BUSINESS JUSTIFICATION

FOR THE DEVELOPMENT OF NEW ISO 20022 FINANCIAL REPOSITORY ITEMS

*Note: the purpose of this document is to give guidelines to organisations that want to develop new candidate ISO 20022 models. Such requests are subject to the approval of a business justification by the ISO 20022 Registration Management Group (RMG). Please consult the iso20022.org website for additional details on the registration process. The business justification must include the following captions, as described. Business justifications are to be sent via e-mail to iso20022ra@iso20022.org*

A. **Name of the request:**

Real Time Payments

B. **Submitting organisation(s):**

Payments Council Limited – UK

C. **Scope of the new development:**

Real Time Payments allow for individual payments from personal customers, corporate customers and other financial institutions.  A payment is passed from the customer via the Sending Institution through the Central System to the Receiving Institution, which accepts or rejects it in Near Real Time (NRT). This process occurs in a matter of seconds. Because of this very ambitious timing it is necessary to put in place quite a different set of honed messages, that have very different requirements from those presently defined under the ISO20022 standard. Because the business and technical requirements placed upon the messaging standards necessary to operate a NRT payment messaging system are quite specific. So much so that it would be unrealistic to re-use existing ISO20022 messages without modify them extensively. Rather the requirements of this Business Justification will describe a specific category of payment messages in the ISO20022 repository for Real Time operation. That way these messages will be clearly differentiated from existing messages in the ISO20022 repository providing a clear and understandable message set distinct from what exists today.

Real Time Payments (RTPs) may be sent in a Synchronous or Asynchronous manner. Asynchronous payments make use of a dynamic buffer within the Central System that allows the receiver to take payments off their schedule at a slower pace than the sender is adding them. Such a buffer only ever occurs on transactions where the sender isn't present in person waiting on a NRT response. Payments where the sender is present waiting on a response, that is Single Immediate Payments, are always sent synchronously. So long as the receiver is able to take payments off the dynamic buffer at the same speed or indeed faster than the sender is putting new payments on, then the buffer collapses down to nothing and near real-time messaging occurs. –In the synchronous processing model there is no provision for store and forward; a payment that cannot be immediately delivered to the Receiving Institution is rejected. No queuing in the Central System takes place. The Central System itself is a message switch which processes single payments in Near Real Time (NRT) and manages the link with settlement via the central bank. The Receiving Institution may not be able to

process the volume of RTPs they have been sent and as a result, under the synchronous processing model, these would be rejected due to timeouts. The Asynchronous Processing model allows a Receiving Institution to process payments at a rate they can achieve by the Central System completing the Sending payment message flows (including all authorisations) with the Sending Institution before processing the Receiving message flows with the Receiving Institution. This maintains appropriate response times back to a Sending Institution when a Receiving Institution is unable to achieve the required throughput. The Asynchronous Processing model keeps the message flows, message formats and interfaces for Synchronous and Asynchronous processing as common as possible and RTP Types can be configured within the Central System to be processed either Synchronously or Asynchronously. The following message flow diagrams illustrate broadly the two types of payment flow.

Synchronous Payment
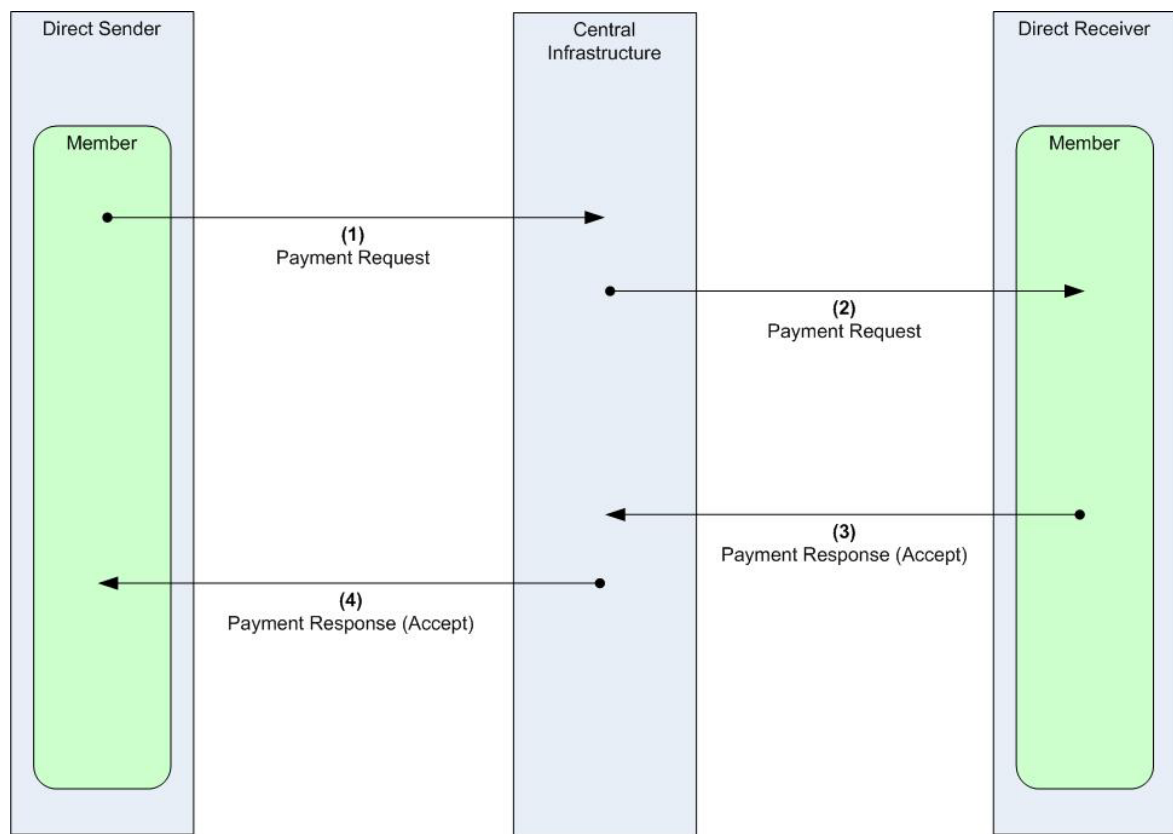


Asynchronous Payment
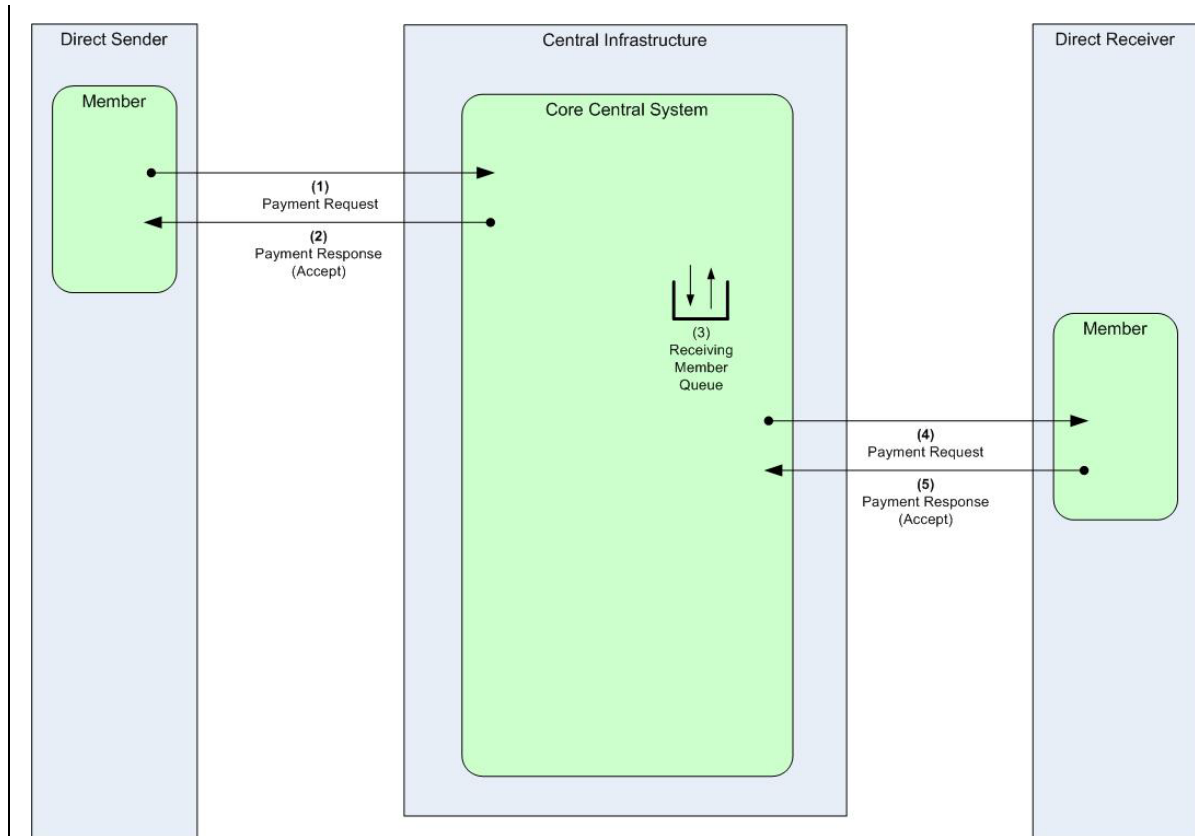
The following RTP Types are in scope of this submission:

Single Immediate Payments

Diarised Payments

Direct Access Corporate Bulk Payments

Return Payments

System Return Payments

These represent the core RTP messages but in order to establish the necessary detailed message flows to create a RTP system they will be complemented with a series of response, acknowledgement and status messages which facilitate the RTP process between the actors. These supporting messages are vital in forming a fully functioning real time messaging proposition around the core RTP messages as described. The nature of the RTP system is such that all these messages are very limited in size and business content. But combined they form a conversational exchange between the actors in the system where processing and response times are extremely time critical.

A **Single Immediate Payment** is a payment processed in Near Real Time (NRT).  It is usually submitted by the customer using either internet banking or other electronic means. In practice NRT means a response time of no more than a few seconds.  This response time is measured from the time the customer confirms the request for a payment, to the time when the Sending Institution's system receives a response from the Receiving Institution's system. The response indicates whether the payment has been accepted, conditionally accepted, or rejected.

A **Diarised Payment** is a payment that is set up in advance and may then occur regularly or only once. If regularly it is referred to as a Standing Order, if only once it is referred to as a Forward Dated payment. These payments are advised by the customer to their Sending Institution in advance, and submitted by the Sending Institution to the Central System on the due date.  The requirement for this type of payment, from a customer perspective, is that funds should be made available to the Beneficiary Customer, in principle, on the same day that the Sending Institution debits the Originating Customer and submits the payment to the Central System.

**Direct Access Corporate Bulk Payments** are payments submitted in file batches by Corporates or service providers on behalf of a Corporate directly to the Central System. Payments within a file are disaggregated and then processed in the same way as all other types of payments.

**Return Payments** may be sent when Receiving Institutions have accepted payments and subsequently, for any reason, determine that the funds should be returned to the Sending Institutions.  These payments are linked to the original payments, but are nonetheless payments in their own right, and settle in an identical way to all other such payments.

**System Return Payments** are created by the Central System in response to a rejection by a Receiving Institution of an Asynchronously Processed payment.  The Central System must generate a System Return Payment rather than passing the rejection back to the Sending Institution as the original payment will have already been accepted by the Central System and the appropriate settlement positions updated.  These payments are linked to the original payments, but are nonetheless payments in their own right, and affect settlement positions in the same way as other such payments.

It is proposed that the Payments Standards Evaluation Group(s) (SEG) should be assigned the evaluation task of the candidate ISO 20022 messages, once developed. It is expected that the submission will contain a suite of 25 messages, which will include the necessary response messages required to execute a RTP. The messages that will be submitted are payment messages and do not contain data related to card transactions.

An alternative syntax other than ISO 20022 XML is not required at this time.

D.  **Purpose of the new development:**

Payments Council has worked extensively with both banks and end users to agree a long term strategy for payment standards within the UK. Through consultation it has become well understood and supported that a number of high-level benefits exist in converging towards common international and open standards. This Business Justification heralds the first step for the UK in realising this vision by creating ISO 20022 messages to support Real Time Payments. This Business Justification has the full support of the Payments Council.

E.  **Community of users and benefits:**

Developing ISO 20022 Real Time Payment messages has many benefits. From an industry perspective the single most compelling case is that it facilitates convergence towards common international open standards, where harmonisation of bank systems processing payments is likely to offer substantial efficiency gains. It benefits end users by facilitating common payment initiation options in a single standard, especially relevant to the multi-

national corporate sector. It also complements the ISO 20022 proposition by introducing real time messaging options which at present do not exist and therefore represent a gap in the value proposition for the standard.

The key benefits are:

1. Benefits/savings: As stated above the central benefit is facilitating convergence towards common business models, business data and message standards. This will be of benefit to all actors in the financial supply chain and the potential savings from rationalisation intra industry is expected to run into tens of millions of euro. It is however difficult to give precise figures due to the complex multi-stakeholder environment.

2. Adoption scenario: The expectation is that phased migration will begin from 2015 onwards.

3. Volumes: The system at present is processing in the region of 400 million payments per annum between 13 member banks.

4. Sponsors and adopters include: Barclays Bank plc., Citibank N.A., Clydesdale Bank plc., The Co-operative Bank plc., Danske Bank, HSBC Bank plc, Lloyds Banking Group plc., The Royal Bank of Scotland plc., Santander UK plc., Northern Rock.

F. **Timing and development:**

- Development is required by no later than the end of 2011. Delay will jeopardise adoption and support;

- Payments Council expects to have the new candidate ISO 20022 business and message models developed and ready for submission to the ISO Registration Authority (RA) by Q1 2011;

- Payments Council will involve in the development process the institutions noted above, plus other stakeholders (including end users) through the usual Payments Council consultation processes;

- No other known standards initiative(s) are involved in an effort to address the same requirements.

G. **Commitments of the submitting organisation:**

Payments Council in the role of submitting organisation confirms that it can and will:

- undertake the development of the candidate ISO 20022 business models and message models that it will submit to the RA for compliance review and evaluation. The submission must include Business Process Diagram (activity diagram), Message Flow Diagram (sequence diagram) and Message Definition Diagram (class diagram), and;

- address any queries related to the description of the models and messages as published by the RA on the ISO 20022 website.

The submitting organisation must confirm that it will promptly inform the RA about any changes or more accurate information about the number of candidate messages and the timing of their submission to the RA.

Payments Council does not intend to organise any testing of the actual implementation of the messages once the related documentation has been published by the RA. The purpose is to ensure that the documentation of the messages is accurate and consistent and to verify that the approved messages can be implemented with no adverse effects on communication infrastructures and/or applications.

The submitting organisation must confirm whether it is committed to initiate and/or participate in the future message maintenance.

The submitting organisation must confirm its knowledge and acceptance of the ISO 20022 Intellectual Property Rights policy for contributing organisations, as follows.

*"Organizations that contribute information to be incorporated into the ISO 20022 Repository shall keep any Intellectual Property Rights (IPR) they have on this information. A contributing organization warrants that it has sufficient rights on the contributed information to have it published in the ISO 20022 Repository through the ISO 20022 Registration Authority in accordance with the rules set in ISO 20022. To ascertain a widespread, public and uniform use of the ISO 20022 Repository information, the contributing organization grants third parties a non-exclusive, royalty-free licence to use the published information".*

H.  **Contact persons:**

**James Whittle**

**Head of Standards**

**UK Payments Administration Ltd.**

**Mercury House**
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I.  **Comments from the RMG members and relevant SEG(s) and disposition of comments by the submitting organisation:**

This section will include the comments received from RMG members and the SEG(s), if any, and the response given to each of these comments by the submitting organisation.

- Why existing PAIN messages cannot be used rather than creating a new standard. (SEG)

  Response: Because of the nature of the Real Time payment messages is such that they are very small in size, both technically and from a business content point of view. The transmission of these small discrete messages between the actors in the process is more like a conversation that the bulk exchanges the industry may be most familiar with. That is there are numerous low latency message exchanges to complete a Real Time Payment. The current PAIN messages have a structure and contain a lot of data that is redundant within the Real Time Payment system. The choice to restrict the PAIN messages to the extent that would be required to satisfy the business requirements of the BJ does not seem practical as it will substantially alter the PAIN messages. Rather the submitter commits to reuse, following the ISO20022 process, as much common business information from the ISO20022 repository as possible. This will ensure as much alignment with existing PAIN and PAX messages as possible.

- Whether the messages under development will be coordinated with card payments standards since legacy card standards are its basis. (SEG) Response: The nature of ISO8583 allows for user defined messages. The basis of the existing Real Time Payment system is a set of just such user defined messages. The up shot of this is that although the ISO8583 standard is commonly used in the cards environment, that is not exclusively the case and not in this instance. The Real Time Payments messages will not use card related business data or structures and therefore is of no impact on the Card SEG. Please also note that the submitter has received no comments, or indication of interest from the Cards SEG who have also received the BJ for comment.

- Currently, many real-time payment systems process using SWIFTNet FIN Message Types (MT), e.g., MT 103 for customer payments and MT 202

for financial institution transfers. Some communities are discussing the future use of messages based on XML format and SWIFT is preparing a roadmap for the further move from such messages based on the current format (MT) to messages based on XML format (MX) for real-time payments. In order to ensure a smooth and successful implementation of a new international standard for real-time payments we propose to align the business justification on real-time payments with the discussions in the different communities (inter alia on the whole process) as well as with the work that is done by SWIFT asregards the roll-out of messages in XML format. (SEG)

Response: The submitter fully acknowledges that other systems and suppliers have developed, or are in the process of developing similar concepts. As explained in the Payments SEG we would welcome input from interested parties to the Evaluation process. If these stakeholders would like to get involved directly they are invited to contact The Payments Council so we can discuss their engagement in the construction and modeling of the Real Time Submission. However the Payments Council would stress that it has a business need to progress with the development according to the time frame set out in the BJ.

- The Business Justification seems to include some particular assumptions based on UK payments practices such as the definition of synchronous / asynchronous mode, the presence of queuing at the central system, giving authority to System Return Payments on the central system, direct corporate access, and procedure of forward dated payments especially release timing of funds. Are such practices global standards? (SEG)

Response: We believe that developing Real Time Payments is of value to the ISO20022 standard and in scope of the normal Submission and Evaluation process. What has been described in the BJ represents the conceptual explanation of the system. When constructing the ISO20022 business models it is our expectation that these will contain (at a minimum) the process flows and data necessary to establish the type of conceptual system the BJ describes. The Evaluation process will ensure this design, in a broader conceptual sense, is appropriate to the ISO20022 standard.

- The definition of Real Time Payment and Near Real Time seems to be the time from the message sent by the ordering institution to the time the message was accepted at the receiving bank. We doubt whether this definition could be a globally agreeable. In some markets, it could be the time of acceptance from an ordering customer to the real timeliness of the account of the beneficiary being credited. In Japan, the definition by practice has become "from the time the message being sent from the ordering institution to the time the funds were applied to the beneficiary account." (SEG)

Response: We would expect to refine these business process requirements as the submission passes through the ISO20022 evaluation process. The use of broader but inclusive terms at ISO which facilitate a range of business requirements would be acceptable to the Payments Council.

- Other than above comments, further clarification about the function of Central System may be needed, for example, to understand System Return Payments. Whether is it a payment switch, calculator of net position, or originator of book transfer of final settlement between central bank money accounts. (SEG)
Response: The Central System itself is a message switch which processes single payments in Near Real Time (NRT) and manages the link with settlement via the central bank.
- RTP is not an applicable term for asynchronous processes, store and forward (SAF) is in no way real time or even near time.(USA)
Response: This is a different use-case of the same RTP concept. An asynchronous payment makes use of a dynamic buffer within the Central System that allows the receiver to take payments off their schedule at a slower pace than the sender is adding them. Such a buffer only ever occurs on transactions where the sender isn't present in person waiting on a NRT response. Payments where the sender is present waiting on a response, that is Single Immediate Payments, are always sent synchronously. So long as the receiver is able to take payments off the dynamic buffer at the same speed or indeed faster than the sender is putting new payments on, then the buffer collapses down to nothing and near real-time messaging occurs. The concept is not quite that of traditional SAF, but it is accepted that Asynchronous payments may not occur within quite the same time parameters of a RTP.
- RTP presumes three entities, the Sending Institution, the Central System, and the Receiving Institution. This model is too simplistic, it must allow for multiple Intermediary Processors where the scenario of only one would be a Central System. (USA)
Response: We would expect to refine these concepts as the submission passes through the ISO20022 evaluation process. The use of broader defined terms (such as multiple intermediary processors) at ISO that also facilitate the business requirements of the Payments Council would be acceptable.
- RTP synchronous presumes an immediate delivery to the Receiving Institution however since the Central System is in between the Sender and Receiver the delivery status back to the Sender can only be from Central System. The model described is (again) too simplistic. (USA)
Response: The detail of the message follows, the actors and the roles those actors take as part in transacting a RTP will be developed as part of the detailed submission, what is contained in the BJ is a high level explanation of the flows.
- RTP synchronous needs to include reasonable timeouts when the delivery status is unknown, alternate processing for timed out requests, alternate processing for undelivered requests, and alternate processing for late responses (response received by the Sender after the request has timed out). These are realistic scenarios that must be addressed. (USA)
Response: Timeouts are a vital part of a RTP system. So important are these type of messages that they are currently called 'Response' messages because the viability of a payment, and how to 'back out' of it depends upon them, or where in fact their delivery has failed.

- RTP asynchronous is typically done in a batch mode however the it presumes that all of the Sender records are destined for the same Receiver.  Pragmatically the Central System may route requests from a single Sender to multiple Receivers such that the delivery and timing status of each individual batch record may differ.  This is a realistic scenario that must be addressed. (USA)
Response: The detail of the message follows, the actors and the roles those actors take as part in transacting a RTP will be developed as part of the detailed submission, what is contained in the BJ is a high level explanation of the flows. However in asynchronous operation the type of functionality as commented will be incorporated.
- Content: RTP asynchronous needs to include reasonable timeouts when the delivery status is unknown, alternate processing for timed out requests, alternate processing for undelivered requests, and alternate processing for late responses (response received by the Sender after the request has timed out) for each batch record.  These are realistic scenarios that must be addressed. (USA)
Response: Timeouts are a vital part of a RTP system. So important are these type of messages that they are currently called 'Response' messages because the viability of a payment, and how to 'back out' of it depends upon them, or where in fact their delivery has failed.
- RTP needs to address hybrid systems where the Sender used one mode (synchronous or asynchronous) and the Receiver uses another mode (asynchronous or synchronous) such that the Central System must convert between the two modes.  This is a realistic scenario that must addressed. (USA)
Response: The detail of the message follows, the actors and the roles those actors take as part in transacting a RTP will be developed as part of the detailed submission, what is contained in the BJ is a high level explanation of the flows. The incorporation of alternative scenarios at ISO which also facilitate the business requirements of the Payments Council would be acceptable
- The work item does not address any security aspects including integrity, authenticity or confidentiality.  These are realistic requirements for today's systems and must be addressed. (USA)
Response: It is recognized that security is a major consideration of any system. The scope of the BJ includes requirements to ensure accuracy, completeness, and reliability throughout the preparation, transmission and processing of data without error or unauthorised modification; all messages are authenticated.
- The existing PAIN and PACS messages cater for most of the required additonal information and instructions which are required to process real-time payments. In the existing PAIN and PACS messages the Return payments and System return payments are as well existing. (Swiss)
- Response: Because of the nature of the Real Time payment messages is such that they are very small in size, both technically and from a business content point of view. The transmission of these small discrete messages between the actors in the process is more like a conversation that the bulk exchanges the industry may be most familiar with. That is there are

numerous low latency message exchanges to complete a Real Time Payment. The current PAIN messages have a structure and contain a lot of data that is redundant within the Real Time Payment system. The choice to restrict the PAIN messages to the extent that would be required to satisfy the business requirements of the BJ does not seem practical as it will substantially alter the PAIN messages. Rather the submitter commits to reuse, following the ISO20022 process, as much common business information from the ISO20022 repository as possible. This will ensure as much alignment with existing PAIN and PAX messages as possible.

- We acknowledge that for diarised payments used a standing order a enhancement of the existing messages are necessary. (Swiss)
Response: Because of the nature of the Real Time Payment messages is that they are very small in size and business content and that the transmission of these between the actors in the process is more like a conversation than a bulk exchange. Modification of existing ISO20022 messages may not be appropriate. It is expected to reuse, following the ISO20022 process, as much common business information from the ISO20022 repository as possible.

- We think that the creation of a new set of 25 messages will add unnecessary complexity into the payment market as the difference between real-time payments and 'normal payments' is not obvious to the market participants. (Swiss)
Response: Using the ISO20022 process to develop specific Real Time Payments should avoid any confusion because these messages would be separate and distinct from existing ISO20022 payment messages and reusing as much common business information from the ISO20022 repository as possible. It is unclear what confusion the commenter feels would be caused by this BJ?

- As this BJ is quite complex, the analysis would be easier if the BJ would be completed by a detailed workflow. We would namely wish to better understand: (FR)
What would be the role of the different stakeholders within the payments and information delivery value chain;
-    The legal responsibility of the different banks
Response: The legal aspects of the payment system are not a factor in scope of the BJ or the ISO20022 process. Rather this is an implementation/operational matter. The Payments Council would be happy to discuss this with the commenter bilaterally.
-    What means "real time": is it real time information to the beneficiary customer or does it also include the accounting issues?
Response: A Real Time Payment as described in the BJ provides the basis to provide value to the beneficiary customer in Near Real Time. The system includes clearing and settlement distinct from other systems.
-    At what time the funds are available to the beneficiary's bank? And in this perspective, are there any intermediary banks in the value chain?
Response: This will depend upon the time at which the RTP was initiated relative to the next settlement cycle. Settlement currently takes place three times a day. However the processing of a RTP  by the receiving institution will occur within a maximum of 3.75 seconds.

- When are the funds effectively available to the beneficiary customer (i.e. at what time is this customer able to withdraw the funds from his account)?
Response: The funds will be on the account of the beneficiary in Near Real Time. When the customer will be able to withdraw the funds is a business decision of the receiving institution and will vary according to certain risk parameters.
- At which level of the value chain does "Direct… bulk payments" exactly apply (between the corporate client and his bank/banks? At which level are the bulk payments debundled in individual payment instructions?)
Response: Bulk submission is available between a corporate and a bank. Where bulk submissions are intended for multiple beneficiaries the bulk file is disaggregated and each 'push credit' is then treated as its own free standing item and delivered by the Central System to the requisite Receiving bank
- Concerning the ISO 20022 messages that would be necessary to fulfil UK BJ needs, we would like to raise the following questions:
- We understand that there may be 25 ISO 20022 messages but the BJ only describe a few of them: should we understand that some messages could be used several times or in different manners along the payments value chain?
Response: The BJ describes the RTP messages what is additionally required are a series of response, acknowledgement and status messages which facilitate the RTP process between the actors. These supporting messages are vital in forming a fully functioning real time messaging proposition around the core RTP messages as described.
- ISO 20022 messages already cover the End to end credit transfer value chain including the reporting. We would appreciate the UK BJ to specify which of the existing messages will be reused and if necessary completed. Does the submitter intend to create some subsets of the existing PAIN, PACS and CAMT messages? (FR)
- Response: Because of the nature of the Real Time payment messages is such that they are very small in size, both technically and from a business content point of view. The transmission of these small discrete messages between the actors in the process is more like a conversation that the bulk exchanges the industry may be most familiar with. That is there are numerous low latency message exchanges to complete a Real Time Payment. The current PAIN messages have a structure and contain a lot of data that is redundant within the Real Time Payment system. The choice to restrict the PAIN messages to the extent that would be required to satisfy the business requirements of the BJ does not seem practical as it will substantially alter the PAIN messages. Rather the submitter commits to reuse, following the ISO20022 process, as much common business information from the ISO20022 repository as possible. This will ensure as much alignment with existing PAIN and PAX messages as possible.
- Finally and in order to authorize the submitter in explaining all these complex matters, we suggest to delay the normal comments deadline in order for the submitter to benefit from the RMG 20022 Tokyo's meeting where it would be easier to organize a face to face meeting or rather to

present to all interested parties with full details and answers on all the points raised instead of the usual conference call. (FR)
Responses: The Payments Council is open to discussion of the BJ with any interested parties but due to business reasons would like to continue to seek approval using the normal ISO20022 process and timescale.

- The scope of the messages proposed for development seems at first very close to that of existing ISO20022 messages in the payment area. If the latter are not fully in line with the requirements of the submitters, we feel that the possibilities for adjustments of these messages should be thoroughly investigated, prior to deciding to augment the ISO20022 catalogue with a new line of messages very close in scope to the existing ones. Sound reassurance that all existing messages had been thoroughly examined prior to deciding on a fully new development could not be found in the document. We therefore kindly invite the submitter to further elaborate on the gaps in the existing catalogue of payment messages that have led them to submit the present business justification. (ECB)
Response: Because of the nature of the Real Time payment messages is such that they are very small in size, both technically and from a business content point of view. The transmission of these small discrete messages between the actors in the process is more like a conversation that the bulk exchanges the industry may be most familiar with. That is there are numerous low latency message exchanges to complete a Real Time Payment. The current PAIN messages have a structure and contain a lot of data that is redundant within the Real Time Payment system. The choice to restrict the PAIN messages to the extent that would be required to satisfy the business requirements of the BJ does not seem practical as it will substantially alter the PAIN messages. Rather the submitter commits to reuse, following the ISO20022 process, as much common business information from the ISO20022 repository as possible. This will ensure as much alignment with existing PAIN and PAX messages as possible.