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Electronic invoicing – Part 12: Study on the internationalization of EN 16931-1

Elektronische Rechnungsstellung - Teil 12: Studie zur Internationalisierung der EN 16931-1

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Elektronische Rechnungsstellung - Teil 12: Studie zur Internationalisierung der EN 16931-1

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European foreword

This document (FprCEN/TR 16931-12:2026) has been prepared by Technical Committee CEN/TC 434 “Electronic Invoicing”, the secretariat of which is held by NEN.

This document is currently submitted to the Vote on TR.

This document is part of a set of documents, consisting of:

— EN 16931-1:2026, Electronic invoicing - Part 1: Semantic data model of the Core Elements of an Electronic Invoice

— CEN/TS 16931-2:2026, Electronic invoicing - Part 2: List of syntaxes that comply with EN 16931-1

— CEN/TS 16931-3-1:2017, Electronic invoicing - Part 3-1: Methodology for syntax bindings of the Core Elements of an Electronic Invoice

— CEN/TS 16931-3-2:2026, Electronic invoicing - Part 3-2: Syntax binding for ISO/IEC 19845 (UBL 2.1) invoice and credit note

— CEN/TS 16931-3-3:2026, Electronic invoicing - Part 3-3: Syntax binding for UN/CEFACT XML Cross Industry Invoice D16B

— CEN/TS 16931-3-4:2026, Electronic invoicing - Part 3-4: Syntax binding for UN/EDIFACT INVOIC D16B

— CEN/TR 16931-4:2017, Electronic invoicing - Part 4: Guidelines on interoperability of Electronic Invoices at the transmission level

— CEN/TS 16931-5:2025, Electronic invoicing - Part 5: Guidelines on the use of sector or country extensions in conjunction with EN 16931-1, methodology to be applied in the real environment

— CEN/TR 16931-6:2017, Electronic invoicing - Part 6: Result of the test of EN 16931-1 with respect to its practical application for an end user - Testing methodology

— CEN/TS 16931-8, Electronic invoicing - Part 8: Semantic data model of the elements of an e-receipt or a simplified electronic invoice

— CEN/TR 16931-9, Electronic invoicing - Part 9: VAT reporting and gap analysis with current e-invoicing standardization deliverables

— CEN/TR 16931-10, Electronic invoicing – Part 10: Additional requirements to extend to B2B

— CEN/TR 16931-11-1, Electronic invoicing - Part 11: e-Receipt syntaxes

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Introduction

This document provides a technical and analytical description of the internationalization of EN 16931-1, the European standard for the semantics of electronic invoicing. EN 16931-1 was developed under the framework of Directive 2014/55/EU and defines a standardized semantic data model for structured invoices, described as supporting machine-readable, compliant, and interoperable invoicing across the public and private sectors.

The success of EN 16931-1 within the EU is described in documentation as a reference point for structured e-invoicing. The standard was not initially designed for global usage. As countries outside Europe implement digital invoicing systems, often based on differing tax models, regulatory frameworks, and legacy standards, additional implementation considerations and challenges are observed. In the context of this diversity, EN 16931-1 includes a formal Extension Methodology, described as a standardized mechanism that enables localized additions (e.g. fiscal or operational requirements) without deviation from the core model. This document describes how the semantic core of EN 16931-1, in combination with this extension framework and a mapping-based methodology, facilitates alignment across heterogeneous environments without reliance on a single syntax or centralized infrastructure.

The approach taken in this document distinguishes between:

— Semantic interoperability: Shared understanding of invoice content, independent of technical format;

— Syntactic interoperability: Compatibility at the data format or structure level (e.g. UBL, CII, UN/EDIFACT, ANSI X12).

EN 16931-1 is structured around semantic alignment as the foundation for interoperability. Its architecture supports standardized mappings to various syntaxes (e.g. UBL, UN/CEFACT CII, EDIFACT, ANSI X12) and includes a formal Extension Methodology. Extensions are described as integral to the standard and are presented as a standardized mechanism defined within EN 16931-1 for accommodating real-world diversity in fiscal, legal, and operational requirements. This approach is described as allowing countries or sectors to add localized elements (e.g. additional tax codes or industry-specific data) while maintaining full semantic compatibility with the core model. Together, the semantic core, the mapping methodology, and the extension framework are described as supporting use in multiple implementation contexts, while balancing standardization with necessary flexibility.

For context on international use, the document draws on practical examples of how EN 16931-1 has been adopted or mirrored internationally through frameworks such as Peppol BIS, PINT, and country-specific strategies in Brazil, India, Japan, the United States, and Australia. The document also analyzes emerging work by global institutions such as OECD's VAT in the Digital Age (ViDA) initiative and ISO/IEC JTC 1/SC 32, which are described as contributing to semantic modelling efforts beyond the European context.

This document is intended to be presented as providing a semantic foundation, rather than promoting EN 16931-1 as a prescriptive global solution. This foundation is described as supporting localized extensions, and is described as facilitating cross-border interoperability, and is associated with reduced duplication.

This document:

— assesses the technical and institutional feasibility of extending EN 16931-1 to global use cases;

— evaluates international interoperability frameworks (e.g. Peppol, UN/CEFACT, GENA, ViDA, ISO/IEC JTC1/SC 32);

— describes policy strategies that have been discussed in relation to regional adaptation and structured mappings;

— describes implementation, monitoring, and feedback approaches.

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Based on policy analysis, technical design, and implementation experience, this report describes observed approaches to scalable, interoperable, and adaptive implementation of EN 16931-1 in international trade and digital tax transformation efforts.

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1 Scope

This document provides a descriptive and analytical examination of the international relevance of EN 16931-1, the European semantic data model for electronic invoicing.

The document analyzes technical, institutional, and governance aspects associated with the use of EN 16931-1 beyond its original European public procurement context. The analysis is limited to observed implementation practices, interoperability mechanisms, alignment structures, and governance patterns documented in European and non-European jurisdictions.

This document

1. Describes international implementation patterns in structured electronic invoicing systems that completely or partially align with EN 16931-1.

2. Examines interoperability mechanisms defined within the EN 16931 series, including syntax bindings, structured mappings, extension methodologies, and validation approaches.

3. Reviews interaction between EN 16931-1 and international semantic and syntactic frameworks, including ISO/IEC 19845 (UBL), UN/CEFACT CII, UN/EDIFACT, ANSI X12, and related institutional initiatives.

4. Summarizes institutional cooperation mechanisms relevant to international alignment, including ISO–CEN coordination under the Vienna Agreement and liaison structures within ISO/IEC JTC 1/SC 32 data management and interchange.

5. Describes observed rollout models, monitoring practices, and knowledge sharing structures in national and regional implementations.

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This document does not:

— Establish normative requirements.

— Modify any part of the EN 16931 series.

— Define new syntax bindings or extension rules.

— Mandate specific syntaxes, infrastructures, legal frameworks, tax models, or reporting architectures.

— Provide policy recommendations or prescriptive implementation guidance.

The purpose of this document is to document and analyse observed international alignment mechanisms and implementation approaches associated with EN 16931-1

2 Normative references

There are no normative references in this document.

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