

# Transmitting electronic invoices

CEF Digital

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# 1 Transmitting electronic invoices

## 1.1 October 2020 | Article on "eInvoicing transmission"

Thanks to the important involvement of stakeholders from the EU Member States, from the public and private sectors, the CEF eInvoicing team is pleased to publish this article resulting from close cooperation. The content of this article is based on major eInvoicing stakeholder's contributions shared throughout a series of CEF eInvoicing online activities.

Since March 2020, the [User Community](#)<sup>1</sup> is open for receiving eInvoicing stakeholders' contributions on diverse eInvoicing topics!

### Introduction

The European economic recovery is the high priority for the European Commission and the EU Member States. This recovery has to support the twin green and digital transitions and overall resilience of the European Union.

In this context, electronic public procurement and electronic invoicing (eInvoicing) have a major role to play. eInvoicing is one of the key steps in the eProcurement life cycle. It enables trading counterparties to send and receive standardised eInvoices compliant with the European standard for the semantic elements of a core eInvoice (EN 16931). eInvoicing already shows important [benefits](#)<sup>2</sup> for public and private actors.

eInvoicing and efficient transmission via interoperable transport infrastructures will:

- optimise interoperability for the exchange of eInvoices among the EU Member States;
- minimise emerging ad-hoc transmission workarounds to cope with current challenges;
- reduce the usage of unstructured document exchange via multiple channels (e.g. email), this currently causing inefficiency;
- encourage eProcurement life cycle automation by considering other digitised documents part of the supply chain and emerging technologies.

This article will:

1. provide national and regional stakeholders with an insight into eInvoicing transmission issues currently faced and raise awareness about the important role of eInvoicing solution and service providers in fostering the take-up of eInvoicing by economic operators (e.g. the suppliers to contracting authorities).
2. present CEF [eDelivery based on AS4](#)<sup>3</sup> and promote the usage of this interoperable exchange message mechanism.
3. guide stakeholders through ways to move forward and to emphasise the role of interoperable networks and best practices in overcoming transmission challenges.

### eInvoicing transmission challenges within the Digital Single Market

<sup>1</sup> <https://ec.europa.eu/cefdigital/wiki/x/5llzDQ>

<sup>2</sup> <https://ec.europa.eu/cefdigital/wiki/x/mwTvB>

<sup>3</sup> <https://ec.europa.eu/cefdigital/wiki/x/SwPvB>

[Directive 2014/55/EU](#)<sup>4</sup> mandates the implementation of an eInvoicing solution based on the European standard in each EU Member State and other EEA countries in public procurement. All public contracting authorities must be able to receive and process eInvoices from domestic and foreign senders. However, the Directive does not mandate any specific transmission system or transport infrastructure. As a result, there are many forms of transmission services or networks provided by private actors and public sector organisations.

At the same time, the European Commission has been promoting through the CEF programme the [eDelivery Building Block](#)<sup>5</sup> as the standard transmission and AS4 (being the exchange protocol), without imposing the use of a single eInvoicing system *per se* (not stated in the eInvoicing for Public Procurement Directive). [Peppol](#)<sup>6</sup> uses the CEF eDelivery AS4 standard which is also under active implementation/ investigation by other communities such as [EESPA](#)<sup>7</sup> and [Business Payments Coalition \(US\)](#)<sup>8</sup>. The use of CEF eDelivery Building Block facilitates interoperability by allowing access points to interconnect using the same delivery standards. This re-use of the European standard on eInvoicing creates economies of scale and scope and permits easier interoperability between different network users.

eInvoicing transmission is currently a pertinent topic, but still in need of further investigation and development, including in the international context – where Europe has a leading role. Various European eInvoicing associations and two US organisations have been involved in the creation of a [Global Interoperability Framework](#)<sup>9</sup> (see below). Interoperability as defined in the framework "*should be present irrespective of the information technology environment and the eInvoicing solution or service used by each trading party*".

However, data transmission issues remain in the eInvoicing solutions implemented among and within the EU Member States:

- Among some EU Member States, there are cases of **incompatibility** in the infrastructure used when exchanging cross-border eInvoices, this often creating trade barriers (when no pan-European interoperability arrangements are employed to overcome this issue);
- In some instances, an excessive number of **non-interoperable solutions and eInvoicing strategies** are in place in each country. Nevertheless, it is important to encourage competitive markets and innovation.

This situation hampers the wider implementation of eInvoicing solutions, which is also impacted by the lack of legally binding mandate or guidance for suppliers to use eInvoicing in their procurement matters. In some EU Member States certain suppliers do not receive information on how to transmit eInvoices to public contracting authorities, either on the delivery system or network protocols to use. This lack of information at the national level can generate reluctance towards eInvoicing take-up from many economic operators (suppliers or B2B actors), thus despite the involvement of many larger private and public sector organisations already operating with eInvoicing.

### Addressing eInvoicing transmission

In practice, invoices in digital form are created, processed and delivered across multiple solutions and networks often provided by service providers and solution vendors in a competitive market.

However, it is essential that all eInvoicing systems embrace interoperability agreements and tools to optimise interoperability. Some suggestions to improve the environment for interoperability are to:

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4 <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32014L0055>

5 <https://ec.europa.eu/cefdigital/wiki/x/jQTVB>

6 <https://peppol.eu/what-is-peppol/>

7 <https://eespa.eu/about-us/>

8 <https://businesspaymentscoalition.org/>

9 <http://gifworks.io/>

- **Put in place and enhance interoperability agreements between service and solution provider invoicing platforms:** Substantial volumes are delivered across ‘three-corner’ platforms<sup>10</sup>, where both buyer and supplier are connected onto the same network. This has historically been the main driver for eInvoicing adoption. It works particularly well where supply chains are rather complex and highly integrated. Today, these models increasingly experience the need for interoperability between networks (i.e. users); thus, generated by customers' demands and expectations and based on interoperability agreements.
- **Encourage interoperability among participants on the different operating platforms:** The ability to exchange transactions between participants on different networks is increasingly important- this is the so-called four-corner model<sup>11</sup>. This model enables trading partners to use platforms and tools which are optimal for their activities while being able to interconnect. Peppol, being an implementation of the CEF Building Blocks<sup>12</sup> provides this interoperability and a successful focus on public procurement. Many service providers, such as EESPA members, operate multiple four-corner networks through bilateral and multilateral agreements. Today, countries considering approaches on how to connect trading partners should carefully consider (1) to maintain a levelled playing field for eInvoicing service providers to compete and offer appropriate solutions to buyers and sellers; (2) to ensure the possible connection of solutions through standardised networking protocols, (3) to enable domestic trading partners to interoperate with counterparts cross-borders and (4) to use the full potential of the European standard as an instrument for a more digitalised and competitive Europe.
- **Promote the benefits of eInvoicing and share implementation guidelines to economic operators and businesses.** Over the past years, eInvoicing expert associations and country representatives worked hard and led important initiatives contributing greatly to make eInvoicing interoperability concrete. However, optimal eInvoicing transmission and the maximisation of exchanges strongly depends on voluntary B2B stakeholder involvement and their willingness to cooperate. For this, businesses should (1) be aware and convinced that interoperability through all supply chain actors creates a shared added value benefiting to all, (2) take part in discussions and help to align market needs and eInvoicing initiatives and (3) adopt eInvoicing by implementing a EN-compliant solution.

The European Commission supports the implementation of the European standard on eInvoicing with the CEF eInvoicing Building Block<sup>13</sup> and CEF eDelivery Building Block<sup>14</sup>. The CEF eDelivery Building Block helps address eInvoicing interoperability issues and establishes a technical base for service providers. CEF eDelivery components, including the ‘Discovery’ (SML/SMP), and messaging features (e.g. envelopes, payloads, and response messages) enable the secure, cross-border and interoperable exchange of eInvoices.. CEF eDelivery specifications remain flexible enough for enabling the adaptation and scalability of emerging technologies (e.g. blockchain, robotisation)

### eInvoicing Transmission – The recent Global Interoperability Framework (GIF)

In June 2020, a group of European and North American associations have proposed a [Global Interoperability Framework \(GIF\)](#)<sup>15</sup>. This builds on previous work undertaken by Peppol, EESPA and the Business Payments Coalition (US) organised by the Federal Reserve Bank of Minneapolis, which together with [Connect ONCE](#)<sup>16</sup> are the initial members of the GIF Working Group. The GIF builds on the concept that ‘interoperability can be organised through the linkage of trading parties irrespective of the specific information technology environment or eInvoicing solution or service used by each trading party’. The GIF does not propose a single network but

<sup>10</sup> <https://ec.europa.eu/cefdigital/wiki/x/eQfvB>

<sup>11</sup> <https://ec.europa.eu/cefdigital/wiki/x/eQfvB>

<sup>12</sup> <https://ec.europa.eu/cefdigital/>

<sup>13</sup> <https://ec.europa.eu/cefdigital/wiki/x/EgTvB>

<sup>14</sup> <https://ec.europa.eu/cefdigital/wiki/x/jQTVB>

<sup>15</sup> [https://ec.europa.eu/cefdigital/wiki/pages/viewpageattachments.action?](https://ec.europa.eu/cefdigital/wiki/pages/viewpageattachments.action?=&highlight=Analysis+of+benefits+of+implementing+eInvoicing_.pdf&pageId=82773147&preview=%2F82773147%2F27816780)

[=&highlight=Analysis+of+benefits+of+implementing+eInvoicing\\_.pdf&pageId=82773147&preview=%2F82773147%2F27816780](https://ec.europa.eu/cefdigital/wiki/pages/viewpageattachments.action?=&highlight=Analysis+of+benefits+of+implementing+eInvoicing_.pdf&pageId=82773147&preview=%2F82773147%2F27816780)

<sup>16</sup> <https://connect-once.com/>

offers a **blueprint for interoperability solutions based on the common use of recommended standards and practices.**

Both the GIF and the interoperability solutions offered or being developed by its constituent associations recommend the use of the CEF eDelivery Building Block (e.g. AS4, SML/SMP). These protocols can be adopted as common base by different providers to build their own solutions and to provide the related services. The latter can benefit from the GIF's **flexibility** when setting up the governance and business practices according to their community requirements and culture, all based on consistently implemented technical standards.

### **Major role of the private sector when addressing invoicing transmission**

The scope of invoicing is now moving from B2G to B2B. This is the case in Italy (where invoicing transmission remains a challenge but where B2B invoicing is mandatory) and Croatia or France (where B2G invoices submission is mandatory for the “sending” side), businesses' involvement strongly boosts the invoicing mass-adoption. Solution & service providers, accountancy firms or banks (in some countries) play a major role in the adoption of B2B invoicing. By providing some of the invoicing ready to use solutions (compatible with transmission networks) available on the market to economic operators, these actors systematically onboard business operators (including SMEs).

### **Conclusion on the use of the CEF invoicing and eDelivery building block**

The widespread adoption of invoicing will contribute to the twin green and digital transmission and resilience of the EU. To build an optimal invoicing transmission in a EU Digital Single Market, there must be a common understanding and technical base for invoicing transport mechanisms. The CEF eDelivery set of specifications is the “tool” supported by the European Commission for ensuring common practices among invoicing initiatives. Today, this standard is recognised by all major organisations within the Member States as well as at international level. It is also used when establishing new interoperability frameworks such as the GIF.

Building on these developments, invoicing solution and service providers have the possibility to innovate and create interoperable and **compliant solutions**<sup>17</sup>. Providers play a major role in the invoicing mass adoption which is necessary for the sustainability and continuity of the EU economy. In addition to providing ready to use invoicing solutions to economic operators, they can ensure an efficient invoicing private sector onboarding. Globally, the private sector, which has fostered invoicing during the last 20 years, has a strong interest in further and larger adoption, especially from SMEs.

[1]"Report on interoperability and transmission of e-invoices with a special focus on the needs of Small and Medium-sized Enterprises (SMEs)", EMSFEI, October 2018, [link](#)<sup>18</sup>

### **Discussion Paper on the impact of emerging technologies on invoicing - EMSFEI SG7**

The discussion paper on 'New technologies and impact on invoicing' points out how the use of new technologies in the area of distributed architecture (e.g. Distributed Ledger Technologies, Blockchain). The report presents new ways and solutions for companies to improve their processes and to solve existing interoperability issues. This new method of making invoice and other digital document data available is described as a paradigm change compared to the traditional send-and-receive mode.

The discussion paper describes also the zero-corner model and some existing initiatives and experiences.

<sup>17</sup> <https://ec.europa.eu/cefdigital/wiki/x/yATvB>

<sup>18</sup> [https://ec.europa.eu/cefdigital/wiki/x/\\_4lzDQ](https://ec.europa.eu/cefdigital/wiki/x/_4lzDQ)

However, it does not go deep to technical details but rather points out issues that companies should consider before implementing innovative solutions.

[Download Report<sup>19</sup>](#)

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[Contribution pages<sup>21</sup>](#)

« [Processing electronic invoices<sup>22</sup>](#) [Report of the eInvoicing Forum](#) »<sup>23</sup>

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<sup>19</sup>[https://ec.europa.eu/cefdigital/wiki/pages/viewpageattachments.action?=&highlight=Analysis+of+benefits+of+implementing+eInvoicing\\_.pd](https://ec.europa.eu/cefdigital/wiki/pages/viewpageattachments.action?=&highlight=Analysis+of+benefits+of+implementing+eInvoicing_.pd)

<sup>20</sup><https://ec.europa.eu/cefdigital/wiki/x/K47VAQ>

<sup>21</sup>[https://ec.europa.eu/cefdigital/wiki/x/\\_4lzDQ](https://ec.europa.eu/cefdigital/wiki/x/_4lzDQ)

<sup>22</sup><https://ec.europa.eu/cefdigital/wiki/display/CEFDIGITAL/Processing+electronic+invoices>

<sup>23</sup><https://ec.europa.eu/cefdigital/wiki/display/CEFDIGITAL/Report+of+the+eInvoicing+Forum>

<sup>24</sup><https://ec.europa.eu/cefdigital/wiki/display/CEFDIGITAL/eInvoicing+Service+Desk>