent possible, ECLASS will take application-oriented interests into account, provided that they do not prevent standardization. To this end, the ECLASS Standard will on the one hand integrate languages into its classification system where possible, and on the other, will take account of existing or previously developed technological, economic or ontological product standards in its structure as appropriate, in a manner conforming to these guidelines.

ECLASS’s only interest in this regard is the technically correct and linguistically flawless conversion or harmonization of comparable or identical product-structure information.

#### **Guideline 5:**

##### **“ECLASS develops its structure in a sector- and application-neutral way, so as to avoid duplication of classifications”**

Numerous products by their nature can be used in a broad range of contexts. This means that they possess a unique identity, but can be used for a wide variety of (sector-specific) purposes (example: segment “Machine element, fixing, mounting” → Screw).

In order to limit class diversity to the minimum amount necessary, and to facilitate management of the assigned properties, ECLASS will always combine all similar products into a common structure, regardless of opinions held within a given sector.



## Guideline 6:

**“ECLASS creates its structures and descriptions in a producer- and supplier-neutral way”**

In its structure, ECLASS does not describe any specific manufacturer or supplier catalog/product-range structures, and does not use brand names.

## Guideline 7:

**“ECLASS distinguishes between class names and property designations – For the sake of clarity, ECLASS does not use class names that describe properties”**

To the greatest degree possible, ECLASS constructs its classification structure so that class names do not contain applications or characteristics which, as properties (product properties) or property values, provide a more precise identification of a subset of products within this class or commodity class.

## 2 ECLASS basic principles

The following basic principles provide a detailed explanation of the standard's concrete structure and basic characteristics, making it possible for all specialist groups to engage in orderly and coordinated joint development of the ECLASS Standard.

### Basic Principle 1: Structure of the ECLASS hierarchy

#### The ECLASS Standard takes the form of a four-level hierarchy

Table 1 – ECLASS Standard hierarchy levels

| Level | Description            | General ECLASS conception  | Description in EN |
|-------|------------------------|--|-------------------|
| 1.    | <i>Segment</i>         | Grouping of similar products and services into a single area of economic activity. | Segment           |
| 2.    | <i>Main group</i>      | A subset of the segment specified in level 1                                       | Main group        |
| 3.    | <i>Group</i>           | A class group subset of the main group specified in level 2                        | Group             |
| 4.    | <i>Commodity class</i> | A class within the group referenced at level 3                                     | Commodity class   |

Explanation of the individual ECLASS Standard hierarchy levels:

#### A segment:

- is the most general categorization, and typically represents a particular sector, a particular market or a cross-sectoral area of activity.
- encompasses a large, non-overlapping area that is clearly delimited and distinguished from other such areas.
- contains meaningful subdivisions at all deeper levels.

#### A main group:

- contains a defined subset of the segment's assigned structural content.
- includes a complete depiction of sector-related product and service aggregations.

**A group:**

- contains a defined subset of the main group's assigned structural content.
- contains meaningful and complete subdivisions between specific product and service aggregations.

**A commodity class:**

- is the smallest selectable overlap-free unit of similar products and services (a product group, in the traditional understanding).
- contains a defined subset of the group's assigned structural content.
- along with the product-related structural elements of blocks, properties, values, etc., enables the description of unique products and services.
- Offers standardized classes for "unclassified," "parts" and "accessories" (see Basic Principle 5).

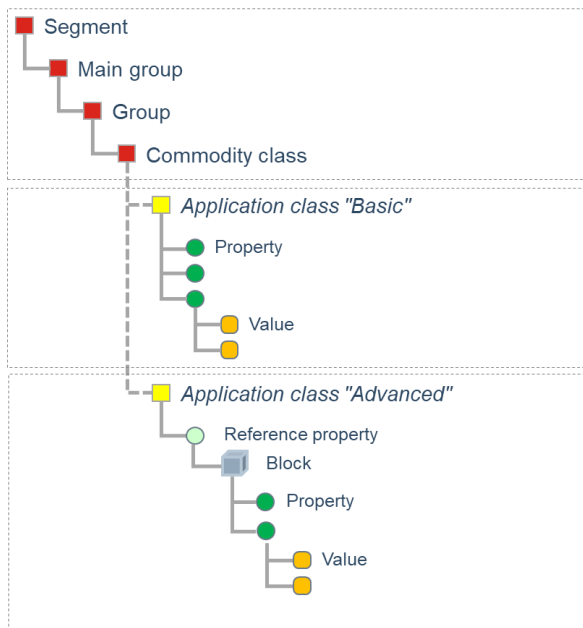
Additional information: [Class structure](#)

**Basic Principle 2: ECLASS representations**

**ECLASS is currently available in the BASIC and ADVANCED representations.**

The BASIC representation is the simplified version of the more complex underlying ONE-ECLASS data model (ADVANCED representation). Certain structural elements, such as the application class, are therefore not displayed in the BASIC representation. The relationship Classification Class – Application Class – Property – Value List – Value is simplified to Classification Class – Property – Value. In the BASIC representation, the properties are flattened and presented in a one-dimensional property list. In the ADVANCED representation, the properties are depicted in a structured manner (e.g., in aspects and blocks).

Figure 1 – Overview of BASIC and ADVANCED



### Basic Principle 3: Globally unique identifiable structural elements

**ECLASS consists of various structural elements that are related to one another, and which are clearly identifiable**

ECLASS consists of the following structural elements: [Structure and structural elements](#)

In addition, ECLASS contains the following structural characteristics (only in the ADVANCED representation):

- Cardinality
- Polymorphism

Additional information: [Additional ADVANCED characteristics](#)

For each structural element contained in the ECLASS Standard, ECLASS uses globally unique identifiers. This International Registration Data Identifier (IRDI) is based on the following international standards: ISO/IEC 11179-6, ISO 29002 and ISO 6532.

Additional information: [IRDI](#)

## Basic Principle 4: Adding to hierarchy level 1 (segment)

The definition of a hierarchy level 1 item (segment) is carried out on the basis of transparent criteria.

For all authorized ECLASS actors, the following defined criteria must be fulfilled

- a) when adding new top-level segments to the classification; and
- b) when any changes to an existing segment are made in the course of a controlled application process.

The evaluation criteria allow a documentable and transparent judgment to be rendered on the general suitability of the structure and market conditions associated with the segment to be added or changed. The evaluation is carried out on the basis of the following multi-dimensional matrix:

Table 2 – Multidimensional matrix for use in a segment evaluation

| Area                                | Criterion                             | Evaluation questions  |
|-------------------------------------|---------------------------------------|---|
| <i>Suitability of the structure</i> | <i>Sectoral reference</i>             | How clearly is the segment related to a specific sector?                |
|                                     | <i>Internationality</i>               | How internationally is the new segment established?                     |
|                                     | <i>Necessity of split</i>             | How critical is it that a split take place?                             |
|                                     | <i>Degree of overlap</i>              | How little overlap is there with existing segments?                     |
|                                     | <i>Structural depth and breadth</i>   | How complex is the segment's overall structure expected to be?          |
|                                     | <i>Degree of uniqueness</i>           | How many unique properties are conceivable?                             |
|                                     | <i>Comparison to existing systems</i> | How well is the segment already covered by other classifications?       |
|                                     | <i>Scientific reference</i>           | How clearly is segment represented in the relevant scientific field(s)? |
|                                     | <i>Acceptance of name</i>             | How widespread or widely recognized is the new segment name?            |
| <i>Market conditions</i>            | <i>Time in market</i>                 | How long has the segment been in the market?                            |
|                                     | <i>Customer weight</i>                | How many customer companies make up the segment's market?               |
|                                     | <i>Supplier weight</i>                | How many suppliers are in the segment's market?                         |
|                                     | <i>Sector representation</i>          | How strong is the representation by trade associations in the segment?  |

Every area must be precisely and logically classified and analyzed.

To ensure a uniform assessment, a binding degree of fulfillment is specified for each individual criterion.

Table 3 – Segment-review criteria and criterion-fulfillment characteristics

| Criterion                             | What determines fulfillment?   | Indications of the degree of criterion fulfillment (in %) |      |       |      |             |             |                       |       |       |            |        |
|---------------------------------------|--|---|------|-------|------|-------------|-------------|-----------------------|-------|-------|------------|--------|
|                                       |  | 10%   | 20%  | 30%   | 40%  | 50%         | 60%         | 70%                   | 80%   | 90%   | 100%       |        |
| <i>Sectoral reference</i>             | <i>~ Degree of market establishment</i>  | None  | Low  |       |      | Me-<br>dium |             | Sig-<br>nifi-<br>cant |       |       |            | Secure |
| <i>Internationality</i>               | <i>Number of international standards referencing the segment</i>                 | <5  | <8   | <15   | <20  | <25         | <30         | <35                   | <40   | >40   | >50        |        |
| <i>Necessity of split</i>             | <i>Scale of split within the current ECLASS structure</i>                        | Very large  |      | Large |      |             | Me-<br>dium |                       | Small |       | Very small |        |
| <i>Degree of overlap</i>              | <i>Percentage of overlap with old classes</i>                                    | >25%  | 25%  | 20%   | 18%  | 16%         | 13%         | 11%                   | 9%    | 7%    | 5%         |        |
| <i>Structural depth and breadth</i>   | <i>~ <math>\Sigma</math> classes = 2.5(n)</i>                                    | <5  | >5   | >10   | >20  | >40         | >100        | >250                  | >600  | >1500 | >3800      |        |
| <i>Degree of uniqueness</i>           | <i>Number of new properties</i>  | <50   | <100 | <200  | <350 | <450        | >550        | >650                  | >750  | >900  | >1,000     |        |
| <i>Comparison to existing systems</i> | <i>Number of alternative ordering structures</i>                                 | 0   | 1    | 1     | 2    | 2           | 3           | 3                     | 4     | 5     | >5         |        |
| <i>Scientific reference</i>           | <i>Number of identifiable institutions / research areas</i>                      | 0   | 1    | 1     | 2    | 2           | 3           | 3                     | 4     | 5     | >5         |        |
| <i>Acceptance of name</i>             | <i>Number of independent publications in which the designation has been used</i> | 0-1   | 2    | 3     | 4    | 5           | 6           | 7                     | 8     | 9     | >10        |        |
| <i>Time in market</i>                 | <i>Number of verifiable years on the market</i>                                  | 0-2   | 3    | 5     | 6    | 8           | 9           | 10                    | 11    | 12    | 12         |        |
| <i>Customer weight</i>                | <i>Number of national / international users of the product</i>                   | <50   | <100 | <200  | <350 | <450        | >550        | >650                  | >750  | >900  | >1,000     |        |
| <i>Supplier weight</i>                | <i>Number of national / international suppliers of the product</i>               | <20   | <35  | <45   | <55  | <70         | <85         | <100                  | <120  | <150  | >150       |        |
| <i>Sector representation</i>          | <i>Number of verifiable interest groups / contacts for ECLASS in Europe</i>      | 0   | <2   | <3    | <4   | <5          | <6          | <7                    | <8    | <10   | >10        |        |

Table 4 – Explanations of individual criterion-fulfillment characteristics

| Criterion                             | Criterion-fulfillment characteristic   | Explanation   |
|---------------------------------------|--|---|
| <i>Sectoral reference</i>             | <i>~ Degree of market establishment</i>  | The classes belonging to the proposed segment can be associated with an economic sector, and are detailed under the aspects of market conditions.   |
| <i>Internationality</i>               | <i>Number of international standards relating to the segment</i>   |   |
| <i>Necessity of split</i>             | <i>Scale of split within the current ECLASS structure</i>  | The smaller the scale of the split required within the existing older classes, the smaller will be the effort required to implement the segment within ECLASS. Note: Splitting necessitates substantial effort on the part of firms using or implementing the standard. |
| <i>Degree of overlap</i>              | <i>Percentage of overlap with old classes</i>  | The percentage of overlap indicates the degree to which the proposed classes are already incorporated within ECLASS. Due to the monohierarchical principle, overlaps are permitted only in exceptional cases.   |
| <i>Structural depth and breadth</i>   | <i>Mathematically <math>\sim \Sigma</math> classes = 2.5(n)</i>  | The hierarchy levels (aside from the fourth level, commodity classes) should contain at least two defined underlying hierarchy elements.  |
| <i>Degree of uniqueness</i>           | <i>Number of new properties</i>  | If the proposed new classes are associated with no or only a few new product-related properties, it can be assumed that there is a high degree of comparability with existing classes.  |
| <i>Comparison to existing systems</i> | <i>Number of alternative ordering structures</i>   | If other ordering structures exist, ECLASS can refer to them in its own development work, reducing the structural effort for ECLASS.  |
| <i>Scientific reference</i>           | <i>Number of identifiable institutions / research areas</i>  | This serves to measure the market relevance and acceptance of the proposed classes.   |
| <i>Acceptance of name</i>             | <i>Number of independent print media publications in which the segment designation has been used (e.g., as returned by a Google search).</i> | In this regard, “scientific reference” and “acceptance of name” have a much lower weight than the other criteria.   |
| <i>Time in market</i>                 | <i>Number of verifiable years on the market</i>  |   |
| <i>Customer weight</i>                | <i>Number of national / international users of</i>   |   |

|                              |   |  |
|------------------------------|---|--|
|                              | <i>the product</i>  |  |
| <i>Supplier weight</i>       | <i>Number of national / international suppliers of the product</i>          |  |
| <i>Sector representation</i> | <i>Number of verifiable interest groups / contacts for ECLASS in Europe</i> |  |

The matrix above serves as a decision-making aid when establishing or changing a segment.

The results can be determined and visually displayed using the Excel evaluation form.

A basic evaluation of this kind can be carried out on an experimental basis by using a fictional application for a new “space-flight technology” segment. In the following, in addition to assessing the degree to which each criterion is fulfilled, we specify the general ECLASS target profile for the fulfillment of each criterion (determining the minimum degree to which the criteria should be fulfilled for there to be a justified claim to create a new segment). This ECLASS target profile applies uniformly to all proposals.

Table 5 – Evaluation result for the example space-flight technology segment review

| <b>Criterion</b>             | <b>Weighting points</b> | <b>Target for fulfillment</b> | <b>Required weighting points</b> | <b>Assessed degree of fulfillment for “space-flight technology”</b> | <b>Evaluation score for “space-flight technology”</b> |
|------------------------------|-------------------------|-------------------------------|----------------------------------|---|---|
| Sectoral reference           | 20                      | 100%                          | 20                               | 100%  | 20.0  |
| Internationality             | 17                      | 85%                           | 14.5                             | 100%  | 17.0  |
| Necessity of split           | 16                      | 80%                           | 12.8                             | 90%   | 14.4  |
| Degree of overlap            | 16                      | 80%                           | 12.8                             | 10%   | 1.6   |
| Structural depth and breadth | 16                      | 80%                           | 12.8                             | 60%   | 9.6   |
| Degree of uniqueness         | 15                      | 75%                           | 11.3                             | 80%   | 12.0  |
| Comparison                   | 6                       | 30%                           | 1.8                              | 100%  | 6.0   |



|                       |            |      |              |      |              |
|-----------------------|------------|------|--------------|------|--------------|
| to existing systems   |            |      |              |      |              |
| Scientific reference  | 3          | 15%  | 0.5          | 100% | 3.0          |
| Acceptance of name    | 2          | 10%  | 0.2          | 90%  | 1.8          |
| Time in market        | 20         | 100% | 20           | 100% | 20.0         |
| Customer weight       | 18         | 90%  | 16.2         | 10%  | 1.8          |
| Supplier weight       | 18         | 90%  | 16.2         | 30%  | 4.8          |
| Sector representation | 13         | 65%  | 8.45         | 30%  | 3.9          |
| <b>TOTAL</b>          | <b>180</b> |      | <b>147.6</b> |      | <b>116.5</b> |

Figure 2 – Point-weighting results for the “space-flight technology” segment evaluation:

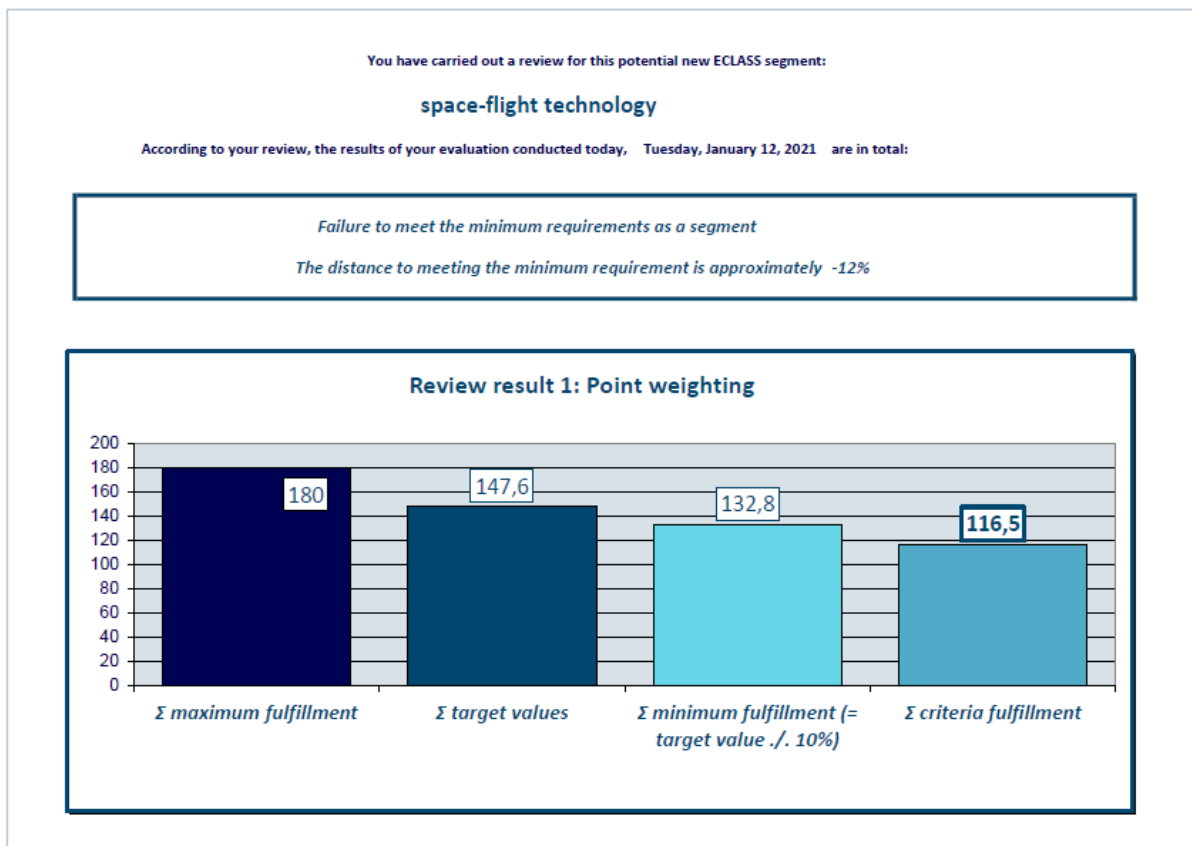
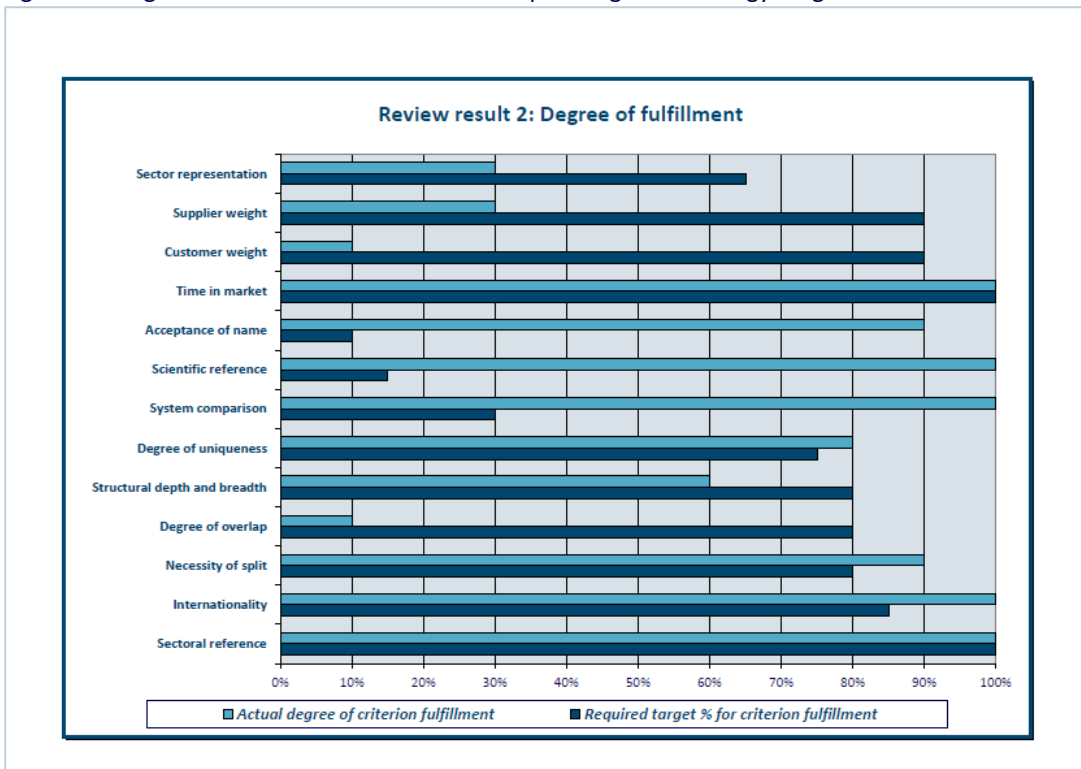


Figure 3 – Degree-of-fulfillment results for the “space-flight technology” segment evaluation:



Explanation of figures 2 and 3:

In the result as depicted in Figure 2 (point weighting), space-flight technology as a proposed new ECLASS segment receives a total of only 116 points, well under the minimum required level of 133 weighting points. It thus fails to meet the minimum requirements by about 12%. On this basis, according to the model, the proposal to add a space-flight technology segment should clearly be rejected.

In examining the degree to which individual criteria have been fulfilled (see aggregated evaluation results as presented in Figure 3 ), it is relatively easy to find a rational justification for a decision on the space-flight technology proposal:

- According to the structural evaluation, the target values are met only in some areas, and are in some cases exceeded.
- In some important and some less-important structural dimensions, the target values are missed by a considerable amount.
- Essential market conditions are also not fulfilled.

## Basic Principle 5: Products, parts and accessories that are not classified

### ECLASS uses specific class codes to place unclassifiable products, parts and accessories within the ordering structure

The eight-digit class code (called CodedName in ECLASS) consists of two digits for each of the four hierarchy levels. Each new branch receives a number that directly follows the numbers already existing in the system, between 1 and 79. In addition to these regular classification codes (01 - 79), ECLASS also uses certain specifically defined class codes that have a consistent meaning. Referred to as “descriptive” codes, all begin with 9x. The descriptive codes currently in use are 90 (unclassified), 91 (parts) and 92 (accessories).

For further information, see: [9x-classes](#)

The additional classification codes from 80 – 89 have been reserved within the ECLASS system (since release 10.0) exclusively for customer-specific, individualized, non-standardizable extensions, and are therefore no longer assigned in the standard. These classification codes from 80 to 89, which are no longer used in the ECLASS Standard, can thus differ from company to company to the extent that a firm wants to use these reserved codes for internal, proprietary expansions that cannot be mapped into the standard. For this purpose, it is also possible to use customer-specific identifiers within the International Registration Data Identifier (IRDI) system. However, these are not part of the standard distributed by ECLASS e.V.

Additional information: [IRDI](#)

## Basic Principle 6: Transparent release process for the further development of ECLASS

### ECLASS follows a transparent release process based on ISO and IEC standards, enabling an easily comprehensible versioning system as well as partially automated migration to new releases through the use of its own update files

Typically, a new ECLASS release is published once per year. A release represents an update to the existing standard in the form of a new version.

Between Major Releases that may include structural changes, so-called Minor Releases are published, which contain new content but no structural changes. As a rule, Major Releases and Minor Releases come in alternating years.

For each new version, ECLASS e.V. releases machine-readable update files. This makes ECLASS the only standard worldwide that enables partially automated migrations (due to the machine-readable files).

Additional information: [ECLASS updates](#)

Anyone can submit change requests for the further development of ECLASS, no matter whether they are a member, a licensee or simply an interested expert. Change requests may relate to the introduction or the revision of structural elements such as (but not limited to) classes, blocks, properties and values. They are handled transparently in a database-linked portal ([The Content Development Portal](#)), a process that entails a check of their formal completeness and correctness, review in the expert groups, adjustment as necessary, and a final review by a quality-management team. Participation in the expert groups is free of charge, and is open to all interested subject-area experts. Everyone is thus allowed to help improve the standard, if they have an interest in doing so.

The further development of the ECLASS Standard follows rules and processes that have been consensually defined by ECLASS e.V., and which are based to the greatest degree possible on international standards. This enables any changes to be carried out in an entirely transparent way.

All change requests, or proposals to amend the existing ECLASS content, must be submitted:

- through the [ECLASS CDP](#) (Content Development Portal);
- through the [ECLASS web service](#); or
- directly in the expert group responsible for the area.

Additional information: [The release process](#)

### 3 Glossary

| No. | Term DE                 | Term EN                 | Explanation  | Link  |
|-----|-------------------------|-------------------------|--|---|
| 1   | ADVANCED Repräsentation | ADVANCED Representation | In the ADVANCED variant of the ECLASS Standard, the properties are presented in a multidimensional structured format. This provides the user with greater possibilities for use, but also increases the complexity.  | <a href="http://wiki.eclass.eu/wiki/Advanced#ADVANCED_Version">http://wiki.eclass.eu/wiki/Advanced#ADVANCED_Version</a> |
| 2   | Änderungsantrag         | Change request (CR)     | A change request is a proposal by an ECLASS user (= requester) to change a part of the content of the ECLASS Standard. This may entail a correction or deletion of existing content, or an expansion of the standard. Generally speaking, the ECLASS Standard is never complete, because changes will always be necessary as long as markets continue to develop. All change requests must comply with the guidelines and rules for maintaining the ECLASS Standard as contained in the ECLASS Wiki. | <a href="http://wiki.eclass.eu/wiki/Change_Request">http://wiki.eclass.eu/wiki/Change_Request</a>                       |
| 3   | Applikationsklasse      | Application class (AC)  | Class that includes all characteristics described by properties. Two application classes (basic, advanced) are assigned to each product group. The name of the ACs is identical to that of the CC. The ACs are automatically created and maintained on the system side.  | <a href="http://wiki.eclass.eu/wiki/Application_Class">http://wiki.eclass.eu/wiki/Application_Class</a>                 |
| 4   | Aspekt                  | Aspect (AS)             | Sub-class of an application class that includes all characteristics that describe a particular aspect of a product, but not the product itself (e.g., packaging information).  | <a href="http://wiki.eclass.eu/wiki/Aspect">http://wiki.eclass.eu/wiki/Aspect</a>                                       |
| 5   | BASIC Repräsentation    | BASIC Representation    | The BASIC variant of the ECLASS Standard is the simplified version of the more complex underlying ONE-ECLASS data model (ADVANCED). Certain structural elements, such as the application class, are therefore not displayed. The relationship Classification Class – Application Class –   | <a href="http://wiki.eclass.eu/wiki/Advanced#BASIC_Version">http://wiki.eclass.eu/wiki/Advanced#BASIC_Version</a>       |

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|----|--------------|-------------------|---|---|
|    |              |                   | Property – Value List – Value is simplified to Classification Class – Property – Value. In the BASIC representation, the properties are flattened, presented in a one-dimensional, unstructured property list.  |   |
| 6  | Block        | Block (BL)        | Sub-class of an application class that includes all characteristics that describe a particular aspect of a product (e.g., its geometry).  | <a href="http://wiki.eclass.eu/wiki/Block">http://wiki.eclass.eu/wiki/Block</a>   |
| 7  | Constraint   | Constraint        | A constraint can limit the values contained in a value list.  | <a href="http://wiki.eclass.eu/wiki/Constraint_(Help_Page)">http://wiki.eclass.eu/wiki/Constraint_(Help_Page)</a>                     |
| 8  | CDP          | CDP               | An online portal (Content Development Portal) through which any interested party can submit change requests.  | <a href="https://www.ECLASScdp.com/portal/info.seam">https://www.ECLASScdp.com/portal/info.seam</a>                                   |
| 9  | Einheit      | Unit (UN)         | Standardized unit.<br>A unit in ECLASS is a distinct, standardized structural element with its own ID – based on DIN and ECE units. ECLASS is based on standardized units, as per the DIN and ECE systems.  | <a href="http://wiki.eclass.eu/wiki/Unit">http://wiki.eclass.eu/wiki/Unit</a>   |
| 10 | Fachgruppe   | Expert group (EG) | ECLASS distinguishes between two kinds of expert groups.<br><br>Content expert groups are responsible for the maintenance and further development of the content of a specific segment within the ECLASS Standard – that is, the classification and description of product groups and services.<br><br>Cross-section expert groups are responsible for implementing requirements that affect multiple segments. | <a href="http://wiki.eclass.eu/wiki/The_Release_Process#Expert_Group">http://wiki.eclass.eu/wiki/The_Release_Process#Expert_Group</a> |
| 11 | IRDI         | IRDI              | The International Registration Data Identifier is the globally unique identifier for all structural elements in the ECLASS Standard, as per ISO 29002-5.  | <a href="http://wiki.eclass.eu/wiki/IRDI">http://wiki.eclass.eu/wiki/IRDI</a>   |
| 12 | Kardinalität | Cardinality       | Cardinality allows a block of properties to be re-instantiated within a list of properties. Cardinality refers to the   | <a href="https://wiki.eclass.eu/wiki/Block#Cardinality">https://wiki.eclass.eu/wiki/Block#Cardinality</a>                             |

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|    |                             |                           | property that allows dynamic multiplication of a block within the scope of the property values to be managed. Cardinality is thus a means of determining the number of identical blocks within the content of the data description.  |   |
| 13 | Klassifikationsklasse       | Classification class (CC) | Class within the four-level classification structure that is identified through use of a preferred name and an eight-digit coded name.   | <a href="http://wiki.eclass.eu/wiki/Classification_Class">http://wiki.eclass.eu/wiki/Classification_Class</a> |
| 14 | Kriterien für Datenqualität | Criteria for data quality | <p>A total of 11 criteria have been defined to collectively measure data quality:</p> <p>Correctness: The data must be consistent with reality.</p> <p>Consistency: A dataset must have no inconsistencies in itself or relative to other datasets.</p> <p>Reliability: The origin of the data must be discernable.</p> <p>Completeness: A dataset must contain all necessary properties.</p> <p>Precision: The data must be available in the required degree of exactness (example: decimal places).</p> <p>Up-to-dateness: All datasets must reflect the current state of reality as described.</p> <p>Freedom from redundancy: There must be no duplication within the datasets.</p> <p>Relevance: The informational content of the data sets must fulfill the relevant informational need.</p> <p>Uniformity: The information within a dataset must be uniformly structured.</p> <p>Clarity: Every dataset must be unambiguously interpretable.</p> <p>Comprehensibility: The definitions and structure of the datasets must be consistent with the expectations of the technical groups overseeing these areas.</p> |   |

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| 15 | Major Release   | Major release           | An ECLASS major release is a type of release that may include all possible changes to existing structural elements (including structural changes), the addition of new structural elements, and changes in the relationships between existing structural elements.  | <a href="http://wiki.eclass.eu/wiki/MajorRelease">http://wiki.eclass.eu/wiki/MajorRelease</a>                       |
| 16 | Minor Release   | Minor release           | An ECLASS minor release is a type of release that may include changes to certain attributes of existing structural elements (e.g., textual changes or corrections that do not change the essence of the structural element), the addition of new structural elements, and new relationships between new and/or existing structural elements.  | <a href="http://wiki.eclass.eu/wiki/MinorRelease">http://wiki.eclass.eu/wiki/MinorRelease</a>                       |
| 17 | Merkmal         | Property (PR)           | A characteristic associated with a commodity class through an application class, which allows products and services to be described.  | <a href="http://wiki.eclass.eu/wiki/Property">http://wiki.eclass.eu/wiki/Property</a>                               |
| 18 | Polymorphismus  | Polymorphism            | Polymorphism means that the block content is not initially assigned within a class. Rather, a dynamic determination is made regarding what block contents are in fact needed only after values have been allocated to the attribute (that is, it is only at this stage that a determination is made, from a data-technical perspective, as to which block out of a multiplicity of possible blocks should be selected). A polymorphic property therefore issues a query as to the type or kind of the associated product or service, for example. | <a href="https://wiki.eclass.eu/wiki/Block#Polymorphism">https://wiki.eclass.eu/wiki/Block#Polymorphism</a>         |
| 19 | Referenzmerkmal | Reference property (RP) | Property that refers to a block   | <a href="http://wiki.eclass.eu/wiki/Block#ReferenceProperty">http://wiki.eclass.eu/wiki/Block#ReferenceProperty</a> |
| 20 | Releaseprozess  | Release process         | A new ECLASS release is typically published once per year. A release represents an update to the existing standard in the form of a new version. The ECLASS release process is based on ISO and IEC standards, with a   | <a href="http://wiki.eclass.eu/wiki/TheReleaseProcess">http://wiki.eclass.eu/wiki/TheReleaseProcess</a>             |



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|    |                 |                         | distinction made between three different kinds of releases: minor releases, major releases and service packs. Patches have also been provided in exceptional cases.                      |   |
| 21 | Schlagwort      | Keyword (KW)            | An alternative, related name for a class (for ease in searching).<br>Note: Not the same thing as a synonym.  | <a href="http://wiki.eclass.eu/wiki/Keyword">http://wiki.eclass.eu/wiki/Keyword</a>   |
| 22 | Service Pack    | Service pack            | An ECLASS service pack is a type of release that corrects a previously released language version by allowing only textual changes in a specific language variant of the ECLASS Standard. | <a href="http://wiki.eclass.eu/wiki/ServicePack">http://wiki.eclass.eu/wiki/ServicePack</a>   |
| 23 | Strukturelement | Structural element (SE) | A distinct, clearly identifiable data element that constitutes a part of the conceptual informational model.   | <a href="http://wiki.eclass.eu/wiki/Category:Structure_and_structural_elements">http://wiki.eclass.eu/wiki/Category:Structure_and_structural_elements</a> |
| 24 | Synonym         | Synonym (SY)            | An alternative name for a property, referring to the same thing.<br>NOTE: Not the same thing as a keyword.   | <a href="http://wiki.eclass.eu/wiki/Synonym">http://wiki.eclass.eu/wiki/Synonym</a>   |
| 25 | Wert            | Value (VA)              | A specification of a property.   | <a href="http://wiki.eclass.eu/wiki/Value">http://wiki.eclass.eu/wiki/Value</a>   |
| 26 | Werteliste      | Value list (VL)         | A restrictive list of valid specifications for a property.   | <a href="http://wiki.eclass.eu/wiki/Value_List">http://wiki.eclass.eu/wiki/Value_List</a>   |
| 27 | Zurückziehen    | Depreciation            | Depreciation is used to delete existing content. There are two types of depreciation: Depreciation of structural elements, and depreciation of associations between structural elements. | <a href="http://wiki.eclass.eu/wiki/Deprecation">http://wiki.eclass.eu/wiki/Deprecation</a>   |

## 4 Application scope, responsibility and publication

### Scope of application of these Guidelines and Basic Principles

1. The Guidelines and Basic Principles laid down here are binding in their current version for all those engaged in further developing or changing the ECLASS Standard.
2. The Guidelines and Basic Principles laid down here are binding in their current version for the operational actions and decisions of the ECLASS Center of Rule Compliance (CRC) with respect to any further development or change to the ECLASS Standard.
3. When transferring the ECLASS Standard into electronic data-processing programs influenced by ECLASS e.V., as well as in any planning processes preliminary to such a step (e.g., when developing data-modelling concepts), the consistency of the aforementioned Guidelines and Basic Principles must be ensured. Possible conflicts must be resolved in advance with the ECLASS Center for Research and Development (CRD).
4. The Guidelines and Basic Principles laid down here are binding in their current version for all those tasked by the ECLASS Board of Directors with cleaning and updating ECLASS content that has accumulated over time. This means, that in their cleaned and updated state, previously released ECLASS sub-areas should also conform with these rules.

### Responsibility for these Guidelines and Basic Principles

The ECLASS Center of Rule Compliance (CRC) is responsible for the application of these Guidelines and Basic Principles, and as necessary, for any changes and updates. The CRC will be supported in this work by the ECLASS Head Office.

### Publication

After approval by the ECLASS e.V., the ECLASS Head Office will publish the current version of the Guidelines and Basic Principles in the ECLASS Wiki.

## 5 Other applicable rules and regulations

The following attachment is to be deemed an integral part of these Guidelines and Basic Principles:

- Tool for reviewing suitability of a proposed ECLASS segment (as Microsoft Excel spreadsheet: [ECLASS Reviewing Suitability of a Proposed Segment.xls](#))

The content of this attachment is to be applied in a binding manner when implementing Basic Principle 4: Adding to hierarchy level 1 (segment)

In addition to the Guidelines and Basic Principles set out here, any further development of the ECLASS Standard must follow the measures contained in the currently valid versions of the following rules and regulations:

- ISO 13584-42

German title: Industrielle Automatisierungssysteme und Integration - Teilebibliothek - Teil 42: Beschreibungsmethodik: Methodik für die Strukturierung von Teilefamilien

English title: Industrial automation systems and integration - Parts library - Part 42: Description methodology: Methodology for structuring parts families

- IEC 61360-1

German title: Genormte Datenelementtypen mit Klassifikationsschema für elektrische Betriebsmittel - Teil 1: Definitionen - Regeln und Methoden

English title: Standard data element types with associated classification scheme - Part 1: Definitions - Principles and methods

- DIN 4002-nnn

German title: Merkmale und Geltungsbereiche zum Produktdatenaustausch

English title: Properties and their scopes for product data exchange

all parts (in the most recent, valid or available version)

- DIN 32705

German title: Klassifikationssysteme; Erstellung und Weiterentwicklung von Klassifikationssystemen

English title: Classification systems; establishment and development of classification systems

- ISO 704

German title: Terminologearbeit - Grundsätze und Methoden

English title: Terminology work - Principles and methods

## 6 Entry into force of these Guidelines and Basic Principles

These Guidelines and Basic Principles have been adopted by the ECLASS e.V. Board of Directors.

These Guidelines and Basic Principles apply to all members and persons authorized to act on behalf of ECLASS e.V., in accordance with the relevant legal conditions.

The ECLASS Board of Directors asks for binding compliance with these Guidelines and Basic Principles, as well as for consistent implementation of the measures deriving from them.

For the Board of Directors of ECLASS e.V., Cologne:



Markus Reigl  
(Chairman of the ECLASS Board)



Dr. Christoph Thim  
(Deputy Chairman of the ECLASS Board)