Business Requirements Specification
For the
Capacity Allocation Mechanism (CAM)
Network Code

Draft Version 0 Revision 05 – 2012-10-05

Not for implementation

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1 Objective

The Capacity Allocation Mechanism (CAM) Network Code (NC) sets forth provisions regarding capacity allocation mechanisms. It defines a standardised capacity allocation mechanism in the form of an auction procedure for relevant Interconnection Points within Europe, including the underlying Standard Capacity Products to be offered and the description of how cross-border capacity is to be allocated.

It also defines how adjacent Transmission System Operators cooperate in order to facilitate capacity sales, taking into consideration general commercial as well as technical rules related to capacity allocation mechanisms.

This document defines the business requirements that are necessary for a harmonised implementation of the Network Code.

2 Scope

This document outlines the external business requirements that are necessary in order to ensure a harmonised transmission of information between parties participating in the capacity allocation mechanism. It is intended for use by parties involved in such implementation. In particular, it forms a specification to enable EASEE-gas to produce documentation that can be approved and published.

The defined information interchange respects the requirements outlined in the CAM NC for the allocation of primary capacity without influencing the internal operation of the market participants' information systems.

The BRS does not cover the following subjects, which are referred to in the CAM NC but are not essential for the allocation of primary capacity:

- Co-ordination of maintenance information
- Secondary market/capacity rights transfer
- Nominations against capacity rights
- Buy-back of oversold capacity
- Capacity surrender

This Business Requirements Specification (BRS) covers only those requirements that are essential for the harmonised implementation of auctions for primary capacity as specified in the CAM NC. The requirements are therefore **necessary but not sufficient** for the implementation of a fully functioning capacity allocation system. Parties implementing such a system will need to consider aspects such as validation of user registration, audit, security and confidentiality which are not covered by the CAM NC and so are not referenced in this document. Similarly, this document does not deal with volumetrics.

This Business Requirements Specification (BRS) is targeted towards business-to-business application interfaces. However, it may be equally put into place in a more user-orientated fashion through a web-based service.

106 This document does not define a governance process for attribute definitions or other
107 requirements. Such a process will need to be determined and defined elsewhere.

108 The requirements set out in this document are subject to change if there is any change in the
109 obligations on transmission system operators or any other relevant party.

3 Business requirements

This section describes in detail the business requirements that the information flows are intended to satisfy.

3.1 CAM network code requirements

This section outlines the overall business process behaviour of the system without going into the detailed internal workings of each entity. It defines the external requirements of the business process: the relationships between the entities concerned.

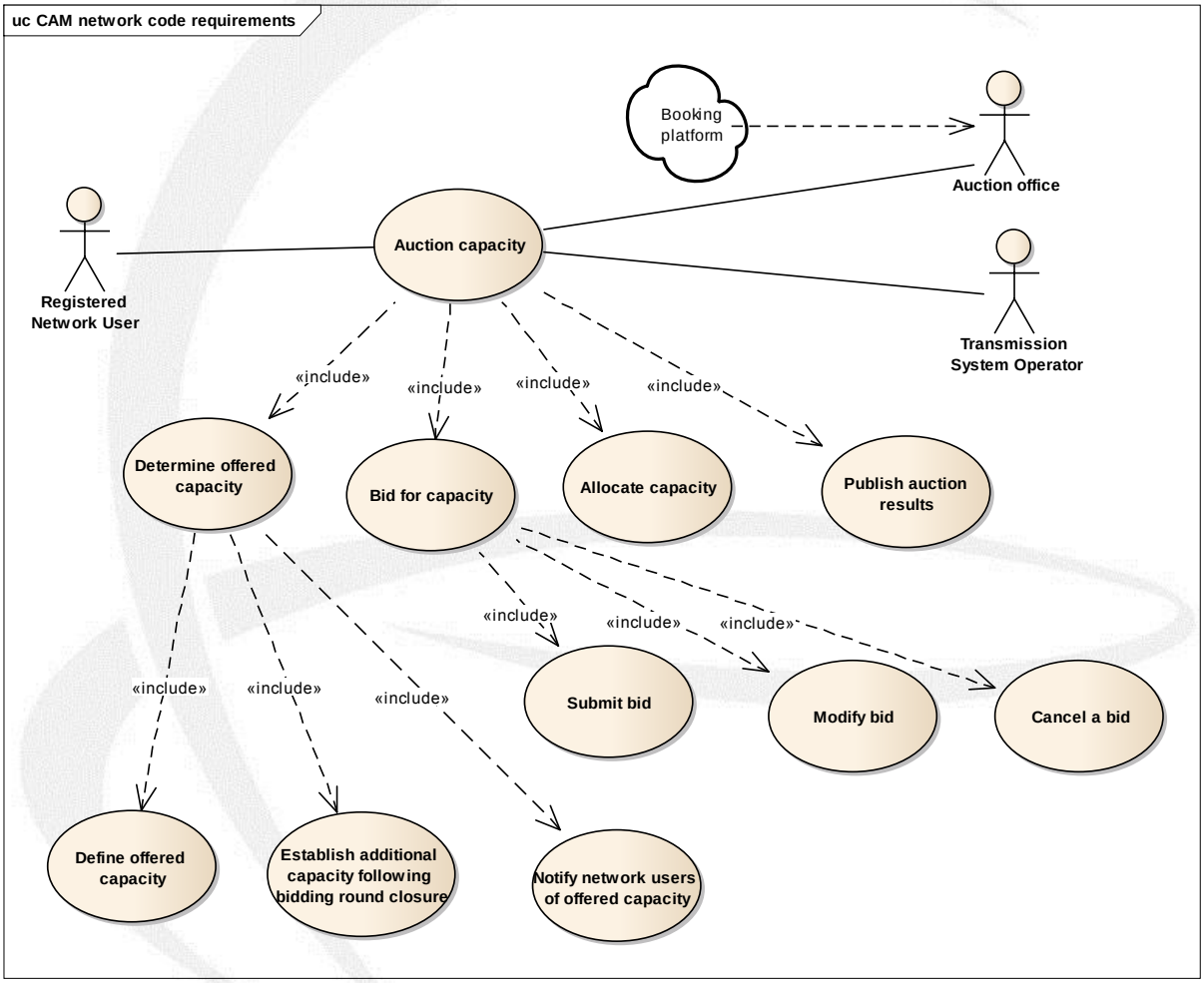

Figure 1: overview of the CAM process use case

3.1.1 List of actors

3.1.1.1 Auction office

The party that is responsible for the reception of bids and for the allocation of capacity as well as for the management of the booking platform, acting on behalf of Transmission

System Operators. One of the involved Trensmission System Operators may be designated as the Auction office.

3.1.1.2 Registered Network User

A network user that has acceded to and is compliant with all applicable legal and contractual requirements that enable him/her to book and use capacity on the relevant Transmission System Operator's network under a capacity contract.

3.1.1.3 Transmission System Operator

A natural or legal person who carries out the function of transmission and is responsible for operating, ensuring the maintenance of, and, if necessary, developing the transmission system in a given area, and, where applicable, its interconnections with other systems. It is also responsible for ensuring the long term ability of the system to meet reasonable demands for the transportation of gas.

3.1.1.4 Booking platform

A web based application that implements the rules and processes for offering and allocation of all capacity and permits registered network users to offer and obtain secondary capacity.

It is managed by an Auction Office.

3.2 Use case detail

3.2.1 Auction capacity

This use case permits the auction and allocation of capacity at an interconnection point using an "ascending clock" or "uniform price" auction technique, as described in sections 4.10 and 4.11 of the CAM NC, respectively.

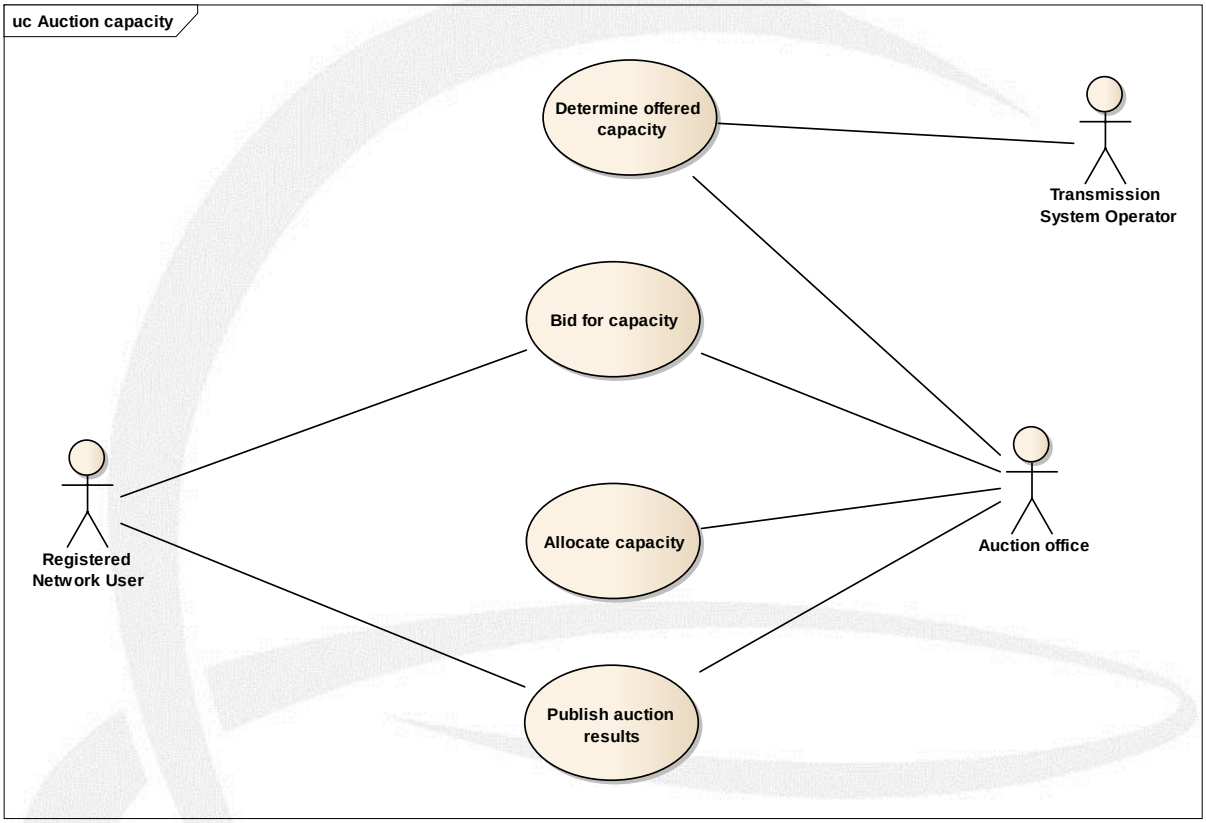

Figure 2: the auction capacity use case

Figure 2 outlines the relations that exist between each of the use cases and the actors.

3.2.1.1 Determine offered capacity

Determine the capacity that is presented to the market for auction.

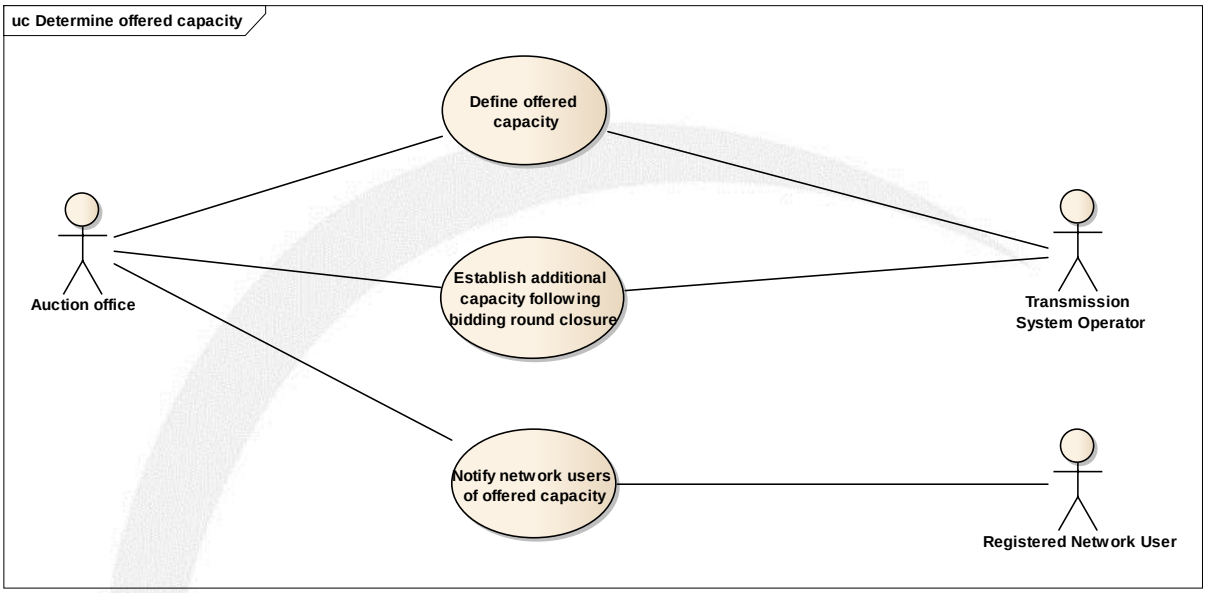

Figure 3: Determine offered capacity use case

3.2.1.1.1 Define offered capacity

Apply an approved technical capacity calculation taking into consideration any planned or unplanned maintenance, reserved quotas, previously sold capacity and surrendered capacity.

Determine the amount of additional capacity that can be offered with reference to the risk/reward profile created by the relevant over-subscription and buyback scheme.

Agree between Transmission System Operators the bundled capacity offer for each product comprising technical and additional capacity.

Any differences of capacity between Transmission System Operators shall be considered as unbundled capacity and will be auctioned separately. Such unbundled capacity will be clearly identified by TSOs to the Auction Office and by the Booking Platform to Registered Network Users at the time the capacity is offered.

3.2.1.1.2 Establish additional capacity following bidding round closure

In the case of over-subscription of the bids against the offered capacity at the reserve price a Transmission System Operator may decide to introduce additional capacity. In an auction for bundled capacity this must be carried out in agreement with the counterpart Transmission System Operator.

3.2.1.1.3 Notify network users of offered capacity

The Registered Network Users are notified of the resulting offered capacity prior to the auction.

The Registered Network Users are also informed of the reserve price and, in the case of ascending clock auctions, the price for the bidding round.

3.2.1.2 Bid for capacity

For a given auction (in which one capacity product covering a specific period is offered) Registered Network Users submit bids with the amount of capacity required (for the price step announced in the concerned bidding round in the case of an ascending clock auction) and, in the case of uniform price auctions, the price they are willing to pay. They may also indicate the minimum capacity that is acceptable in the case of a reduced allocation.

In the case of an ascending clock auction, the CAM NC does not specify a maximum number of bids per Registered Network User (although the maximum volume bid in any Bidding Round per Registered Network shall be equal or smaller to the offer of capacity in a specific round); all valid bids are added together to give the total capacity demanded per user in that bidding round. In the case of a uniform price auction, a maximum of 10 bids may be entered per Registered Network User per auction.

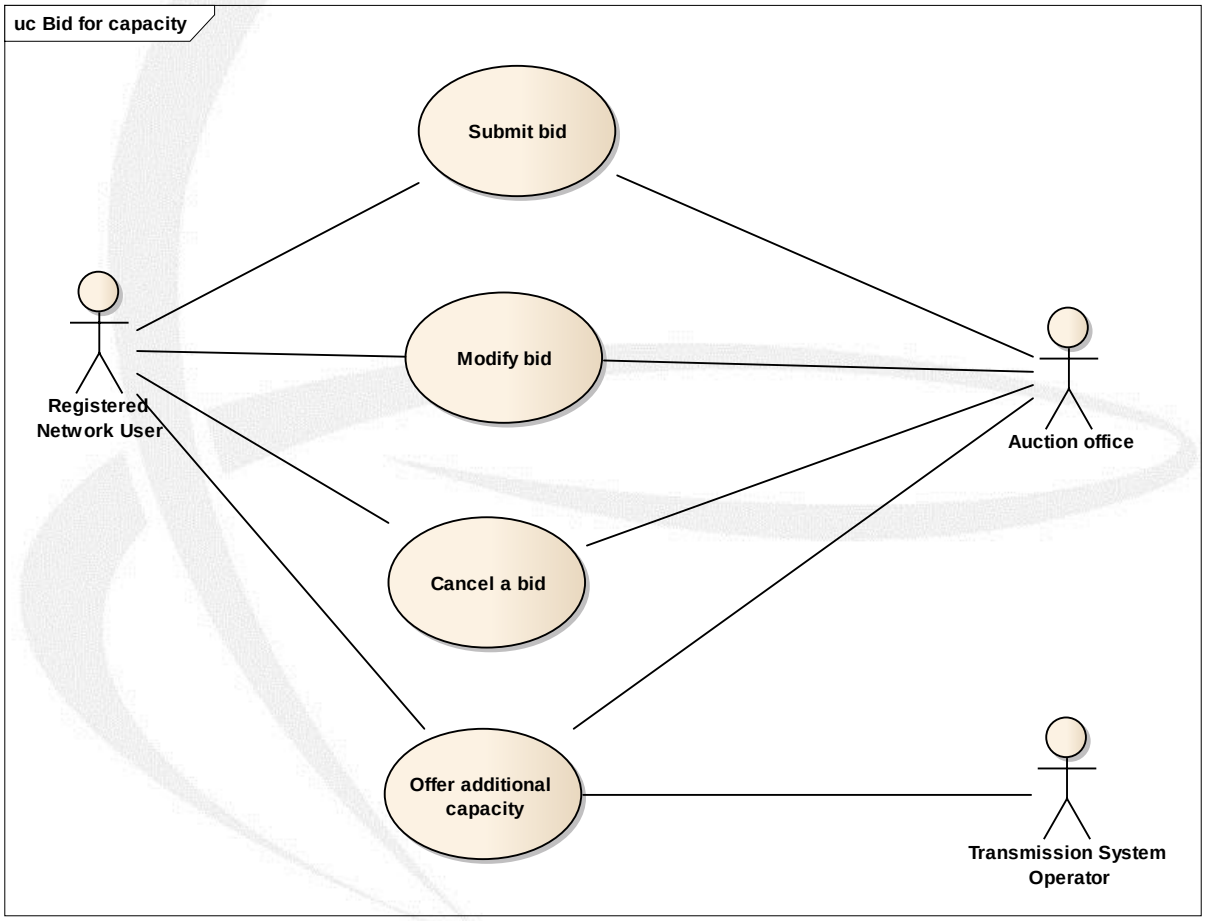

Figure 4: bid for capacity use case

3.2.1.2.1 Submit bid

The Registered Network User submits bids for an amount of capacity for the price step announced in the concerned bidding round, in the case of an ascending clock auction, or an

amount of capacity and price, in the case of a uniform price auction. Each bid shall refer to a given product within a given auction. In an ascending clock auction, such bids shall respect the rules on bid quantities set out in sections 4.10 5), 4.10 8) and 4.10 16) of the CAM NC.

3.2.1.2.2 Modify bid

As long as the bidding round is open, a Registered Network User may modify the amount of capacity and (where relevant) the price associated with that bid.

3.2.1.2.3 Cancel a bid

The Registered Network User may at any time during a bidding round cancel a bid placed earlier in that round, which will then no longer be available for modification during future bidding.

3.2.1.2.4 Offer additional capacity

In a uniform price auction, in the case of over-subscription of the bids against the offered capacity at the reserve price a Transmission System Operator may decide to introduce additional capacity. In an auction for bundled capacity this must be carried out in agreement with the counterpart Transmission System Operator.

3.2.1.3 Allocate capacity

The capacity is allocated respecting market rules, as set out in articles 4.10 20) (in an ascending clock auction) and 4.11 6) - 4.11 10) (in a uniform price auction) of the CAM NC, and the bids that have been submitted.

3.2.1.4 Publish auction results

Registered Network Users are informed by the Auction Office of the results of the bids that they have submitted.

The Auction Office informs the market of the final aggregated auction information.

The Auction Office provides the Transmission System Operators with the detailed auction results.

3.3 Information flow definition

3.3.1 CAM Sequence flow

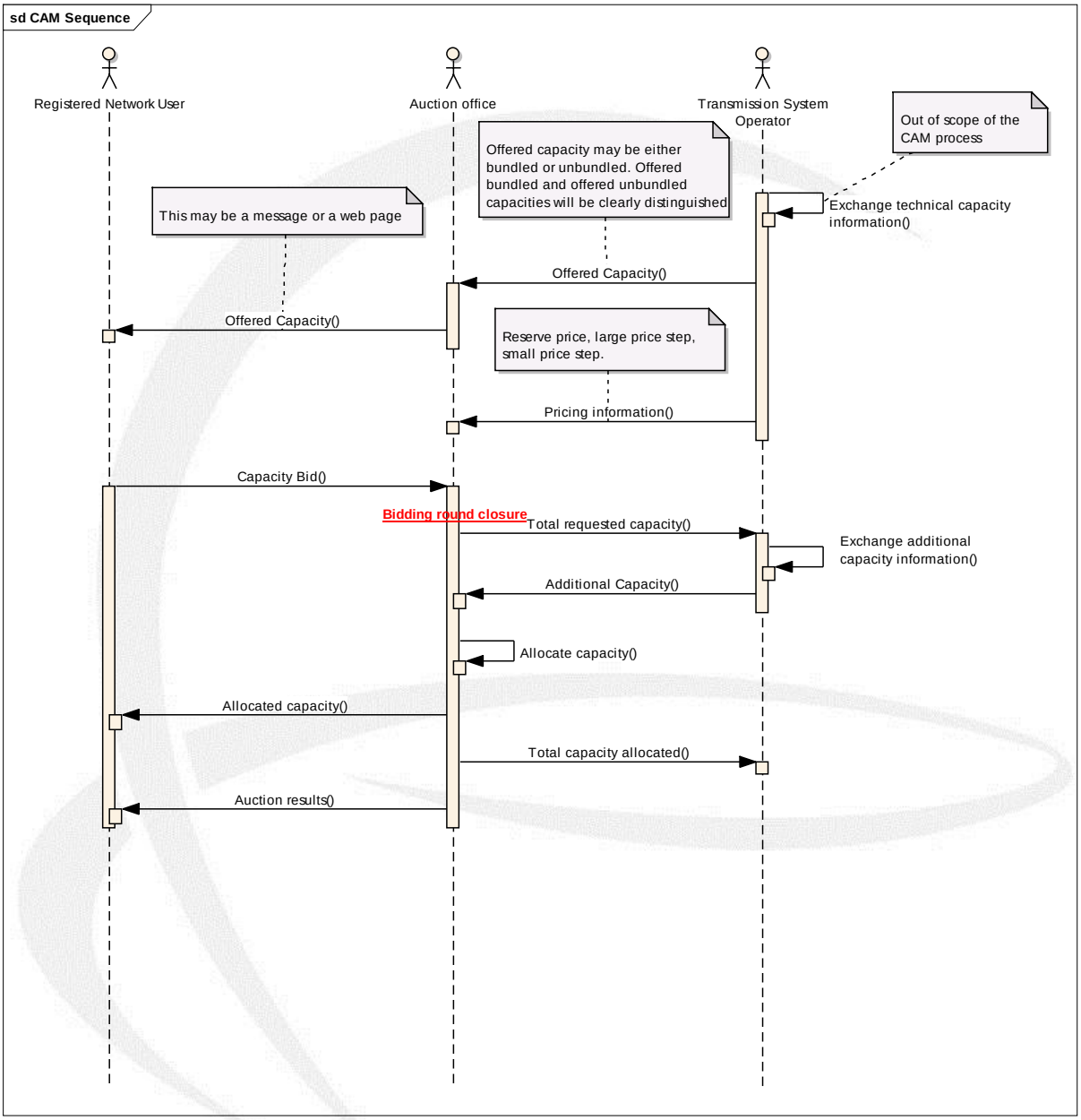

Figure 5: Information flow sequence

3.3.1.1 Offered capacity

3.3.1.1.1 Case 1: Transmission System Operator to Auction Office

The bundled capacity on offer may be sent by one or both Transmission System Operators to the Auction Office. In the case that both Transmission System Operators send the bundled capacity and there is a mismatch, the Auction Office, together with the Transmission System

Operators, has to agree on how the information is to be treated. For unbundled capacity each Transmission System Operator may send the information independently. The Auction office will allow the offer of unbundled capacity only where this capacity results from a mismatch in available capacity at the two sides of an interconnection point.

3.3.1.1.2 Case 2: Auction Office to Registered Network User

The Auction Office assigns an auction identification to the offered capacity provided by the Transmission System Operators and publishes the information for use by the Registered Network Users.

3.3.1.2 Capacity bid

Registered Network Users submit bids in accordance with the type of auction being run. Before a uniform price auction or an ascending clock bidding round closes they may submit modifications to their bids or cancel the bid completely.

3.3.1.3 Total requested capacity

The total requested capacity is provided by the Auction Office to indicate all the bids that have been received in the auction.

3.3.1.4 Additional capacity

In the case of a uniform price auction, once the bidding round has closed the Transmission System Operator may determine from the total requested capacity that there is additional capacity available to cover any excess demand.

3.3.1.5 Allocated capacity

The Auction Office allocates a part of the offered capacity to a Registered Network User's bid and informs the Registered Network User of the quantity and price allocated.

3.3.1.6 Total capacity allocated

Once the capacity allocation has terminated the Auction Office transmits all the Registered Network User allocations to the Transmission System Operator.

3.3.1.7 Auction results

This represents the total aggregated values for the auction (at least the clearing price and total capacity sold) and is intended for use by any market participant.

3.3.2 CAM Workflow

3.3.2.1 General Acknowledgement process

3.3.2.1.1 Business process definition

The acknowledgment business process is generic and can be used in all the energy market business processes at two levels:

- System level: To detect syntax errors (XML parsing errors, etc.);
- Application level: To detect semantic errors (invalid data, wrong process, etc.).

If there is a problem encountered at the first level, then a technical acknowledgement may be sent to inform the originator of the problem.

If errors are encountered at the second level or if the application can successfully process the information, then an application acknowledgement may be sent to inform the originator of the situation.

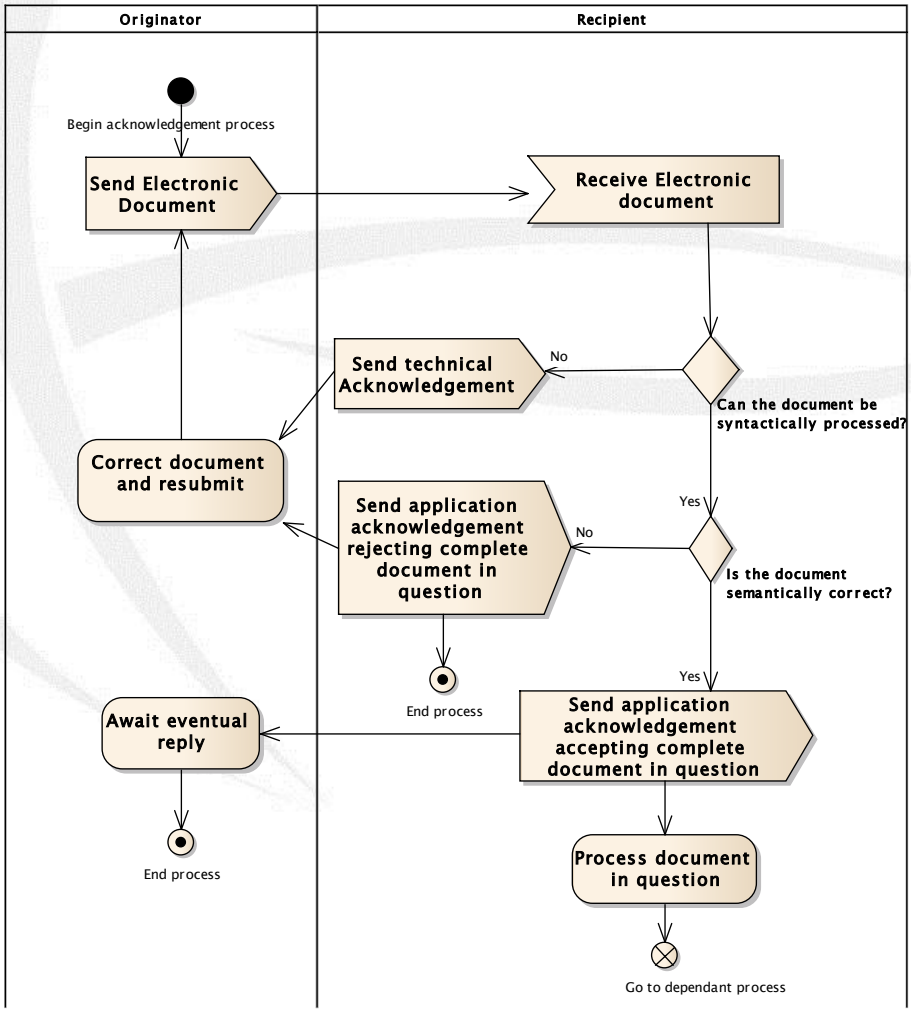

Figure 6 – Acknowledgement process

3.3.2.1.1.1 Technical acknowledgment

A technical acknowledgement occurs when an XML document is received that cannot be correctly processed for submission to the application. Such an error could occur for example whenever the XML parser cannot correctly parse the incoming document. Other instances could be the incapacity to correctly identify the originator of the document in relation to the process requested.

In such a case a technical acknowledgement can be sent to the document originator providing the information that the XML document in question cannot be correctly processed by the system.

3.3.2.1.1.2 Application acknowledgment

Within each business process of the gas market, business rules are to be defined stating whether or not an application acknowledgment is to be sent upon reception of an electronic document.

In particular, where the originator is in the role of a Transmission System Operator and the recipient is in a "market participant" type role, all electronic documents sent by entities in the role of a Transmission System Operator shall be considered as received and correct, and the acknowledgement process is not required unless an acknowledgment document is required for a specific purpose.

Otherwise, upon reception, checks are to be carried out at the application level to assess that the received document can be correctly processed by the application. The originator is informed that:

- Its document, that is stated as valid after this verification, is ready to be processed by the reception of an acknowledgement document accepting the complete document in question;
- Its document is rejected for processing by the reception of an acknowledgement document rejecting the complete document in question with details on the level of errors.

3.3.2.2 Offered capacity process

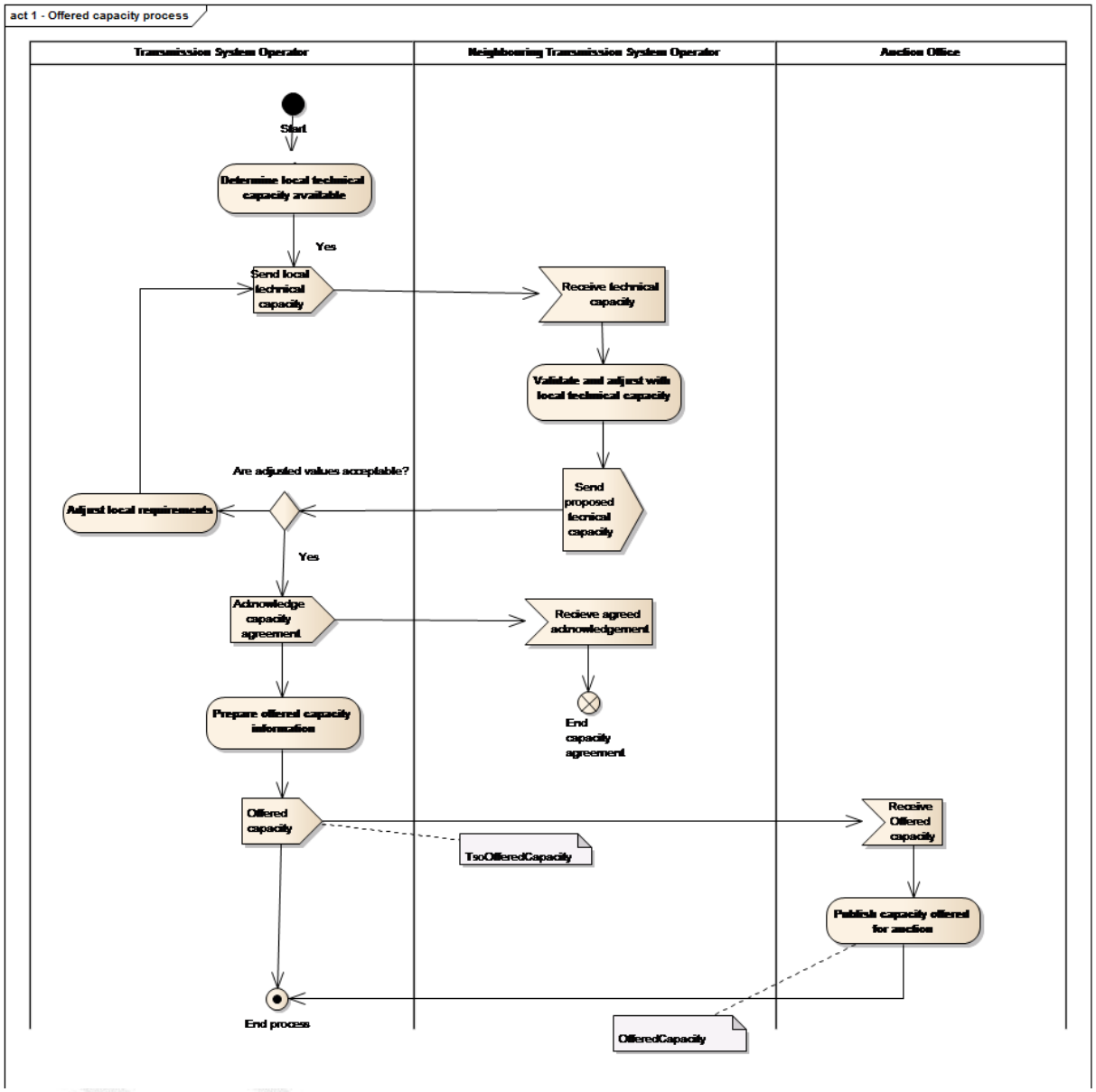

Figure 7: Offered capacity workflow

The determination of offered capacity begins on a cyclic basis depending on the standard capacity product. There are 4 components in the constitution of offered capacity:

1. The technical capacity after establishment of the maintenance requirements and deduction for capacity reservation;
2. The offered capacity that has previously been sold;
3. The capacity that has been surrendered for resale;
4. Any additional capacity that can eventually put on the market.

Each Transmission System Operator calculates the technical capacity; with the integration of the surrendered capacity, capacity reserved and capacity already sold, the available offered capacity can be established.

Each Transmission System Operator exchanges this information with the neighbouring Transmission System Operators and the bundled and unbundled capacities can be agreed upon. At this stage additional capacity can be introduced by a Transmission System Operator as required.

Once the bundled and unbundled offered capacity is agreed upon, one of the Transmission System Operators is designated to inform the Auction Office of the offered bundled capacity that is available for auction in the market.

In some cases each Transmission System Operator may send the offered capacity to the Auction Office. However, in this case the Transmission System Operators will need to agree on the actions that an Auction Office will have to carry out in the case of divergence between the bundled capacity figures.

The Auction Office then makes this information available to the market in the appropriate manner (web publication, download capability, etc..).

319 ### 3.3.2.3 Auction process

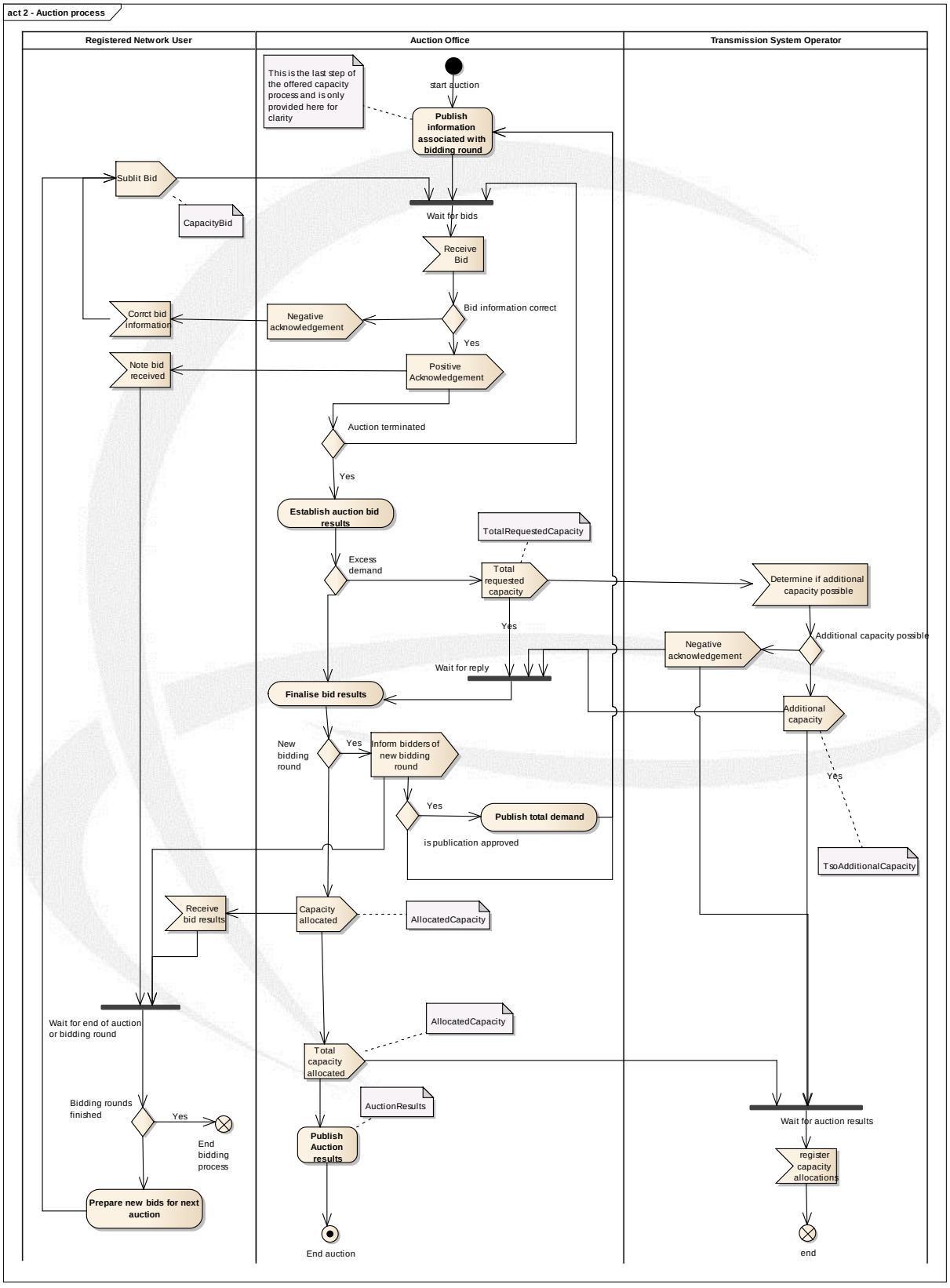

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Figure 8: Auction workflow

Once the Auction Office has published the offered capacity to be auctioned, and the auction has opened, the Registered Network User may submit bids to the Auction Office.

The Auction Office validates each bid and informs the bid submitter of the outcome of the validation process. In the case of a rejection, the Registered Network User corrects the bid information and resubmits it to the Auction Office.

In the case of the bid being successfully validated the Registered Network User awaits the outcome of the auction. However, during the bidding round it is possible for the Registered Network User to submit additional bids, to make modifications to existing bids and to cancel an existing bid.

The Auction Office manages the bids received and any changes provided until the bidding round closes.

Once the bidding round closes, the Auction Office determines the situation between the capacity requested and the capacity offered. In the case where the capacity requested is superior to the capacity offered at the reserve price the Auction Office may provide a consolidated report to the Transmission System Operators. With the information provided the Transmission System Operators may determine that it is possible to provide additional capacity to help alleviate the excess demand.

If, in the case of an ascending clock auction, there is a situation of excess demand the Auction Office initiates another bidding round with a new price step.

Prior to beginning the new bidding round, the Registered Network Users that participated in the previous bidding round are informed that a new bidding round will take place with a new price step. In addition information on the previous bidding round may be published if this is approved by the Transmission System Operators.

At the closure of the auction and bidding rounds, the Auction Office then allocates the capacity respecting market rules and informs each Registered Network User of the outcome of the bids submitted.

The Auction Office also provides the complete list of allocations to the Transmission System Operators.

In a final step the Auction Office publishes the results of the auction.

3.4 Information model requirements

The following information requirements have been identified as the essential business information that needs to be catered for in the relevant information exchanges.

3.5 Definitions of the attributes used in all the models

Definitions originating from the CAM NC will be reviewed as soon as the document has been finalized.

Name	Description
AllocationIdentification	The identification of the contractual reference under which the capacity was assigned.
AuctionIdentification	The identification of the auction where the capacity rights were offered. In ascending clock auctions this is a unique identification for each bidding round.
AvailabilityType	The identification of the type of availability of the capacity. (e.g. firm or interruptible)
BiddingRound	The identification of the auction round where the capacity rights were allocated in an ascending clock auction.
BiddingRoundPrice	The price that has been established for a given bidding round
BidIdentification	The identification of the bid submitted by the Registered Network User
BidPrice	The price bid for the capacity requested. The price bid may be either a fixed or a floating amount depending on the tariff arrangements in place.
CapacityAmount	The constant amount of capacity specified for the period.
CapacityAmountAllocated	The amount of capacity allocated to a bid.
CapacityAmountSold	The amount of capacity rights that have been sold in an auction, aggregated across all Registered Network Users.
CapacityAmountUnsold	The amount of capacity rights that have not been able to be sold in an auction.
CapacityType	Identification of way in which the capacity rights have been

	packaged (i.e. Bundled, unbundled).
ClearingPrice	The price that successful registered network users shall pay at a specific auction. It is determined as set out in sections 4.10 19) (in an ascending clock auction) and 4.11 11) (in a uniform price auction) of the CAM NC.
FlowDirection	The identification of the exit network and the entry network.
InterConnectionPoint	A cross-border interconnection point, whether it is physical or virtual, between two or more Member States as well as interconnection between adjacent entry-exit-systems within the same Member States, in so far as these points are subject to booking procedures by Registered Network Users (origin: CAM NC)
MinimumCapacityAmount	The Minimum Amount of Capacity for the respective Standard Capacity Product which the Registered Network User is willing to be assigned. (origin: CAM NC)
Period	The period covered for the capacity amount in question.
PriceSteps	The identification of a series of monetary amounts are used in a progressive manner in ascending clock auction bidding rounds to determine the auction price. Both a large price step and a small price step shall be defined for each auction.
RegisteredNetworkUser	A network user that has acceded to and is compliant with all applicable legal and contractual requirements that enable him/her to book and use capacity on the relevant transmission system operators' network under a Capacity Contract (origin: CAM NC)
ReservePrice	The minimum eligible floor price in the auction, being equal to the Regulated Tariff. (origin: CAM NC)
StandardCapacityProductType	the duration of the standard capacity product: yearly, quarterly, monthly, daily or within-day
UnitOfMeasure	The unit of measure in which the capacity amount is expressed.
UnitOfPrice	The currency unit in which the price is expressed

3.6 Requirements per process

3.6.1 Offered capacity process

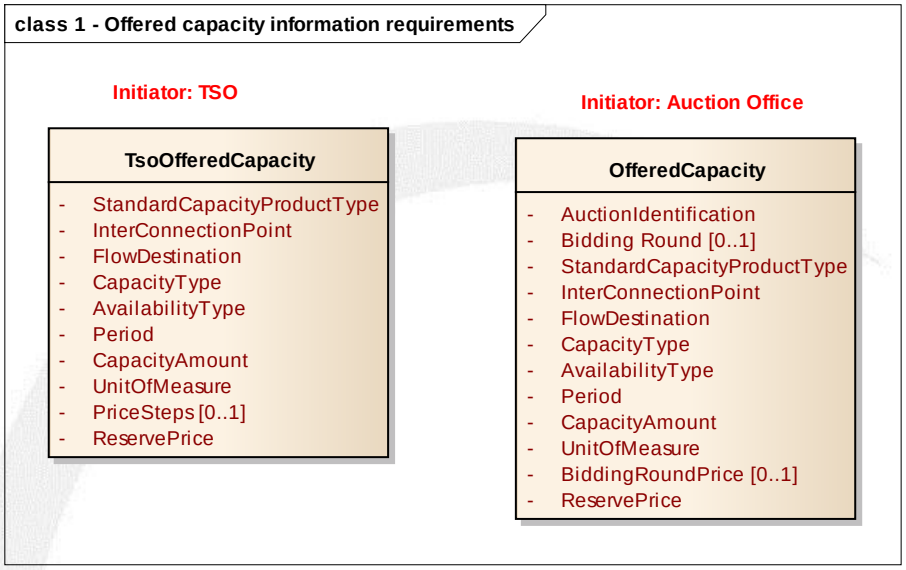

Figure 9: offered capacity process information requirements

Note 1: wherever the indication [0..1] appears against an attribute this signifies that the attribute in question is optional. For example, the attribute “PriceSteps [0..1]” is not used in the case of uniform price auctions.

Note 2: The information outlined in the class diagram does not represent any structural constraints. It only represents the information requirements for a given information flow.

3.6.2 Auction process

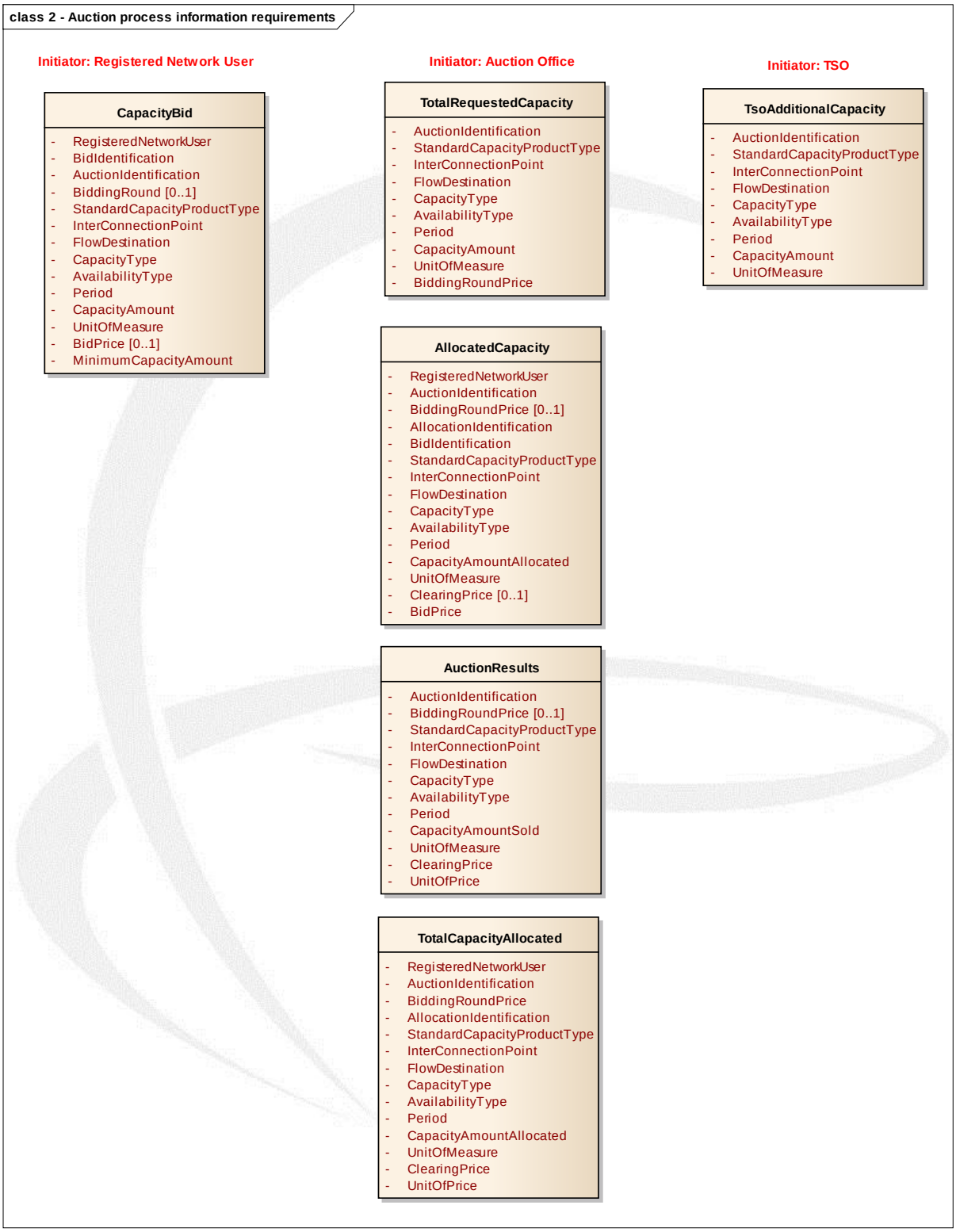

Figure 10: Auction process information requirements

3.7 Business rules

The diagram below shows the key business rules set out in the CAM network code that apply to the allocation of capacity via auctions. The exact timings for each auction will be set out in an auction calendar published annually by ENTSOG.

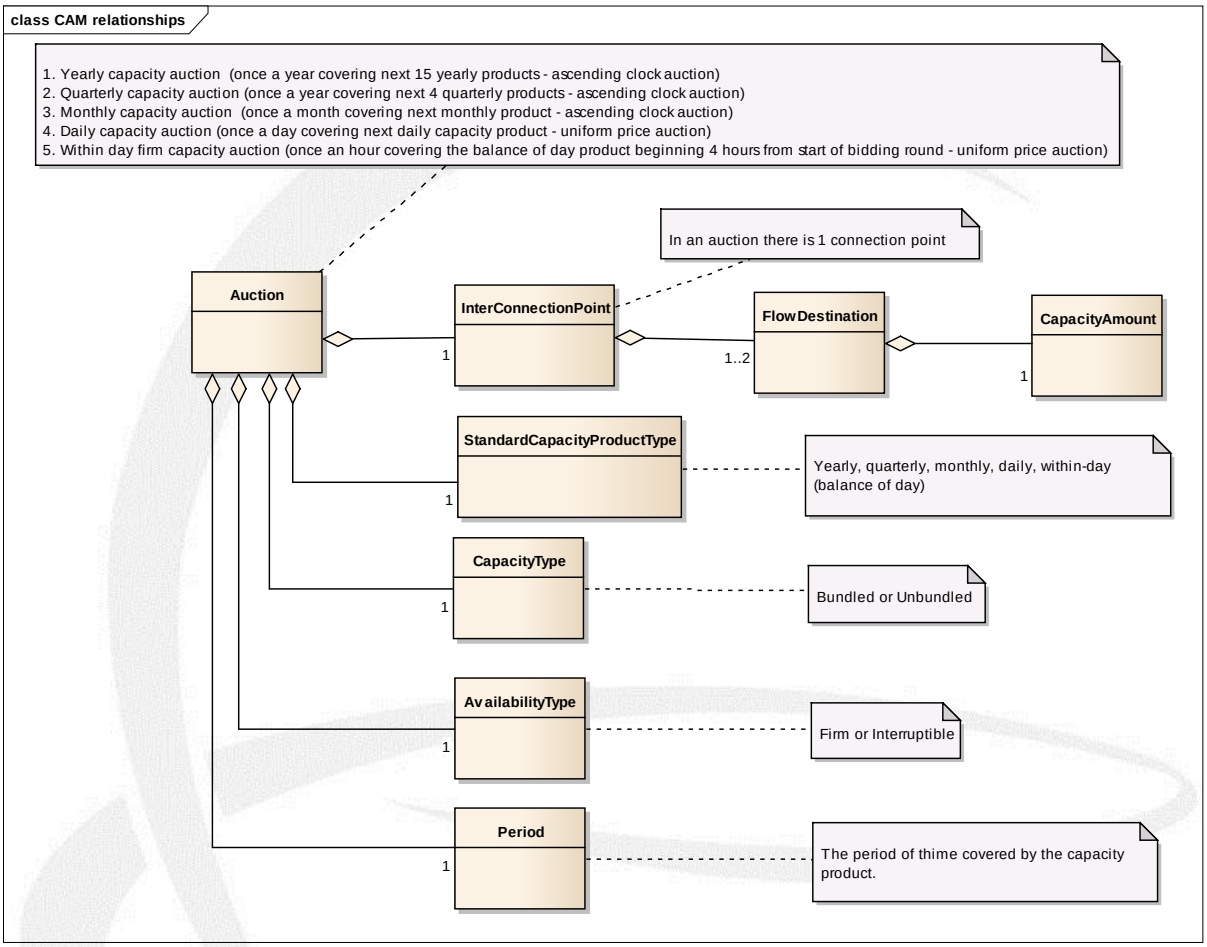

Figure 11: Basic business information constraints

3.8 Definition of terms

Uniform price auction: an auction in which the Registered Network User freely bids price as well as quantity and all Registered Network Users, who are successful in gaining capacity, pay the price of the lowest successful bid.

Ascending clock auction: an auction in which a Registered Network User places requested quantities against defined price steps, which are announced sequentially.