

# UNSPSC: The international commodity classification for technical procurement

UNSPSC stands for United Nations Standard Products and Services Code, a globally recognised classification for products and services. For technical buyers, it is one of the most important tools for systematically structuring items, suppliers and tenders. This article explains the structure, application and practical benefits of UNSPSC in the industrial procurement process.

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## Key facts at a glance

- 01 UNSPSC is a four-tier classification system for goods and services managed by the United Nations.
- 02 The code follows the structure Segment – Family – Class – Commodity and typically consists of eight digits.
- 03 UNSPSC supports duplicate detection, spend analyses and the comparison of supplier offers across system boundaries.
- 04 In practice, UNSPSC is frequently used by large corporations and public-sector buyers, whereas mid-sized companies often maintain their own material group hierarchies.
- 05 Implementation usually requires careful migration of existing item masters and clear governance for code maintenance.
- 06 Alternative classifications such as eCl@ss or ETIM cover technical features in greater depth, which is why the choice depends on the intended use.

## Definition: UNSPSC

UNSPSC (United Nations Standard Products and Services Code) is an open, hierarchical classification system covering almost all product and service categories. It was developed in the late 1990s and is today maintained on behalf of the United Nations. The code makes it possible to name items and

services uniformly, independent of supplier-specific descriptions or manufacturer part numbers.

### Structure of the four-tier code

Every UNSPSC number consists of four pairs of digits: Segment (e.g. 30 for structural components), Family, Class and Commodity. Each level is additionally supplemented by a check digit, so that the complete code in practice typically comprises eight to ten digits. An example: the code chain 30-15-17-04 denotes metal screws – greatly simplified here. The segment level is suitable for group-level reporting, the commodity level for item catalogue maintenance.

- Segment: broad economic area (e.g. 43 IT, 27 tools)
- Family: related product groups
- Class: narrowly defined category
- Commodity: specific item type with check digit

### Distinction from other classifications

UNSPSC is broadly defined and industry-neutral. Alternatives such as eCl@ss or ETIM offer considerably deeper technical feature structures, but are more strongly focused on specific markets. For positioning in material classes and worldwide uniform spend capture, UNSPSC is frequently the more pragmatic choice. In practice, many companies combine both approaches: UNSPSC for reporting, manufacturer-specific features for the technical description.

## | Application in the procurement process

In the operational procurement process, UNSPSC serves as a common language between requisitioners, buyers and suppliers. It prevents identical items from appearing multiple times in the catalogue under different names and makes tenders unambiguous. Especially when requesting documents or during pre-qualification, uniform coding helps to clearly define the scope of services.

### Item master and duplicate detection

A central benefit lies in duplicate detection: if the same consumable stock item has been created by three plants under different descriptions, the system recognises the match via the identical UNSPSC code. This reduces inventory, simplifies framework agreements and strengthens the position in supplier consolidation. A prerequisite is a clean mapping of the legacy stock – a step that is often underestimated in practice.

### Tenders and catalogue procurement

In tenders, the UNSPSC code level allows a precise specification of the requirement without resorting to lengthy textual descriptions. In e-catalogues and on marketplaces, items can be filtered and compared via the code. Integration with manufacturer catalogues also works better when the company's own material class structure provides a bridge to the manufacturer part number (MPN).

## **Methods and approach for implementation**

Implementing UNSPSC is primarily a data project within procurement planning. Success depends less on the choice of system than on clean migration and sustainable maintenance. A phased approach has proven effective, starting with an inventory analysis and ending with clear rules for new item creation.

### **Inventory analysis and mapping**

First, existing material masters, supplier directories and contract data are exported and subjected to manual or rule-based mapping rules. For automation, inference methods are suitable, which suggest appropriate codes from item texts; however, expert review remains necessary. High hit rates for automatic mapping typically range between 70 and 90 per cent in practice, with the remainder requiring manual clarification.

### **Governance and maintenance process**

Without governance, codes quickly become outdated. A clear process is advisable that defines who creates material groups, which mandatory fields apply and how contradictions are resolved. Many companies embed code maintenance in a master data process similar to inspection equipment management or in a central master data function. When considering a make-or-buy decision for mapping, the trade-off between in-house master data teams and specialised service providers should be weighed up.

## **Key KPIs and benefit dimensions**

The benefit of UNSPSC is measurable in data quality and the analyses derived from it. As a basis for procurement controlling, it provides the uniform perspective without which spend analyses fail due to inconsistent descriptions.

### **Data quality and spend transparency**

Key metrics are the proportion of correctly coded items, the duplicate rate in the material master and the completeness of supplier assignment. On this basis, tendering potential can be identified per segment and bundling effects in supplier consolidation quantified. A consistent classification is also helpful for the supplier rating model, as supplier performance can be assessed by commodity group.

### **Compliance and reporting**

For group-wide reports, sustainability evaluations or audit-proof documentation, UNSPSC serves as a stable reference. Because it is public and free of licence fees, it is also suitable for data exchange with external manufacturing service providers and logistics partners. Code changes are versioned, which improves the traceability of historical analyses.

## **Risks, controls and typical mistakes**

The most common problems arise not in the system but in its application: lack of training, unclear responsibilities and a code schema that is deeper than the actual need. Anyone who enforces the full hierarchy quickly loses acceptance among business users.

### **Over-classification and data noise**

When requisitioners create codes without understanding the structure, misclassifications arise that distort spend analyses. Control instruments are plausibility rules, spot checks and regular evaluations of the most frequently used classes. An agreement with suppliers on adopting codes from their catalogues is also helpful – ideally with data deliveries safeguarded by a Non-Disclosure Agreement (NDA) as part of catalogue subscriptions.

### **Version changes and international differences**

UNSPSC is updated at regular intervals; codes may be discontinued or renamed. A version change without a migration plan risks historical and current analyses becoming incomparable. At offshoring sites, it should also be clarified whether locally deviating classifications are maintained – here too, the rule applies: uniformity before local convenience.

## **Current developments and outlook**

UNSPSC remains a living system: regular versions add new commodities, for example from the areas of renewable energy and digitalisation. At the same time, the focus of use is shifting away from static catalogues towards AI-assisted automatic classification and data exchange via marketplaces.

### **Automatic classification with AI**

Language models and matching algorithms can now assign free-form item texts to UNSPSC codes more reliably than ever. This significantly lowers the barrier to entry, particularly for SMEs. Verifiability remains critical: not every automatically suggested code result is correct, which is why human review should remain standard for critical material groups.

### **UNSPSC in interplay with marketplaces**

B2B marketplaces and platforms for technical supply services increasingly rely on standardised classifications to make offers comparable. For buyers, this means: anyone who keeps their own item masters UNSPSC-compliant can match offers, delivery date commitments and catalogue data more quickly. The classification thus becomes an operational enabler of procurement rather than a mere reporting tool.

## Typical metrics

| Metric                     | Typical value                                                                                            |
|----------------------------|----------------------------------------------------------------------------------------------------------|
| Item master coding rate    | > 95 %<br><i>Proportion of material master records with a valid UNSPSC code</i>                          |
| Duplicate rate             | < 2 %<br><i>Proportion of potential duplicates after cleansing</i>                                       |
| Automatic mapping hit rate | 70–90 %<br><i>typical benchmark for rule-based or AI-assisted code suggestions</i>                       |
| Version currency           | current version <= 12 months<br><i>Time since the UNSPSC version in use was introduced in the system</i> |

## Practical example

A mid-sized mechanical engineering company with several European sites maintained more than 60,000 material master records, many of them duplicates with differing descriptions for identical standard parts. As part of a master data project, all items were mapped to UNSPSC, starting with the C-segments for wear and standard parts. Within one year, the duplicate rate fell noticeably, and the spend analysis revealed bundling potential in cutting and fastening technology.

- Pilot mapping on the 20 highest-volume material groups before rollout
- Establishment of a central master data function with clear creation rules
- Automatic code suggestion for new item creation with spot checks
- Tender policy: requirements above a defined value must be tendered with UNSPSC coding

## Conclusion

UNSPSC is a proven, open classification system that provides technical buyers with a common language for items, services and suppliers. Its main benefit lies in data quality: fewer duplicates, reliable spend analyses and more efficient tenders. The effort lies less in the system than in migration and governance – and this is where success is decided. Anyone who consistently interlocks UNSPSC with their material group hierarchy creates the foundation for transparency, bundling and digital procurement processes. For comparison with deep technical feature classifications, it is worth additionally looking at systems such as eCI@ss.

## Frequently asked questions

### ? What does UNSPSC mean?

UNSPSC stands for United Nations Standard Products and Services Code, an international

classification for products and services. Each code consists of four hierarchy levels: Segment, Family, Class and Commodity. The system is openly licensed and is maintained on behalf of the United Nations.

**? How is the UNSPSC code structured?**

The code follows the structure Segment – Family – Class – Commodity, each two digits, supplemented by a check digit at each level. In practice, the eight-digit form up to Class level is frequently used. The top level is suitable for group-level reporting, the lowest level for item catalogue maintenance.

**? What is the difference between UNSPSC and eCl@ss?**

UNSPSC is industry-neutral and broadly defined, while eCl@ss offers considerably deeper technical feature structures. For spend analyses and international comparisons, UNSPSC is often more pragmatic; for technical descriptions, eCl@ss is more detailed. Many companies use both systems in parallel for different purposes.

**? Is UNSPSC worthwhile for SMEs?**

Yes, particularly if duplicates in the material master are a problem or spend analyses across multiple sites are required. The implementation effort can be limited through automatic code suggestions and a pilot mapping restricted to a few material groups. However, without governance maintenance, the system quickly loses its informative value.

**? Can UNSPSC be used free of charge?**

UNSPSC is publicly available and generally free of licence fees. The codeset files can be obtained from the official maintenance organisation, and updates are published in versioned form. For commercial software integrations, the respective terms of use of the maintenance organisation apply.

**? How do you find the correct UNSPSC code for an item?**

The starting point is a keyword search in the official code table, ideally in English, as the original terminology is in English. It is also helpful to look at comparable items in catalogues or on marketplaces. In cases of ambiguity, the main use of the item is decisive, not the technical detail variant.

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