

Utilization of Schematron in e-invoicing in Finland

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Why Schematron was Created

Background for Schematron

- The Directive on electronic invoicing in public procurement, i.e. the E-Invoicing Directive (2014/55/EU) and through it the Act on Electronic Invoicing for Contracting Entities and Traders (241/2019) allow the recipient of an invoice to receive an invoice in accordance with a European standard upon request.
- On 5 November 2018, at the meeting of the E-Invoicing Forum Operator Group, a proposal for a common schematron of the E-Invoicing Operator Group was raised, so that all e-invoicing operators would have the same verification tool for invoices in accordance with the European Standard.
- At the meeting, it was decided to establish a working group to create a schematron and Tapani Turunen from Tieto Finland Oy was elected to lead the group.
- For Schematron creation, tenders were requested, and Posti Messaging was selected as the contractor
- Willing participants were included in the definition working group; Posti Messaging, Ropo Capital, CGI Finland, Tieto Finland and Finance Finland (Finanssiala ry)

Working Group's Decision for Implementation

The Work and Decisions of the Definition Group

- The working group decided to create a schematron to support the domestic e-invoicing standards Finvoice and TEAPPSXML
- The working group highlighted a number of challenges and potential problems based on practical experience and sought interpretations and application guidance from various quarters; for example, the Tax Administration received guidance on the acceptable accuracy of the tax amount
- The working group also made many practical decisions, for example, the code lists used in the standard are not checked; the work would be practically impossible, and the code lists are updated quite often, for example the EAS code list has had seven different versions in two years

Benefits of Using the Schematron

Schema and Schematron

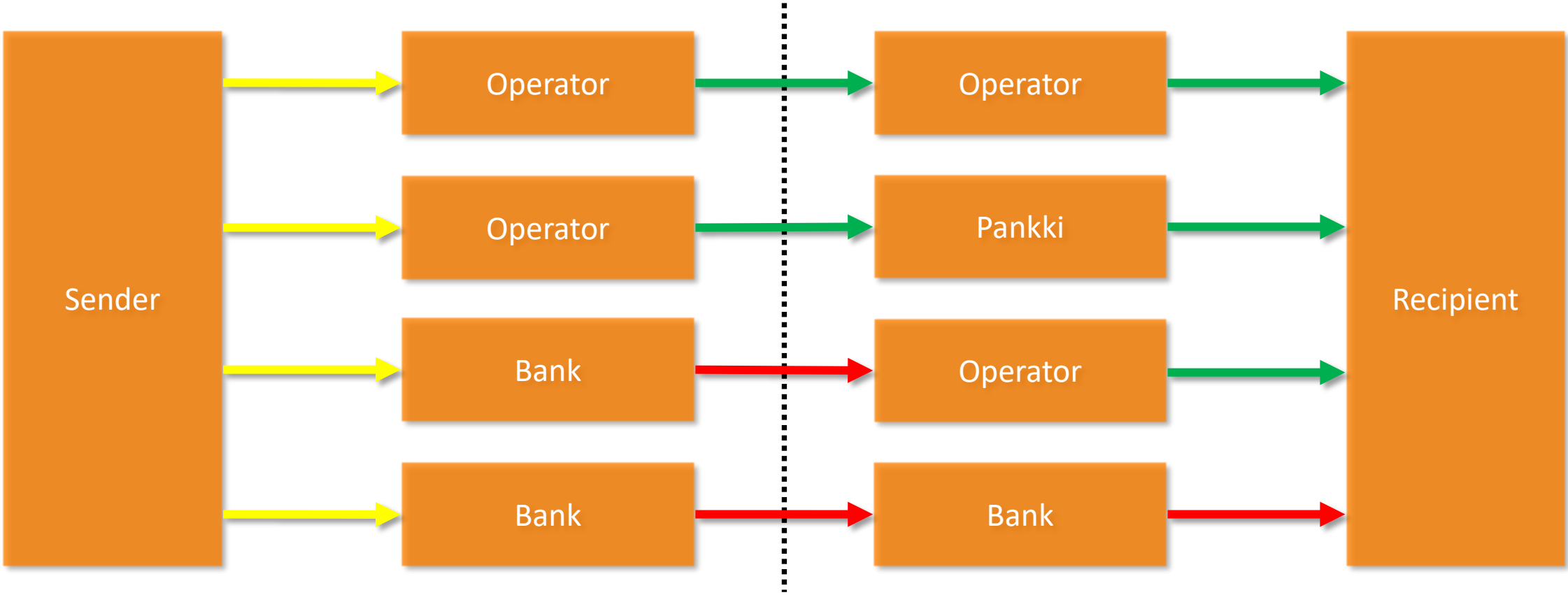
- By schema validation, the sender of the invoice data has been able to ensure that the quality of the material they send meets the schema of the message format in question. If the material has passed the validation, it is generally considered that the material is of sufficient quality to be sent to the recipient.
- The schema only takes a position on the structure of the material and possibly the length and code restrictions of the content. Schema's expressive power is very limited, e.g. conditions and integrity checks. The solution to these challenges is schematron, for example.
- Schematron does not comment on the structure of the data at all. Schematron's task is to determine data integrity requirements through rule checks. Typical integrity checks performed with schematron include summation checks, date comparisons, conditional mandatory, and formal requirements.
- Schematron does not replace schema checking but complements it and enables it to produce higher quality invoice data, which enables better automation of invoice processing.

Benefits of using the Schematron

- Often, the content requirements specified for the invoice data are checked when reading the data into the receiving system. When errors are detected in the data, it usually ends up in separate error handling, in which case the invoice information is supplemented or corrected manually. In some cases, the invoice will have to be rejected and returned to the sender.
- With schematron the content requirements of the invoice format can be published in a format that can be used to check the invoice data at the sender's side. A similar check can also be performed when receiving the invoice data. The invoice with the incorrect data content can be rejected directly to the sender without delivering it to the recipient at all. In this case, most of the erroneous invoices never end up in the recipient's system and cause extra work for the recipient.

Using Schematron for Purchase e-invoices

Verification of invoices according to the European standard (EN16931) in the four-corner model of e-invoicing from 1st of April 2021



→ = No EN-validation → = Maybe EN-validated → = EN-validated

Development Team and Further Work

Further development

- Schematron will be further developed on the basis of development proposals received, changes in the standard and nationally agreed changes.
- Schematron will be further developed by the previously mentioned development group: CGI Finland, Finance Finland, Posti Messaging, Ropo Capital, TietoEVRY and the State Treasury
- Schematron for sale by TIEKE; price 2,500 eur + VAT, plus a small annual maintenance fee to cover changes and further development of schematrons

<https://tieke.fi/palvelut/liiketoimintapalvelut/verkkolaskufoorumi/verkkolaskufoorumin-toiminta/schematron-validointi/>

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