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(ICS 01.140.30; 35.240.50; 47.020.99)

SINGAPORE STANDARD

Specification for digital bunkering supply chain documentation



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Foreword

This Singapore standard was prepared by the Working Group on Digital Bunkering Documentation set up by the Technical Committee on Bunkering (Liquid Ambient Fuels) under the purview of the Chemical Standards Committee.

Despite tremendous progress in IT over the past decades, documentation in the bunkering industry is done using traditional hard copies or unprotected and unstructured softcopy files. This hinders the flow of structured data between transacting parties. The standard focuses on the digitalisation of documentation that supports the flow of structured data through diverse and dissimilar supply chains across multiple businesses and industrial sectors while retaining the unstructured human readability of traditional business documents.

A machine-interpretable Supplement in JSON format was also prepared by the Working group to promote data consistency across implementations of this standard within different IT systems.

It is presupposed that in the course of their work, users will comply with all relevant regulatory and statutory requirements. Some examples of relevant regulations and acts are listed in the Bibliography. The Singapore Standards Council and Enterprise Singapore shall not be responsible for identifying all of such legal obligations.

NOTE

- 1. Singapore Standards (SSs) and Technical References (TRs) are reviewed periodically to keep abreast of technical changes, technological developments and industry practices. The changes are documented through the issue of either amendments or revisions. Where SSs are deemed to be stable, i.e. no foreseeable changes in them, they will be classified as "mature standards". Mature standards will not be subject to further review unless there are requests to review such standards.*
- 2. An SS or TR is voluntary in nature except when it is made mandatory by a regulatory authority. It can also be cited in contracts making its application a business necessity. Users are advised to assess and determine whether the SS or TR is suitable for their intended use or purpose. If required, they should refer to the relevant professionals or experts for advice on the use of the document. Enterprise Singapore and the Singapore Standards Council shall not be liable for any damages whether directly or indirectly suffered by anyone or any organisation as a result of the use of any SS or TR. Although care has been taken to draft this standard, users are also advised to ensure that they apply the information after due diligence.*
- 3. Compliance with a SS or TR does not exempt users from any legal obligations.*

Specification for digital bunkering supply chain documentation

0 Introduction

0.1 Document overview

This standard is intended to facilitate the digitalisation of current bunker processes within bunker supply-chains, but to do so using verifiable and human-readable digital bunkering documents (DBDs). In this way, IT systems along supply-chains can have the opportunity to use bunkering data directly without translation or manual data-transcription; and participants can still have the option to work in their current ways, manually reading them and sending them, together with their data, further downstream.

The first target group of readers are professionals within the bunkering industry and the other businesses and regulators that support it (e.g. banks, maritime authorities). The second group are IT service providers who design and implement IT systems that produce, consume, and process digital documents.

The main text of the standard describes requirements common for all digital bunkering documents covered under this standard; those that apply to specific types of documents in greater detail, especially document-specific definitions of structured data, are in Annexes A to D.

Reading the main body of the text should impart an understanding of the overarching concepts and principles used in this standard for the digitisation of bunkering business and documents. For in-depth knowledge of specific documents features, stakeholders can refer to the relevant annex(es), which provide detailed information on them, e.g. the treatment of signatures and data fields for specific document types.

0.2 Intended audiences and how to read this document

This document is meant to facilitate communications between the business and IT professionals in the bunkering supply chain community.

This document is structured to be accessible to both groups; the main text provides a comprehensive overview that is understandable by the bunkering community. The Annexes, however, are designed for IT professionals.

The objectives and requirements of this standard were defined by business users. Most of the specifications are to be implemented by IT professionals although business users may have to adapt their work processes when their documents are digitalised.

Annex A, the most extensive section, includes definitions of machine-readable/interpretable data for 14 types of documents used in bunker supply chains. Each document type is detailed in its own sub-annex, such as Annex A.1 for BDNs (Bunker Delivery Notes), where the structured data relevant to each document type is laid out in tables.

Business readers should be able to identify the “Common names” of data fields along with their “Definitions”, “Data type”, and “Remarks” within those tables.

To ensure consistent communication and minimise misinterpretation of structured data among supply chain participants, these data fields have been standardised across all document types in Annex A. Annex B describes general format for all DBDs and shows where structured data is stored within them.

1 Scope

This standard provides specifications and requirements for the main types of digital documents utilised and exchanged within bunkering supply chains, aligning with established business practices and bunkering standards such as SS 648-1, SS 648-2, SS 600 and SS 660.

This standard requires digital documents to conform to specific data specifications and document formats. Additionally, it requires users to adhere to defined processes for the issuance of these documents.

Programmers may use the machine-interpretable supplement to automatically generate code for defining data fields within their own IT systems. This supplement is intended to promote data consistency across implementations of this Standard within different IT systems.

The types of documents, as described in Annex A, are listed below:

Quantity documents

- 1) Bunker delivery note
- 2) Meter reading record form
- 3) Mass flow meter system seals checklist
- 4) Bunker requisition form
- 5) Certificate of quantity
- 6) Bunker metering ticket
- 7) Meter totaliser log
- 8) Statement of fact
- 9) Note of protest (Bunker tanker)
- 10) Note of protest (Vessel)

Quality documents¹

- 11) Certificate of quality
- 12) Quality test report

Commercial documents

- 13) Sales invoice – Ex-wharf
- 14) Sales confirmation – Ex-wharf
- 15) Sales invoice – Delivered
- 16) Sales confirmation – Delivered

2 Normative references

The following referenced documents are indispensable for the application of this standard. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

SS 648-1	Code of practice for bunker mass flow metering – Part 1: Meter selection and acceptance tests
SS 648-2	Code of practice for bunker mass flow metering – Part 2: Technical requirements and procedures

¹ The structured data parameters of these documents are still under development.

SS 660 Code of practice for bunker cargo delivery from oil terminal to bunker tanker using mass flow meter

ISO 8601 Format specification for communicating date and time information