# SAP Partners with Banks and Customers to Speed Delivery of Corporate-to-Bank Connectivity Support

## Applies to:

Business Suite ERP Financials, Bank Communication Manager, Payment Medium Workbench. For more information, visit the Enterprise Resource Planning homepage.

## Summary

SAP is incorporating support for the Common Global Implementation (CGI) Initiative for ISO 20022 Corporate-to-Bank transactions. To accomplish this, SAP has run a Community Development Group consisting of Banks and other CGI members who have mapped the CGI transaction templates to SAP internal data fields. Additionally, SAP is in the process of establishing product support for many of these transactions in Business Suite ERP Financials, Bank Communication Management, and the Payment Medium Workbench as appropriate. SAP has released support for the first transaction, and is providing the corresponding mapping to all interested parties as agreed to with the CDG members.

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## Author Bio

Mark has been with SAP for 6 years and currently works in the Technology and Innovation Platform Board Area as part of the Industry Standards and Open Source Group where he specializes on business and semantic technology standards. Prior to SAP he worked for a US Federally Funded Research and Development Center where he established and led their XML practice. He represents SAP in various standards activities, to include being the SAP Advisory Committee Representative for the W3C and alternate Board Member for OMG.

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## Introduction

In late 2011, SAP in conjunction with several banks and consultants (See Table 1), formed what is called an outward Community Definition Group (CDG).  The purpose of this group was to take the output of the ISO 20022 Common Global Implementation of ISO 20022 messages and map them to SAP fields. The value proposition for the banks to participate in this CDG is nicely summarized by Bob Blair, JPMorgan global product lead files and SWIFT channels who has stated: "SAP is to be recognized for their support of the new ISO20022 CGI standard.  Embedding this standard in every instance of SAP's ERP application offers the prospect of scaled, efficient payment operations to corporates and banks alike.  "At Bank of America Merrill Lynch, we have long supported and been a leading driver of the Common Global Implementation initiative regarding ISO 20022 messages," said Cindy Murray, BofA Merrill head of Global Treasury Product Infrastructure, Platforms and eCommerce. "We have helped lead this SAP Community Definition Group that is taking the CGI templates and developing standard data maps because this work will ultimately make it easier for our clients around the world to realize the intended benefits of the entire CGI standardization effort." Figure 1 illustrates the relationships between the ISO 20022 messages, CGI message templates, and SAP maps.

Figure 1.  ISO – CGI – SAP CDG Flow



**ISO Standards**
- Define set of standard transactions
- Broad Use
- Confusing country by country variables

**CGI Initiative**
- >50 Banks, Corporates and Solution Providers
- Defining agreed upon global profile for each transaction
- Reduce connectivity costs
- Reduces back end support requirements

**SAP Rollout**
- Ensure all internal data requirements supported in application logic/data fields
- PMW/BCM/Suite out of the box support as applicable
- Minimize Customer adoption costs
- Enables quick onboarding with BCM

To date, all six XML transactions have been mapped and the first of these – Credit Transfer Initiation pain.001.001.03 – has already been incorporated into the SAP Payment Medium Workbench and is available for customer implementation (See related article on PMW support).  Direct Debit pain.008.001.02 is under development for PMW support, Payment Status pain.002.001.03 is under development for Bank Communication Manager support, and Bank Statement camt.053.001.02 is under development for Business Suite support.  The remaining two transactions – B2C Account Report and Debit Credit Notification - are under evaluation for future support.

The CDG has agreed as part of their charter to make all maps publicly available.  This article publishes the first of these agreed to maps.  Additional maps will be published as they are incorporated into the various SAP products or when a decision has been made that no incorporation will take place in the near term.  See the CDG Mapping Group Overview tab in the spreadsheet for additional information about the CDG, including different formats for deliverables.

Table 1 – SAP ISO 20022 CGI CDG Participants

| | | |
|---|---|---|
| SAP | Deutsche Bank | SWIFT |
| Bank of America Merrill Lynch | HSBC | B2 - TDI |
| Citi | JPMC | UK Payments |
| Danish Bankers Association | Nordea | Wells Fargo |
| Danske Bank | RBS | FIT-EDV |

Individual SAP implementers can use these maps to create their own solutions for CGI conformant messages, or they can choose to use SAP Notes available in Service Marketplace for each implementation as they become available.

## Common Global Implementation

The Common Global Implementation is an initiative consisting of a collection of banks, corporates, and solution providers (including SAP) who have come together to address the issue of multiple, different implementations of the ISO 20022 Messages.  CGI is driven by customer demand for global, multi-country, multi-bank and multi-instrument implementations that the participating banks can commonly accept as one of their allowed implementations. CGI has looked at the general message structure of the various ISO 20022 messages (e.g. Credit Transfer pain.001.001.03) and defined a common message template (subset) for each transaction.  It should be noted that the banks will continue to accept other variations of the ISO 20022 messages that include support for their various value added services, but have agreed to accept the CGI message template. For additional details around the CGI Message Template, see the CGI Overview-Credit Transfer V3 tab in the spreadsheet.

## Pain.001.001.03 Mapping to SAP Fields

The spreadsheet under the ***pain.001.001.03 Mapping to SAP*** tab contains the actual mappings between the CGI Implementation Template and SAP source fields.  The spreadsheet consists of 18 columns as follows:
1.  Column A – ISO Index Number.

2.  Column B – Or. An indication of a conditional element.  Ors' are reflected in consecutive rows where the first conditional element contains an **{Or** and the second conditional element contains an **Or}**. The use of the conditional elements is in conjunction with the CGI implementation guidance contained in columns J through M.

3.  Column C – Message Item. A message item name can be reused in multiple places within the message. The uniqueness of the message item is a combination of its name and its structural sequence number.

4.  Column D – ISO 20022 Message Item (Non-Indented)

5.  Column E – Tag Name. The actual Tag Name of the Message Item.  Tag Names are reflected with XML angle brackets.  ISO 20022 Tag Names are abbreviations of the Message Item.  For example, the Tag Name for Message Item GroupHeader is <GrpHdr>.

6.  Column F – Structural Sequence. The ISO schema contains an indication for each element of its place in the message hierarchy.  This is done using the **+** character.  The number of + characters present represents the elements place in the hierarchy.  For example, The Element GroupHeader <GrpHdr> has a structural sequence indicator of a single **+** character.  All of its child elements will

have structural sequence indicators of two or more **+** characters (e.g. MessageIdentification <MessageId> is a direct child of GroupHeader and has a Structural Sequence indicator of two **+** characters.)

7. Column G – Structural Sequence Number. The structural sequence Number is a numeric representation of the structural sequence for each element in the overall message. Structural Sequence Numbers consist of a series of two digit hierarchical representations separated by a dot – that is each Sequence Number can contain N sets of two digit sequence numbers. For example, The Message Item Name with Structural Sequence Number 01.06.01 identifies it as a child element of the Message Item InitiatingParty (structural sequence number 01.06) which is in turn a child element of the Message Item GroupHeader (structural sequence number 01).

8. Column H – Multiplicity. The allowed frequency of occurrence of the element. Frequency is displayed as an open bracket **[**, followed by either a **0** or a **1** representing the minimum allowed number of occurrences, two dots **..** and either a **1**, or some other digit, or the lowercase letter **n** indicating the maximum number of occurrences, and a closed bracket **]**. For example - a value of [0..1] indicates a minimum of 0 and a maximum of 1 occurrences, a value of [1..1] indicates the element must occur once and only once, and a value of [1..n] indicates the element must occur once but can occur an unbounded number of times.

9. Column I – Type. The Type is the allowed data type for the element. Data types are as defined in the ISO 20022 standard. These data types correspond closely to the UN/CEFACT Core Component Data Types and the SAP Core Data Types. Date Types define the set of allowed values for the element.

10. Columns J through N – CGI Implementation Guide. Allowed values are as defined in the CGI Overview Tab of the spreadsheet and are repeated in Table 2.

Table 2 – CGI Attributes

| ATTRIBUTES | | | |
|---|---|---|---|
| **CODES** | **TERM** | **DEFINITIONS** | **EXPLANATION** |
| R | Required | Standard element for CGI; Required either by schema or CGI | This element is either mandatory in the schema or is a required by some or all of the CGI supporting banks. An "R" field may represent a piece of data that some of the banks do not need for processing, but have agreed that the client may send. Bilateral documentation should specify where an "R" field will be ignored by a specific bank. |

| ATTRIBUTES | | | |
|---|---|---|---|
| CODES | TERM | DEFINITIONS | EXPLANATION |
| C | Conditional | Standard element for CGI; Dependent upon a certain condition. | This element needs to be present when certain conditions apply. These fields are designated "C" with the condition specifically defined in the "RULES' column.  These conditions include:    -Presence based on a choice between elements or components     which are shown to be mandatory in the schema, such as the     choice between code and proprietary.     -Presence based on whether a data element or component exists     for that specific transaction, such as the presence of an ultimate     debtor or ultimate creditor for that transaction.     -Presence based on the requirements for a specific country and/or     payment instrument. |
| BD | Bilaterally Determined | Standard element for CGI. Contents are bilaterally determined between client and bank | This is an element that an individual bank or client may require. The need to populate it will vary.  For example, some banks may require the use of a branch identification code in countries where they have multiple branches and execute transactions through each of their branches.

Individual bank documentation should be consulted to determine when and how to populate a "BD" designated field. |
| XOR | eXclusive Or | Standard element for CGI.  Contents are XOR either by the schema or CGI usage. | Select one or the other field, but not both |
| NU | Not Used | Not Used by CGI | This element is not used by the CGI. The field may be present and will be ignored by receiving party of the message.  The data fields are 'hidden' for concise presentation of guide. |

a.  Column J – ACH Domestic & Int'l. An indication of the CGI usage requirement for the individual Message Item.

b.  Column K – Wires Domestic & Int'l. An indication of the CGI usage requirement for the individual Message Item.

c.  Column L – Checques/Drafts. An indication of the CGI usage requirement for the individual Message Item.

d. Column M – SEPA Customer to Bank ONLY. An indication of the CGI usage requirement for Single European Payments Area.

e. Column N – Rules. CGI business rules which further clarify how the Message Item is to be used.

11. Columns O and P – SAP Source and Field. Identifies the source of the SAP Field and the actual Field name. Each cell is color coded in accordance with the following table:

Table 3 – Explanation of color coding for columns P & Q.

| Color Coding for Columns P&Q in Mapping Spreadsheet | |
|---|---|
| Color Code | Explanation |
| | Data Tag is Tag Only to identify a parent element with one or more child elements. |
| | Data Tag not used |
| | The Mapping between the CGI Element and SAP Element is agreed to and validated through testing |
| | The Mapping as stated is partial support for the CGI Element and has been validated through testing |
| | The CGI Element is not as yet supported by the current SAP solution. This element may at some future time be supported - depending on customer requirements. In the interim, it should be treated the same as Customer Customization Required. |
| | SAP has no plans to directly support this CGI Element as there does not appear to be broad demand for its use. Individual customers who do require it in bilateral agreements with their bank for their value added services will need to develop a custom solution. |

Some additional special terms are included. These are explained in the following Table:

Table 4 – Special Terms

| Special Terms | |
|---|---|
| Atom | A single element can have sub-elements. These sub-elements can either be used to create a compound value for the parent element, or can represent possible nodes that depending on the condition populate the parent element. |
| Exit | The exit function allows the user to enhance/override the default settings. For example if there are bank specific settings allowed beyond the default settings provided for in the SAP solution for a bilaterally defined field, the user can use this to meet that requirement. |
| Type 1 | Note to payee |
| Type 2 | Short entry for note to payee, internal |
| Type 3 | short entry for note to payee, external |

a. Source Structure. Primary Source Structures are the three SAP Tables – FPAYH, FPAYHX, and FPAYP. Additionally, some items are derived from other sources, e.g. #EXIT, #CONST, #ATOMS, SYSTEM, DMEE_PAYD, CONSTANT.

    b.   Source Field. The source field from the identified source structure used to generate the Message Item.

12. Column Q – SAP Technical Comments. Technical comments related to SAP implementation. These clarify the actual use of the related source field.

13. Column R – General Comments. Comments defined during the mapping process which further clarify the actual use of the related source field.

## Country Specific Support

CGI has reviewed more than 100 country specific requirements for using the Credit Transfer Initiation message. Unless a country has been identified as having country specific requirements, use of the CGI base Credit Transfer Initiation message template should be straightforward. Countries for which no country specific requirements have been identified are listed in Table 5.

Table 5 – Countries for which no country specific requirements are known

| | | | | |
|---|---|---|---|---|
| Angola | Cayman Islands | Finland | Lithuania | St Vincents & the Grenadines |
| Albania | Columbia | French Guiana | Mauritius | Suriname |
| Anguilla | Costa Rica | Ghana | Mexico | Sweden |
| Antigua & Barbuda | Croatia | Greece | Montserrat | Switzerland |
| Aruba | Cuba | Grenada | Netherlands Antilles | Tanzania |
| *Australia* | Cyprus | Guatemala | Nicaragua | *The Netherlands* |
| Austria | Czech Republic | Guyana | Pakistan | Trinidad & Tobago |
| Azerbaijan | *Denmark* | Haiti | Panama | Turks & Caicos |
| Bahamas | Dominican Republic | Honduras | Paraguay | Uganda |
| Barbados | Dominica | Iceland | Peru | Uruguay |
| Belgium | Dominican Republic | India | Puerto Rico | Venezuela |
| Belize | Economic Community of East African States (CEMAC) - Angola, Burundi, Cameroon, Central Africa Republic, Chad, DR Congo, Equatorial Guinea, Gabon, Republic of the Congo, Rwanda | Ireland | South Africa | Vietnam |
| Bermuda | Ecuador | Italy | South Korea | Virgin Islands, British |
| Bolivia | Egypt | Jamaica | Sri Lanka | Virgin Islands, US |
| Bosnia Herzegovina | El Salvador | Jordan | St Barthelme | West Africa Economic & Monetary Union (WAEMU) countries: Benin, Burkina, Cote D'ovoire, Guinea |

| | | | | Bissau, Mali, Niger, Senegal, Togo |
|---|---|---|---|---|
| Botswana | Estonia | Kenya | St Kitts & Nevis | Zambia |
| Bulgaria | Falkland Islands (Malvinas) | Latvia | St Lucia | Zimbabwe |
| Canada | | | St Martin | |

Countries with known country specific requirements are listed in Table 6. For these countries, testing has already been completed or is underway or planned to validate functionality.

Table 6 – Countries with specific requirements

| Argentina | Brazil | Chile | *China* | France, Guadeloupe, Martinique |
|---|---|---|---|---|
| *Germany* | *Hong Kong* | Indonesia | *Japan* | *Malaysia* |
| Philippines | Russia | *SEPA* | *Singapore* | Spain |
| Taiwan | *Thailand* | *United Kingdom* | *United States* | |

Note – Countries highlighted in Bold Italic have already been tested, or have testing underway by SAP and/or the Banks
Note – Germany testing excludes Central Bank Reporting which will be in phase 2.
Note – Specific country mappings will be published in a separate article.

## Summary and Next Steps

SAP continues to work towards implementation of the remaining CGI transactions in partnership with the banks.  The banks continue to be engaged in this effort for reasons as best summarized by Deutsche Bank - "Deutsche Bank values this initiative with SAP as an important milestone in facilitating market usage of XML ISO 20022 globally. Being one of the core drivers of the CGI group since the beginning, Deutsche Bank is already CGI compliant, says David Watson, head of client access products for global transaction banking at Deutsche Bank. "Reducing the technical efforts for clients is one of the keys to drive standardization of corporate-to-bank connectivity, and making XML a real standard in practice." he emphasizes.

As the additional maps become available, the corresponding maps will be published in future articles.

## Related Content

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[Payment Medium Workbench](#)

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