			Revision history for the Harmonised Role Model
ebIX	entsoe	EFET European Federation of Energy Traders	
May 22nd 2019			

Content

1   Changes in version 2019-01

Date: 2019-05-22

1.1   Changes to Roles

1. Update of definition of Coordination Center Operator:

    ~~Responsible for:~~

    ~~1. The coordination of exchange programs between its related Control Blocks and for the exchanges between its associated Coordination Center Zones.~~
    ~~2. Ensuring that its Control Blocks respect their obligations in respect to load frequency control.~~
    ~~3. Calculating the time deviation in cooperation with the associated coordination centers. Carrying out the settlement and/or compensation between its Control Blocks and against the other Coordination Center Zones.~~

    A party responsible for the coordination of its Coordination Centre Zone in respect of scheduling, load frequency control, time deviation and compensation of unintentional deviation.

2. Control Area Operator and Control Block Operator are replaced with LFC Operator, associated with LFC Area, LFC Block, and Merit Order List Responsible, with the definition of LFC Operator:

    Responsible for the load frequency control for its LFC Area or LFC Block.

    Additional information:

    This role is typically performed by a TSO.

3. The role Balancing Service Provider (BSP) is added, with the following definition:

    A party with reserve-providing units or reserve-providing groups able to provide balancing services to one or more LFC Operators.

    Additional information:

    Based on Electricity Balancing - Art.2 Definitions.

4. The definition of the Merit Order List Responsible is updated to:

    Responsible for the management of the available tenders for all Acquiring ~~System~~ LFC Operators to establish the order of the reserve capacity that can be activated.

5. Added Nominated Electricity Market Operator (NEMO), with the following definition:

    An entity designated by the competent authority to perform tasks related to single day-ahead or single intraday coupling.
    Source: Commission Regulation (EU) 2015/1222 (CACM).

    Additional Information:
    A NEMO performs MCO functions. (Market Coupling Operator)
    A NEMO runs a power exchange related to day-ahead or intraday market.
    A NEMO is a type of Market Operator.

6. In the definition of Imbalance Settlement Responsible the text «Market Balance Area» is replaced with «Scheduling Area»

7. In the definition of Balance Responsible Party the text «Market Balance Area» is replaced with «Scheduling Area».

8. The definition of Transmission Capacity Allocator is updated:

    The Transmission Capacity Allocator manages, on behalf of the System Operators, the allocation of available transmission capacity for a Bidding Zone Border. He offers the available transmission capacity to the market, allocates the available transmission capacity to individual Capacity Traders and calculates the billing amount of already allocated capacities to the Capacity Traders.

    Additional Information:

    The single allocation platform established by all TSOs for Forward Capacity Allocation performs the role of a Transmission Capacity Allocator.

9. The Capacity Coordinator is replaced with the Coordinated Capacity Calculator, including a new definition:

    Coordinated Capacity Calculator is the entity or entities with the task of calculating transmission capacity, at regional level or above.

    Source: Commission Regulation (EU) 2015/1222 (CACM).

10. The definition of Market Operator is changed:

    A market operator is a party that provides a service whereby the offers to sell electricity are matched with bids to buy electricity.

    Additional Information:
    This usually is an energy/power exchange or platform.

11. Changed the definition of the Resource Provider to:

    A role that manages a resource and provides production/consumption schedules for it, if required.

12. Scheduling Coordinator is replaced with Scheduling Agent, with the definition:

    The entity or entities with the task of providing schedules.

    Source: System Operation Guideline, Commission Regulation (EU) 2017/1485.

Additional information:

A party that is responsible for the schedule information and its exchange on behalf of a Balance Responsible Party.

13. Addition of Scheduling Area Responsible with the following definition:

A party responsible for the coordination of nominated volumes within a scheduling area.

Additional information:
This role is typically performed by a TSO.

14. Addition of a Resource Aggregator with the following definition:

A party that aggregates resources for usage by a service provider for energy market services.

15. Addition of a Consent Administrator with the following definition:

A party responsible for keeping a register of consents for a domain. The Consent Administrator makes this information available on request for entitled parties in the sector.

16. Redefined definition of System Operator:

System Operator means a natural or legal person responsible for operating, ensuring the maintenance of and, if necessary, developing the system in a given area and, where applicable, its interconnections with other systems, and for ensuring the long-term ability of the system to meet reasonable demands for the distribution or transmission of electricity.

Additional information:
The definition is based on DIRECTIVE 2009/72/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 13 July 2009 concerning common rules for the internal market in electricity and repealing Directive 2003/54/EC, Article 2 (Definitions)

17. The Market Information Aggregator has become a "free standing role" (without any associations), with the following comment "The Market Information Aggregator can receive data from many parties".

18. "Centern" is corrected and renamed to "Centre" in "Coordination Centre Operator".

19. The following roles are deprecated:

- Control Area Operator
- Control Block Operator
- Grid Operator

1.2   Changes to Domains

20. The term "Domain" is split into "Domains", "Resources", "Accounts" and "CIM Objects".

21. Control Block is replaced with LFC Block, with the definition:

A part of a synchronous area or an entire synchronous area, physically demarcated by points of measurement at interconnectors to other LFC Blocks, consisting of one or more LFC Areas, operated by one or more TSOs fulfilling the obligations of load-frequency control.

Source: System Operation Guideline, Commission Regulation (EU) 2017/1485.

22. The Control Area is replaced with LFC Area, with the definition:

A part of a synchronous area or an entire synchronous area, physically demarcated by points of measurement at interconnectors to other LFC Areas, operated by one or more TSOs fulfilling the obligations of load-frequency control.

Source: System Operation Guideline, Commission Regulation (EU) 2017/1485.

23. Market Balance Area is replaced with Scheduling Area, with the definition:

An area within which the TSOs' obligations regarding scheduling apply due to operational or organisational needs.

This area consists of one or more Metering Grid Areas with common market rules for which the settlement responsible party carries out an imbalance settlement and which has the same price for imbalance.
Source: System Operation Guideline, Commission Regulation (EU) 2017/1485.

Additional information:
This covers both Imbalance Area and Imbalance Price Area from the Electricity Balancing Guideline (2017/2195).

24. Added the domain Bidding Zone with the following definition:

The largest geographical area within which market participants are able to exchange energy without capacity allocation.

Source: Commission Regulation (EU) 543/2013.

25. Added the domain Bidding Zone Border, with the following definition:

Defines the aggregated connection capacity between two Bidding Zones

A market area (Which defines the aggregated connection capacity between two Bidding Zones) where the transmission capacity between the Bidding Zones is given to the Balance Responsible Parties according to rules carried out by a Transmission Capacity Allocator. Trade between Bidding Zones is carried out on a bilateral or unilateral basis.

26. Added domain Capacity Calculation Region (CCR), with the following definition:

The Capacity Calculation Region is the geographic area in which coordinated capacity calculation is applied.

Source: Commission Regulation (EU) 2015/1222 (CACM).

Additional information:

The transmission capacity between Bidding Zones, included in the Capacity Calculation Region, is given to the Balance Responsible Parties through an implicit capacity allocation process or through an explicit allocation auction.

27. Updated definition of Coordination Center Zone to:

~~The composition of a number of Control Blocks under the responsibility of the same Coordination Center Operator.~~

The composition of a number of LFC Blocks under the responsibility of the same Coordination Centre Operator.

28. Changed definition of Metering Point:

~~A domain where energy products are measured or computed.~~

An entity where energy products are measured or computed.

29. Updated definition of the Balance Group ("balance" is renamed to "imbalance", and the text «Market Balance Area» is replaced with «Scheduling Area».):

    An energy account under responsibility of a Balance Responsible Party used to determine imbalance considering predefined inputs and outputs within a specific Scheduling Area.

30. The definition of the Metering Grid Area is rephrased to:

    A Metering Grid Area is a physical area where consumption, production and exchange can be measured. It is delimited by the placement of meters for continuous measurement for input to, and withdrawal from the area.

    Additional information:
    It can be used to establish volumes that cannot be measured such as network losses.

31. "Center" is renamed to "Centre" in "Coordination Center Zone" and "RGCE Interconnected Group".

32. Corrected the definition of RGCE Interconnected Group, i.e. "programmes" is corrected to "programs".

33. Control Entity is flagged with stereotype «Candidate for deprecation».

34. The following domains are deprecated:
    - Allocated Capacity Area
    - Capacity Market Area
    - Common Capacity Area
    - Control Area
    - Control Block
    - Local Market Area
    - Market Area
   - Market Balance Area

1.3   Changes to associations

35. Addition of cardinality in the association from Capacity Trader [1..*] to Transmission Capacity Allocator [1].

36. Addition of cardinality in the association from Coordination Center Operator [1] to Coordination Center Zone [1].

37. Addition of an associations from LFC Block [1].to LFC Area [1..*], named "Is composed of".

38. Addition of an association from LFC Operator [Unspecified] to LFC Block [0..1], named "Manages".

39. Addition of an association from LFC Operator [1] to LFC Area [1..*], named "Manages".

40. Addition of an association from Merit Order List Responsible [1] to LFC Operator [1..*], named "Provides MOL to".

41. Addition of an association from LFC Area [1] to Scheduling Area [1..*], named "Consist of".

42. Addition of an association from Balancing Service Provider [1] to LFC Operator [1..*], named "Provides balancing services to".

43. Addition of an association from Bidding Zone [1] to Scheduling Area [1..*].

44. Addition of an association from Scheduling Area [1] to Bidding Zone [1..*], with an XOR dependency to the association from Bidding Zone to Scheduling Area and a connected textbox: "Either one, dependent on Bidding Zone configuration".

45. Addition of a name to the association from the Scheduling Area Responsible to Scheduling Area, named "Operates". And, the cardinality is changed to [1..*] at the Scheduling Area side.

46. Addition of an association from Merit Order List Responsible [1] the Reserve Allocator [1..*], named "Obtains tender results from".

47. Addition of an association from Bidding Zone [1] to Market Operator [1..*], named "Has".

48. Addition of an association from Bidding Zone Border [1..*] to Bidding Zone [2], named "Connects".

49. Addition of an association from Bidding Zone Border [0..*] to Capacity Calculation Region (CCR) [1], named "Belongs to".

50. Addition of an association from Transmission Capacity Allocator [Unspecified] to Bidding Zone Border [1..*], named "Manages".

51. Addition of an association from System Operator [Undefined] to Coordinated Capacity Calculator [1..*], named "Provides Grid Models to".

52. Addition of an association from Accounting Point [Undefined] to Reserve Resource [0..*], named "Has".

53. Addition of an association from Balancing Service Provider [Undefined] to Reserve Resource [1..*], named "Provides bids for".

54. Addition of an association from Bidding Zone [Undefined] to Metering Grid Area [1..*], named "Is composed of".

55. Addition of an association from Resource Aggregator [Undefined] to Accounting Point [1..*], named "Aggregates".

56. Addition of an association from Consent Administrator [Undefined] to Accounting Point [1..*], named "Keeps a register of consents for".

57. The association from the Interconnection Trade Responsible named "Sends nominations to" to the Nomination Validator is changed to the opposite direction and renamed to "Confirms nominations".

58. The association from Transmission Capacity Allocator to the System Operator named "Provides results to" is changed to go from the Transmission Capacity Allocator to the Nomination Validator.

59. The association from the Balance Responsible Party to the Imbalance Settlement Responsible, named "Makes contracts with" is turned and renamed to "Settles imbalance for".

60. The cardinality of the association from Balance Supplier to Production Responsible Party, on the Production Responsible Party side is changed to [0..*] (was unspecified).

61. The cardinality of the association from Balance Supplier to Consumption Responsible Party, on the Consumption Responsible Party side is changed to [0..*] (was unspecified).

62. The association from Trader to Market Operator is turned with the cardinality of [1] on the Market Operator side and [1..*] on the Trader side, named "Provides trading platform to".

63. The cardinality of the association from Trader to Accounting Point is changed from [1..*] to [0..*].

64. The cardinality on the Control Centre Zone side of the association from RGCE Interconnected Group is changed from * to 2.

65. The association between Market Operator and Market Balance Area, "Operates" is «Deprecated».

66. The association between System Operator and Market Operator, "Declares constraints to" is «Deprecated»

67. The association between System Operator and Market Operator, "Provides market information" is «Deprecated».

1.4   Other changes

68. The documentation of the Harmonised Role Model diagram "*The Bidding Zone Border is the border between two Bidding Zones*" is removed.

69. The definition of a Domain is moved to the introduction.

70. The following note is deleted:
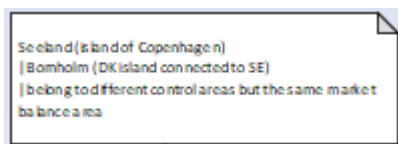
71. Addition of stereotypes to the HRM:

«**H**armonised Role»	Essential harmonised business responsibility. A role cannot be split over several market participants;
«**H**armonised Resource»	A grid asset, a consumption resource or a production resource;
«**H**armonised Domain»	A composition of one or more Metering Points;
«From CIM Object»	An object defined in IEC/CIM;
«Harmonised Account»	A stereotype for Balance Group must be added.

Stereotypes will be suppressed from the HRM diagram in the pdf-version of the HRM.

72. Text boxes and deprecated domains have been removed:
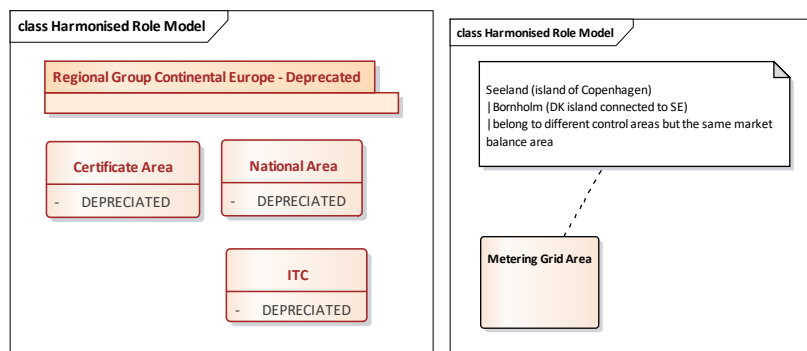
73. changed definition of the Stereotype «Harmonised account» in the introduction in the pdf-version:

"A harmonised account represents a business object for aggregated reporting"

2   Changes in version 2018-01

Date: 2018-09-27

Editorial updates:
1. Updated the front page
2. Updated chapter 1 and 2; the three organisations developing the role model are described as "ENTSO-E, EFET and ebIX®"
3. Corrected the alphabetical order of the role *Merit Order List Responsible*

3   Changes in version 2017-01

Date: 2017-10-06

1. Removed association between Nomination Validator and Transmission Capacity Allocator
2. Added a new association from Transmission Capacity Allocator to System Operator
3. Renamed the Block Energy Trader to Trader and simplified the definition
4. Added association from Trader to Balance Responsible Party
5. Changed cardinalities:
    a. The association from Balance Supplier to Grid Access Provider was changed from undefined to [0..*] at the Grid Access Provider side.
    b. The association from Party Connected to Grid to Grid Access Provider was changed from undefined to [1] at the Grid Access Provider side.
    c. The association from Interconnection Trade Responsible to Capacity Trader was changed from undefined to [1..*] at the Capacity Trader side.
6. Depreciated the following domains:
    a. ITC
    b. Certificate Area
    c. National Area
7. Functional Group was depreciated in version 2015-01, hence removed from 2017-01
8. Depreciated the Regional Group Continental Europe package, including the links to Control Entity and RGCE Interconnected Group
9. Rephrased the definition of Balance Group
10. Removed text related to "Equivalent to" under "Additional Information" in the definition of Balance Responsible Party
11. Corrected the definition of the Data Provider
12. Updated the definition of Metering Point Administrator
13. Updated the definition of Grid Access Provider
14. Added a footnote to the Scheduling Coordinator
15. Added the role Energy Service Company (ESCO)
16. Changed the HRM diagram:
    a. The model is made more readable by making the distance between roles and domains smaller

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b. All associations in the HRM have got a direction (arrow)

c. Removed text and colour related to responsibility of roles and domains

d. Removed the text box related to Control Entity

17. Changed the HRM document:
    a. Renamed "Actor" to "Role" in the first column of the table in chapter 5.1
    b. Renamed "Domain" to "Type" in the header part of the table in chapter 5.2
    c. All association names start with an upper-case letter
    d. Updated the definition of Domain in chapter 3 of the HRM
    e. Removed the introductory text in chapter 5.2
    f. Textual corrections and clarifications

18. Renamed MOL Responsible to Merit Order List Responsible

19. Added an explanation of RGCE (Regional Group Continental Europe) to the definition of RGCE Interconnected Group

4   Changes in version 2015-01

Date: 2015-09-24

1. Deprecation of Functional group
2. Added Data Provider
3. suppression of the association to functional group of the related classes
4. Removal of text boxes with examples
5. Multiplicity of [0..*] between BRP and Balance group
6. Changed names:
    a. Reserve Object" to "Reserve Resource"
    b. "Resource Object" to "Resource"
7. added relation between "Reserve Resource" and "Accounting Point"
8. Removal of relation between Resource Provider and Reserve Resource
9. Reserve Resource definition changed
10. Resource definition changed
11. Balance Group additional information changed
12. Modified relation between Balance Group and Accounting Point
13. modified definition of Resource Provider
14. Revised a number of cardinalities

5   Changes in versions 2014-01 and older

Version	Release	Date	Paragraphs	Comments
2014-01		2014-01-28		Updated with changes agreed by the Harmonisation group. Changes to Data Provider definition and diagram note, Grid Access Provider definition, Resource Object definition and maintenance statement. Approved by Market Committee on 2013-05-15

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Version	Release	Date	Paragraphs	Comments
2011-01		2011-12-06	Complete review	Complete review of document text (the approval procedures have been removed and the main text (including the introduction) has been updated). Add new Roles "Block Energy Trader", "Capacity Coordinator" as well as the domain "Accounting Point" Modification of different relations. Approved by: • ENTSO-E Market Committee. • The EFET Management • Committee • The ebIX Plenary.
2009-01		2009-06-26	Modified definition	Adjusted all names in figure to upper camel case. Modified example for Capacity Market Area Added example to Common Capacity Area Modified definition of Grid Access Provider Modified definition of Market Information Aggregator
			Changed relation	Modified name of relation of Grid Access Provider with Local Metering Point.
2008-02		2008-12-08	New roles	MOL Responsible for ERRP Reserve Allocator for ERRP
			Change relation	Suppress the relation between the Metered Data Responsible and the Local metering point. Add the relation between the Metered Data Responsible and the Metering Point
2008-01		2008-07-01	Change version number	The version number is changed in order to take into consideration the 2 publications per year (yyyy-01 and yyyy-02).
			Definition changes	Market Operator Balance Supplier Grid Operator Resource Object Capacity Trader

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Version	Release	Date	Paragraphs	Comments
			Domain name change	CBT to ITC
5	0	2007-12-01	5 and 6	Rationalised the relationships to focalise where possible on responsibility. Improved definition layout. Added new roles: Reconciliation Responsible, Reconciliation Accountable, Market Information Aggregator
4	0	2006-07-06	5 and 6	Introduced new domains Resource Object, Reserve Object and new roles Resource Provider, Capacity Trader, Interconnection Trade Responsible, Nomination Validator. Modified definition Market Operator, System Operator and Transmission Capacity Allocator
3	2	2005-03-29	6	Clarified definitions in order to bring it into line as a harmonised version
3	1	2004-09-22	3.1 introduction

5 and 6 | Definition of Role and party

Addition of Metered data responsible

Correction of metered data aggregator responsible |
3	0	2004-04-29		Add new domain of "unit" "functional group" and "balance group", include the UCTE environment and adopt model to more correctly reflect the overall market.
2	0	2003-02-12		Add more detail to market domains
1	0	2002-06-17		Initial release of document
0	8	2001-02-10		Initial version for comment