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Tækniforskrift - Gengi gjaldmiðla

Technical specification - Currency  
Exchange Rates



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# ÍST TS 312:2022

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# ÍST TS 312:2022

## Foreword

This ÍST Technical Specification was developed in accordance with “ÍST Reglur um tækniforskriftir, tækniskýrslur og vinnustofusamþykktir” (e. IST rules on Technical Specifications, Technical Reports and Workshop Agreements). The TS (Technical specification) was prepared by the technical committee TN-FMP (The Technical Committee on Financial Services) that operates within FUT (Sector committee for ICT standardization) following a public call for participation within TN-FMP. The final draft was sent to the TN-FMP on the 2022-05-XX and approved by correspondence on the 2022-05-XX. The text of ÍST TS-312 was submitted to IST for publication on 2022-0-XX.

The accompanying OpenAPI 3.0.1 definition “IOBWS-Currency3.0.yaml” located at <https://github.com/stadlar/IST-FUT-FMTH/tree/master/Deliverables>, should be viewed as an integral part of ÍST TS-312.

The document “ÍST TS 312\_2022 Debit and credit cards details and statements.md” is the source of this rendition, and versions of that document will be used for future errata and clarifications per the procedures to be laid out in the workshop agreement ÍST WA-316, IOBWS 3.0 Technical Guidelines. The rules are outlined in the README.md accompanying the Github Git repository and are accepted by the participants in TN-FMP alongside this specification. These guidelines establish the workgroup TN-FMP-VH-7 as in charge of monitoring submitted issues and pull requests made to the repository when they fall outside the purview of other regular workgroups. TN-FMP-VH-7 will evaluate if changes are ready to be accepted into the repository and when or if they warrant patches or minor releases to the specification. Versioning will adhere to the Semantic Versioning [5] scheme and each minor release will require a workgroup agreement under the “ÍST reglur” referenced above.

The work on the ÍST TS was primarily funded by Arion Banki, Íslandsbanki and Landsbankinn. It is the result of the workgroup TN-FMP-VH-8. In part, the work is based on the earlier technical specification TS-312 authored by TN-FMP-VH-2 on Technical Requirements, and TN-FMP-VH-1 on Business Requirements, with the participation of an external consultant. TS-312 was approved within TN-FMP on 15.3.2021. TS-312 is the next version of the Icelandic Online Banking Services, replacing TS-160:2013 \*Gengi\*.

ÍST TS-312 is not subject to any patent rights. Some specific data elements in the specification can be viewed as derived from version 1.3.8 of the Berlin Group's NextGenPSD2 Framework and therefore the “IOBWS-Currency3.0.yaml” definition is also distributed under a Creative Commons Attribution 4.0 International Public License (CC BY).

This means the YAML Specification for ÍST TS-312 can be copied and redistributed in any medium or format for any purpose, even commercially; when shared, appropriate credit must be given, a link to the license must be provided, and any changes made must be indicated. One may do this in any reasonable manner, however it must not be suggested that the licensor had endorsed it. Additionally, if you remix, transform, or build upon the specification, you may not distribute the modified specification.

The Technical Committee's participants have made every effort to ensure the reliability and accuracy of the technical and non-technical content of ÍST TS-312, but this does not guarantee its correctness, explicitly or implicitly. Users of ÍST TS-312 should be aware that neither the TN-FMP nor ÍST can be held liable for damages or losses of any kind which may arise from its application. Users of ÍST TS-312 do so on their own responsibility and at their own risk.

## Introduction

This Technical Specification (TS) presents version 3.0 of the Icelandic Online Banking Services (IOBWS) for currency exchange rate.

Previous versions of IOBWS, released in 2007 and 2013 respectively, used the OASIS SOAP standards which were current at the time to define common web service interfaces for the Icelandic commercial and savings banks. This enabled software vendors, enterprises, and service providers to integrate their accounting, payment, and information systems with the bank's services, allowing them to act on behalf of the customers and with full access to their data.

A goal of the IOBWS version 3.0 charter, which was set forth by TN-FMP in the beginning, is the transition from SOAP to a REST-like API, which is defined by a recent iteration of the Open API Specification [2]. Along with support for modern authentication and authorization standards, this addresses some of the perceived complexity in adapting IOBWS to various use cases, platforms, and programming languages that have come to the forefront after the release of the previous IOBWS versions.

The ÍST TS-312 is the successor to the TS-160 specification. It was not the aim of TN-FMP to substantially alter the functionality of the previous service, which only offered information on foreign exchange rates. It should be viewed as a standalone specification though part of the overall IOBWS version 3 update, where it most closely aligns with TS-313 and to a lesser degree TS-310. Readers looking for more context can consult those documents. ÍST TS-312 is not part of NextGenPSD2 framework nor is it in any way related to the PSD2 regulation. The drive to consolidate the IOBWS specifications may however result in many of the elements and types in ÍST TS-312 having similarities to parts of the NextGenPSD2 framework. Attribution applies to these as required by the CC BY 4.0 license of the NextGenPSD2 OpenApi specification.

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# ÍST TS 312:2022

## 1 Scope

ÍST TS-312 defines web application programming interfaces implemented by Icelandic commercial and savings banks to expose shared functionality and information for currency exchange rate, under the Icelandic Online Banking Web Services (IOBWS) framework of specifications.

Other ÍST Technical Specifications exist which address related but discrete units of the overall IOBWS framework, either as new additions or upgrades to the previous specifications. Some crosscutting guidelines and shared concerns are addressed in the workshop agreement ÍST WA-316. As the consumption and implementation of each part of IOBWS are optional, the documents aim to be independent of each other.

The focus in ÍST TS-312 is the information needed for consuming information about foreign currency rates though the variations in client usage patterns and bank specific implementations detail result in many different use cases for said information.

The intended audience for the specification document ÍST TS-312 is developers who will either implement banking API services or the systems that will consume them as API clients. The reader is expected to have a basic understanding of the Icelandic financial products involved. Further documentation on business aspects of those products will be available from each bank, as they may involve service agreements and the end customers' contractual preferences and benefits.

Out of necessity, the previous IOBWS technical specifications largely consisted of expressing the intent and actual content in a human-readable format, otherwise found in the associated XML Schema and SOAP definitions. The expectation for ÍST TS-312 is that the technical service definitions and JSON data schemas in the accompanying OpenAPI specification can be understood using utilities that can convert them into documentation or navigatable user interfaces.

Consequently, the ÍST TS-312 specification avoids the unnecessary repetition of information found in the technical contract "IOBWS-Currency3.0.yaml". Instead, the the document focuses on the information needed to understand the domestic context of services, schema types and service flows required to implement ÍST TS-312.

## 2 Normative references, definitions and data elements

### 2.1 Normative references

The following documents are referenced in ÍST TS-312, as part of their content constitutes the requirements of this document. If newer editions exist, only the edition cited applies.

ISO 20022. *Financial services - universal financial industry message scheme*.

NextGenPSD2 v1.3.8. *The Berlin Group NextGenPSD2 Access to Account Framework*.

OpenAPI v3.0.1. The OpenAPI Specification (OAS) by the OpenAPI Initiative, a Linux Foundation Collaborative Project.

### 2.2 Terms and definitions

- **Berlin Group** is a pan-European payments interoperability standards and harmonization initiative with the primary objective of defining open and common scheme- and processor-independent standards in the interbanking domain between Creditor Bank (Acquirer) and Debtor Bank (Issuer), complementing the work carried out by e.g. the European Payments Council. As such, the Berlin Group has been established as a purely technical standardization body, focusing on detailed technical and organizational requirements to achieve this primary objective.
- **CurrencyCode**: is an ISO 4217 standard for all currencies in the world.
- **ISO 20022** is an ISO standard [1] for electronic data interchange between financial institutions.
- **Kennitala** (often abbreviated as **KT**) is the unique national identification number issued by the Registers Iceland (ic. Þjóðskrá Íslands) and used by governmental bodies and enterprises to identify individuals, and through a comparable schema under the Iceland Revenue and Customs (ic. ríkisskattstjóri), legal entities in Iceland.
- **NextGenPSD2 Access to Accounts Framework (NextGenPSD2 Framework or just NextGenPSD2)** is the framework established by *the Berlin Group* to define a common PSD2 compliance interface [3]. Since then, parts of the framework have extended beyond compliance and into other Open Banking aspects.
- **The OpenAPI Specification (OAS)** defines a programming language-agnostic interface description for HTTP APIs, which allows both humans and computers to discover and understand the capabilities of a service without requiring access to source code, additional documentation, or inspection of network traffic.
- **Payment Services Directive 2 (PSD2)** was instituted by the European Parliament as EU 2015/2366 [6] and meant to further open up payment services on the internal EEA market. It was introduced to Iceland law through act no. 2021/114 [4]. PSD2 contains regulations of new services to be operated by so-called Third-Party Payment Service Providers on behalf of a Payment Service User, by leveraging Strong Customer Authentication.

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## 3 Implementation

### 3.1 Service Overview

The foreign currency exchange rate service is relatively simple and briefly described in table 3.1.

**Table 3.1:** Service on offer.

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Currencies Information Service	The Currency Information Service offers methods to retrieve a list of available currencies and the sources of currency information available from the bank in question. Based on the source, available rates for a currency can be queried as well as a specified rate for a single currency given a base currency. Historical rates for a base currency can be queried but different service levels might apply between bank implementations.

The subsequent section describe the services in further details.

#### 3.1.1 Currencies Information Service

The card account information services is closely aligned with the information service for ordinary accounts. It should reflect similar details, balances and transaction reports available through the online interfaces offered by each bank.

The table 3.2 describes the resources found in the NextGenPSD2 based IOBWS-Currency3.0.yaml.

**Table 3.2:** Service support in ÍST TS-312 and IOBWS-Currency3.0.yaml.

Endpoints/Resources	Description
currencies	List all currencies offered by the bank.
currencies/sources	Retrieve all the sources of currency information available.
currencies/{base-currency}/rates	Get available rates for a currency based on source.
currencies/{quote-currency}/rates/{base-currency}	Get a specified rate for a currency based on a base currency
currencies/{quote-currency}/rates/{base-currency}/history	Get a list of historical rates for a currency based on a base currency

The sources returned by the bank can vary based on implementations, but at least two types should be expected.

1. General (Bank exchange rate, ic. *almennt gengi*) should be returned by all banks.
2. Notes (Banknote exchange rate, ic. *sedlagengi*) is optional but the name is standard.

Other source types are expected to be handled by consumers of the services, with only those mentioned given standardized names as part of ÍST TS-312.



## Bibliography

- [1] ISO 20022. *Financial services - universal financial industry message scheme.*
- [2] OpenAPI v3.0.1. *The OpenAPI Specification (OAS) by the OpenAPI Initiative, a Linux Foundation Collaborative Project.*
- [3] NextGenPSD2 v1.3.8. *The Berlin Group NextGenPSD2 Access to Account Framework.*
- [4] Lög 114/2021. *Lög um greiðslujónustu.*
- [5] Semver 2.0.0. *Semantic Versioning Specification.*
- [6] EU 2015/2366. *Directive of the European Parliament and of the Council on payment services in the internal market, amending Directives 2002/65/EC, 2009/110/EC and 2013/36/EU and Regulation (EU) No 1093/2010, and repealing Directive 2007/64/EC.*