



Centrálny depozitár cenných papierov SR, a. s.

**Executory Decree No. 1
to the Rules of Operation of Centrálny depozitár cenných
papierov SR, a.s.**

**COMMUNICATION OF THE PARTICIPANT AND
OTHER MARKET INFRASTRUCTURE WITH IS CDCP**

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Definitions and Abbreviations

CDCP	Centrálny depozitár cenných papierov SR, a.s.
IS CDCP	Information system of Centrálny depozitár cenných papierov SR, a.s.
CSDR Regulation	Regulation (EU) No 909/2014 of the European Parliament and of the Council of 23 July 2014 on improving securities settlement in the European Union and on central securities depositories and amending Directives 98/26/EC and 2014/65/EU and Regulation (EU) No 236/2012
User	End User of IS CDCP of the Participant.
Rules of Operation	Rules of Operation of Centrálny depozitár cenných papierov SR, a.s. in valid wording.
Connection service	Technical possibilities of communication.
URL	Uniform Resource Identifier
JRE	Java Runtime Environment
XML	Extensible Markup Language
A2A	Application to application
U2A	User to application
DCA	Dedicated Cash Account
DCP	Directly Connected Participant
ICP	Indirectly Connected Participant
VAS	T2 Value Added Services
SLA	Service Level Agreement

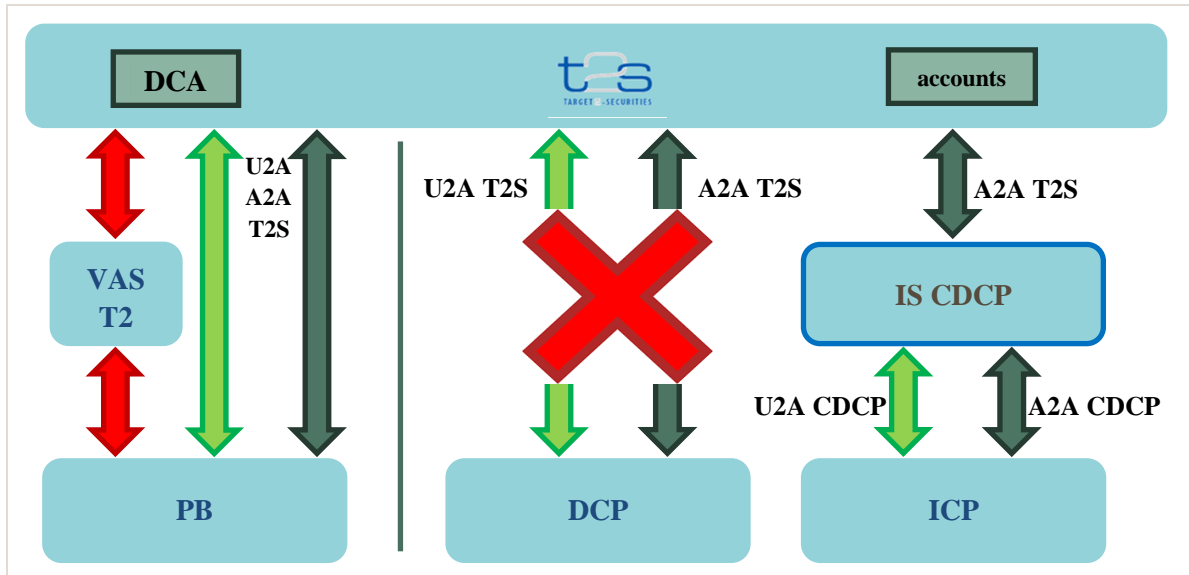
Article 1
Introductory provisions

- 1.1 This Executory Decree has been issued in conformity with Article 1 of the Rules of Operation and defines details related to the communication of the participants and other market infrastructures with the information system of Centrálny depozitár cenných papierov SR, a.s.
- 1.2 The document describes technical options of the communication (“connection service”) with the IS CDCP for its participants including related training, testing, and registration process agenda.
- 1.3 The participant is obliged to ensure communication with IS CDCP in manner and in compliance with requirements pursuant to this Executory Decree and fulfil obligations stipulated therein.
- 1.4 For purpose of this Executory Decree also other market infrastructure is regarded for the participant.

Article 2
Information system of CDCP

- 2.1 IS CDCP is build and operated on grounds of regular technical standards and practices. With aim to protect information saved in the IS against threats of different type (e.g. loss of data, unauthorised access, information leak, attacks), CDCP is maintaining the information security system, which is subject to regular internal review. Results from audit of the IS are communicated to the supervisory body.
- 2.2 To facilitate effective registration, payments and settlement, CDCP is using the international open procedures and standards for sending of messages and reference data in its procedures for communication with the users within the settlement system for transactions in securities.

Article 3 General view



In Figure above

- IS CDCP is own information system of CDCP.
- ICP is a member of the central depository who uses IS CDCP services via his U2A and/or A2A interface. IS CDCP provides communication with T2S via T2S A2A interface. From T2S's point of view, this is an indirectly connected participant of the central depository (ICP).
- DCP is a member of the central depository who uses direct connection with T2S as a participant of the central depository. From T2S's point of view, this is a directly connected participant of the central depository (DCP). For now, CDCP does not offer this option.
- PB is a payment bank that uses the direct connection with T2S as a participant of the national bank. From T2S's point of view, this is a directly connected participant of relevant national bank (DCP).
- VAS T2 are value added services of Target2 system the payment bank may use as an alternative to manage liquidity on cash account (DCA) in T2S.
- DCA is a dedicated cash account in T2S opened by relevant national bank in T2S for the payment bank.
- U2A/A2A T2S are interfaces of the T2S system.

Article 4
Options of connection to the IS CDCP

- 4.1 The participant is using for communication with IS CDCP options of connection according to this article. Method of connection is given by the participant who set method of technical connection and communication with IS CDCP. CDCP offers connection to IS CDCP in operation environment and in test/training environment according to this Executory Decree. The participant is obliged to select at least one operation and at least on test/training environment.
- 4.2 The operation and test environment of IS CDCP are detached and do not influence each other.
- 4.3 The IS CDCP offers connection in two modes A2A and U2A. The participant may select from either one or both connection modes. Both modes are available in operation and test environment.
- 4.4 CDCP operates multiple test environments, and the participants have usually accessible just one.
- 4.5 The operation environment of IS CDCP is developed and maintained with adequate spare capacity in relation to usual volume of transactions on the market. Relevant contractual arrangements with key suppliers of IT services to CDCP and SLA parameters take in consideration CDCP needs and usual volume of transactions on the market. IS CDCP has sufficient capacity to process all transactions before the end of the operation day phase also in event of emergency
- 4.6 In cases when planned volume of participant's transactions exceeds its usual values several fold, the participant is obliged to inform CDCP on that fact well in advance and to provide CDCP necessary cooperation if needed, mainly with aim to identify possible risks and to set further procedures for processing of these transactions.
- 4.7 The rules for registration process of participants for access to IS CDCP are regulated in detail in article 15 of this Executory Decree.
- 4.8 IS CDCP shall automatically log all activities of participants in IS CDCP, mainly all unusual and error situations occurred during processing in order to make required records for analysis, identification of reasons and eventual correction. IS CDCP is providing audit trail service for all transactions.
- 4.9 Technical requirements on participant for available modes of connection and communication with IS CDCP are set in articles 7 to 11 of this Executory Decree.
- 4.10 IS CDCP shall process all request delivered by the participant in U2A or A2A mode equally.

Article 5
U2A mode

- 5.1 The U2A mode between the IS CDCP and the participant is based on a web application available via defined URL address in a browser via standard HTTPS and TLS protocol. For reasons given the participant is obliged to ensure that the protocol is permitted on the terminal computer and network components of the participant.
- 5.2 A client digital certificate (X.509) has been used for identification and authentication of the final user of the participant. The participant is obliged to ensure issuance of the certificate by an accredited certification authority for the end user of the participant (certificate for a natural person), and the private key should be installed on his/her terminal computer. The public key should be registered in the IS CDCP and assigned to the participant for the U2A mode.
- 5.3 The IS CDCP communication server is identified by a server digital certificate.

Article 6
A2A mode

- 6.1 The A2A mode between the IS CDCP and the participant is built on XML message exchange between the IS CDCP and the participant's own information system. XML messages are based on ISO20022 standard and supplemented with proprietary elements and messages needed for the national market. For description of the A2A interface and XML messages, refer to a specific document available from CDCP website.
- 6.2 Technically, the A2A mode is made available via two communication channels:
 - a) IS web services,
 - b) SWIFT international communication system.
- 6.3 Structure of the XML messages is identical for both channels.
- 6.4 A client digital certificate (X.509) has been used for identification and authentication of the participant. The participant is obliged to ensure issuance of the certificate by an accredited certification authority for the participant (certificate for a legal person), and the private key should be installed on a computer of the participant where its IS is operated and communicates with the IS CDCP. The public key should be registered in the IS CDCP and assigned to the participant for the A2A mode.

6.5 The IS CDCP communication server with the web services is identified by a server digital certificate.

Article 7

Technical requirements for the participant for U2A mode

- 7.1 The IS CDCP web application for the U2A mode generates pages in XHTML 1.0 language, which is supported by all commonly used Internet browsers (Internet Explorer, Mozilla Firefox, Google Chrome, Opera).
- 7.2 The IS CDCP web application does not require installation of any software from CDCP by the participant. The end computer of the user and his/her browser must be however configured to allow
- a) installation and availability of the certificates for internet browser,
 - b) client Java script,
 - c) cookies,
 - d) functional Java applet add-ons, which requires installation of JRE on the user's end computer.
- 7.3 Considering provisions of section 7.1 and 7.2 of this article and fact that the latest versions of some Internet browsers disable use of the Java applet add-ons on the website, the real availability of the Internet browsers for the IS CDCP is limited to Internet Explorer and Mozilla Firefox. Supported are the latest version of the browser and two prior versions.
- 7.4 The IS CDCP web application may print the screens using standard features of the Internet browser/OS and export of contents from some screens to text or XLS files also through standard services of the Internet browser.
- 7.5 The IS CDCP web application has no special requests for the user's end computer and therefore, the user may use for communication with the IS CDCP in the U2A mode any standard, modern PC with at least 1024x768 pixels screen (recommended is higher resolution), keyboard, and mouse.

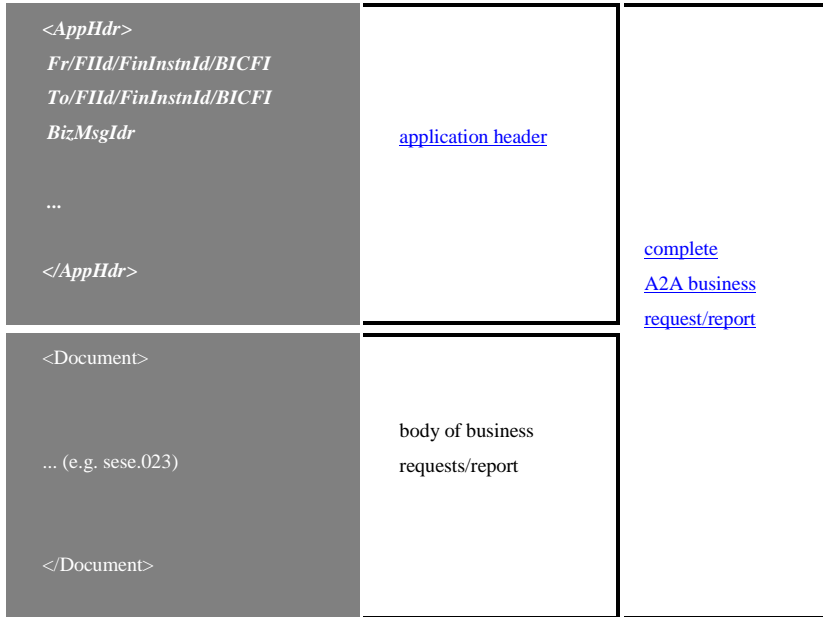
Article 8

Technical requirements for the participant for A2A mode – web services

- 8.1 The IS CDCP publishes two web services with defined operations. The first web service allows to send an independent message to the IS CDCP and to get a response from the IS CDCP. The second web service allows to send a batch of multiple messages in a file to the IS CDCP. The IS CDCP

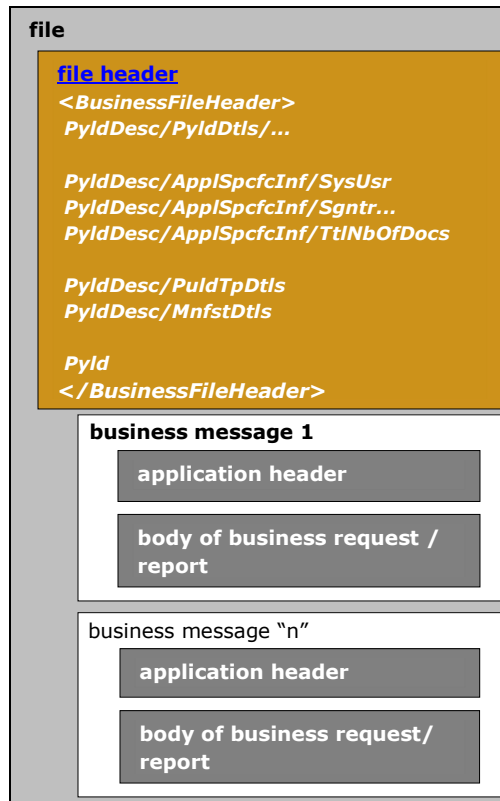
shall respond to the participant individually regardless how the message was received (separate message or file with multiple messages).

8.2 The first web service uses the secured communication technology Microsoft Windows Communication Foundation 4.5 (WCF) at the message level (“message security”). During communication the messages are exchanged in format of the A2A interface. A caller is identified by a client certificate.



8.3 Application header must contain a digital signature of the message despite intactness of the delivered message and sender’s identification is provided also by the WCF infrastructure itself.

8.4 The second web service uses the secured communication technology Microsoft Windows Communication Foundation 4.5 (WCF) at the transport level (“transport security”) where the communication is encrypted by SSL server certificate of the IS. A caller is identified by a client certificate.



8.5 File header must contain a digital signature. In this case no digital signature at the level of application headers of each message is required.

Article 9 A2A – SWIFT mode

- 9.1 For SWIFT message exchange, with respect to the format of messages, the same rules as in case of the web services apply. After the participant delivers the message to CDCP's BIC code via the SWIFT network, the message will be processed in IS CDCP identically to the message delivered via the web services.
- 9.2 The IS CDCP shall respond with XML messages according to description of the A2A interface of CDCP.
- 9.3 Should the message from the participant delivered to the IS CDCP not comply with the IS CDCP requirements and description of the A2A interface, it is rejected automatically from processing, and admi.007 message is sent to the participant.

Article 10
Certificates

- 10.1 Identification and authentication of the participant is ensured by digital certificate installed in the participant's computer. The participants are obliged to adopt reasonable security action to protect the private key of the user/participant against discrediting. CDCP recommends installation of the certificate in a manner that requires entering of a solid password in each use.
- 10.2 CDCP shall not be liable for any loss, direct or indirect damage due to discrediting of the private key of the user/participant. If the participant is suspicious about the discrediting of his/her private key, he/she shall inform CDCP immediately on this fact and shall request for disabling of access of said user/certificate in the IS CDCP.
- 10.3 For the purposes of secured communication between the IS CDCP and the participant, it is necessary to register certificate public key in the IS CDCP, to include it to the correct group of the users, and assign the rights. To this end the participant submits the certificate's public key to an employee of CDCP. Each certificate may be registered once only in the IS CDCP.
- 10.4 The certificate may be used in the IS CDCP from the first until the last day of validity specified by the certification authority at issuance of the same.
- 10.5 If the participant is interested in use of a certificate issued by a certification authority of which use is not experienced in operation of the IS CDCP, the participant informs CDCP in advance about this interest, and correct operation of the certificate is checked in the IS CDCP test environment upon mutual agreement. Based on the test results CDCP informs the participant about ability/inability to use the certificate in the IS CDCP operation environment.

Article 11
Communication layer

- 11.1 For both communication modes, connection via Internet and reserved lines are available, and for A2A mode also SWIFT. Technical details and functional tests of the communication layer should be communicated in advance with the specified employees of CDCP.
- 11.2 The procedures for setting the network connection of the participant to IS CDCP are described in separate document, published by CDCP on its web page.

Article 12 **Training**

- 12.1 CDCP allows the participants to attend training on use of the IS CDCP web application. Training organized by CDCP is not mandatory for the participants. Training of the participant's users may be provided by CDCP upon request of the participant, or participant may train on the "train the trainer" principle.
- 12.2 Training organized by CDCP is usually conducted based on request from the participant. The training days are agreed between CDCP and the participant.

Article 13 **Testing**

- 13.1 CDCP requires certification tests for the participants, and successful passing of the test is condition for granting access to the participant to single types of services in compliance with the Rules of Operation, or condition for creating of central depository link pursuant to CSDR Regulation and the Rules of Operation. The certification tests grant a sufficient level of surety to CDCP that the participant is ready for communication with the IS CDCP in the operation environment in the mode selected by the participant. List of the certification tests is defined in separate document published by CDCP on its web page.
- 13.2 The participant informs CDCP about certification test results in the form of certification test results report. The certification test procedure and form of the report on the test results are described in a specific document published on CDCP web page.
- 13.3 CDCP shall check each report on result of certification test of the participant and based on the result it shall decide to issue or not to issue the certificate, which demonstrates that the participant completed the certification tests in selected scope.
- 13.4 Except certification testing according to section 13.1 of this article the participant is obliged to participate in preparation and testing of IT systems according to requirements of CSDR Regulation and the Rules of Operation. The participants are obliged to participate in testing mainly in following situations:
- a) major change of the IS CDCP
 - b) launch of new IS CDCP to operation
 - c) implementation of new technology
 - d) event of serious emergency resulting in disruption of provision of IS CDCP services

- e) special cases set by relevant legal regulations or the Rules of Operation
- 13.5 Testing according to section 13.4 may relate to relevant services or parts of the IS CDCP. In testing participate selected employees and other involved parties if necessary, e.g. critical/key suppliers or other involved entities.
- 13.6 CDCP shall inform the participants on date of testing pursuant to section 13.4 of this article in reasonable time-period, but not later than 30 days before testing and reviewing. In reasoned situation CDCP can shorten the period stated in previous sentence.
- 13.7 Should deficiencies be found by CDCP on the side of the participants based on the testing and reviewing of the procedures according to section 13.4 of this article, the participants shall remove all deficiencies found within a reasonable time period. CDCP shall have right to define an adequate action the participants are required to adopt.
- 13.8 CDCP informs the participants and other involved parties attending tests about results of the tests and reviews of procedures pursuant to section 13.4 of this article, which is without prejudice to the provisions that govern confidentiality of information according to the Rules of Operation and special contractual arrangements with respect to these entities.
- 13.9 In case the participant shall not participate the mandatory testing pursuant to section 13.4 of this article following CDCP request, or in case the participant shall not remove identified deficiencies, CDCP has right to proceed in compliance with relevant provisions of the Rules of Operation governing actions and sanctions.
- 13.10 The testing at the participant is not limited by CDCP to the certification testing pursuant to section 13.1 of this article or mandatory testing pursuant to section 13.4 of this article, i.e. each participant may conduct in-house testing to the extent reasonable for his business needs.
- 13.11 In addition to testing detailed in this article, CDCP conducts internal testing in case of correction of minor change to the IS CDCP before it is launched to the operation environment. Active attendance of the participants in such testing is not mandatory, but the participants are allowed to participate. CDCP shall inform the participants on testing pursuant to this provision in reasonable time period and in the appropriate manner.

Article 14

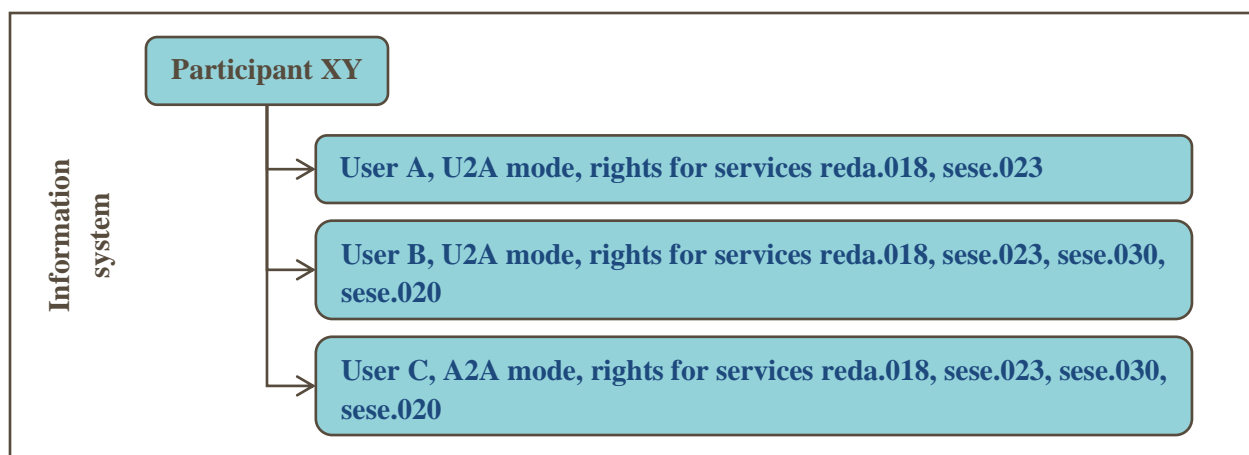
Competence rules

- 14.1 The participant is entitled to provide access to the IS CDCP web application to trained and authorised users only.

- 14.2 The participant shall be liable to CDCP for using of own certified information system only in the A2A connection mode, i.e. only an information system of the participant that successfully passed the certification tests can communicate with the IS CDCP in the A2A mode.
- 14.3 CDCP shall maintain local Service Desk with competences to deal with the issues and problems associated with the operation and use of the IS CDCP. The Service Desk provide communication with the participant in the area of use of the IS CDCP, in particular:
- a) keeping the records of contact persons of the participant responsible for use of the IS CDCP,
 - b) reviewing of the participant's certification test results, and keeping records thereof including the issued certificates (certificate on the participant's test result),
 - c) collection and primary processing of comments and impulses of the participant's users of the IS CDCP,
 - d) communication of changes to the IS CDCP to the participants,
 - e) organizational support of the IS CDCP testing for the participants,
 - f) the IS CDCP web application user training,
 - g) dealing with error and non-standard events in the IS CDCP, communication to the participants.
- 14.4 The participant appoints a contact person on his side who shall provide necessary cooperation to responsible employees of CDCP to deal with the issues and problems related to the use of the IS CDCP, e.g. cooperation in organizing of the participant's testing, cooperation in registration/exchange of certificates and configuration of user rights.
- 14.5 CDCP and the participants shall inform each other about e-mail addresses and phone numbers of the responsible employees of CDCP and contact person of the participant for fulfilment of the tasks defined in this Executory Decree. CDCP can notify of the persons in sense of this provision by publishing of contact details on its web page.
- 14.6 Communication of the responsible employees of CDCP and contact person of the participant takes place via e-mail messages for the reasons of operating flexibility. Both parties acknowledge that the e-mail communication may subject to monitoring. Should transfer of confidential information be needed, both parties shall apply an asymmetric encryption of the e-mail communication using the digital certificates.

Article 15
Registration process

- 15.1 In order to get an access to some of the IS CDCP environment a registration process is mandatory for the participant. The purpose of the registration process is to ensure controlled access of the participants to the IS CDCP environments. The registration process has multiple steps.
- 15.2 The first step is registration of the participant in the IS CDCP environment. To this end, the participant submits “Request for registration/change in registration of the IS CDCP participant” to CDCP where the required IS CDCP environment is identified in addition to his identification data. The template of the form is published on the CDCP web page.
- 15.3 Another step is registration of a specific user of already registered participant in the IS CDCP environment. The participant either once or repeatedly asks for the registration of an user of the IS CDCP by submission of the “Request for user registration in IS CDCP” form where identification data of the participant, required environment, communication method, certificate serial number, and required rights for services for the operation environment are defined. The template of the form is published on the CDCP web page.
- 15.4 The participant does not fill in the required service right in the request for user registration in the IS CDCP test environment. CDCP shall automatically grant rights to all services available to the participant.
- 15.5 CDCP does neither specify maximum nor minimum number of the registered users of the IS CDCP for a participant in any IS CDCP environment.
- 15.6 Should there be a need to change the already granted service rights for the IS CDCP user in the operation environment, the participant asks for registration of the IS CDCP user by filling in a request that replaces the prior one thereby.
- 15.7 Registration of the IS CDCP user is cancelled based on the form titled “Request for cancellation of registration of the IS CDCP user” filled in by the participant. The template of the form is published on the CDCP web page
- 15.8 All accesses of the participants to the IS CDCP test environment granted prior to effective date of this document shall be regarded valid, and no additional registration process is needed.



15.9 In Figure above is an example of the participant XY and three users of the participant registered in the IS CDCP. The users A and B in the U2A mode, and user C in the A2A mode. The registration of the participant took place based on the Request for participant registration in IS, and registration of the users based on three Requests for user registration in IS.

Article 16 **Test environment**

16.1 The conditions for registration of the participant in the test/training environment of the IS CDCP are:

- a) becoming into effect of granted access of the participant in the sense of valid provisions of the Rules of Operation of CDCP,
- b) or formally expressed interest of a person who submitted or plan to submit the request for access of a participant pursuant to the Rules of Operation and becoming into effect of concluded agreement with the requesting person with aim to maintain confidentiality on technical data of IS CDCP which the requesting person shall obtain in connection with testing according to the Rules of Operation of CDCP.

16.2 Conditions for registration of the user in the test/training environment of the IS CDCP are successful registration of a participant in the test environment.

Article 17 **Operation environment**

17.1 The conditions for registration of the participant in the operation environment of the IS CDCP are:

- a) becoming into effect of granted access to the participant in the sense of valid provisions of the Rules of Operation of CDCP and granting access to single types of services, and at the same time
- b) confirmed successful completion of the CDCP certification tests.

17.2 The conditions for registration of the user in the operation environment of the IS CDCP are:

- a) successful registration of a participant in the operation environment,
- b) rights required for the user do not exceed the extent of the certification tests completed by the participant to date, in relevant mode (U2A, A2A).

Article 18

Documentation of the IS CDCP services and changes

- 18.1 Documentation for the IS CDCP services for the A2A mode is available for the participants from CDCP website. The user guide for the U2A mode is permanently available from menu in the IS CDCP web application.
- 18.2 The participants are authorized to make local copies of the IS CDCP documentation for their needs including the communication needs with their suppliers (e.g. IT services).
- 18.3 In case to changes to the IS CDCP services, CDCP publishes updated documentation on its website, deploys changes to the test environment, and informs on this fact on User Committee meeting or the contact persons of the participants by e-mail, usually within a reasonable deadline prior to deployment of the changes to the operation environment. CDCP shall have right either to reduce or increase the deadline depending on the extent of changes and upon informing the participants on this fact.
- 18.4 The provision of section 18.3 of this article does not apply in case of a repair of a serious defect found in the IS CDCP operation environment. In that case change to the XML message structure of the A2A interface is not usually needed, and CDCP may apply quick patch and reduce the time needed for installation of the patch in the test environment to minimum.

Article 19

Handling of error and non-standard situations

- 19.1 In case of errors found in the IS CDCP or the connection service unavailability, the participant may use the local Service Desk according to article 14 of this Executory Decree

Article 20
Alternate workplace

- 20.1 CDCP maintains in its premises an alternate workplace for the participants with at least one personal computer allowing the participant to communicate with the IS CDCP operation environment in the U2A mode.
- 20.2 The purpose of the alternate workplace is provide the participants alternate way of communication with the IS CDCP in the U2A mode in case of operation failure according to the Rules of Operation. The alternate working place is not intended for testing of IS CDCP by the participant.
- 20.3 In case of interest of the participant to use the alternate working place, the participant must act in compliance with the executory decree governing the operation failure.
- 20.4 Procedure according to this provision apply also in case of interest to use the alternate working place in other reasoned cases agreed by CDCP, e.g. testing of participant's plans in connection with ensuring of its business continuity.

Article 21
Connection service availability

- 21.1 The connection service to the IS CDCP is accessible in conformity with the operation day schedule and with calendar of operation days of CDCP settlement system.
- 21.2 In case of an exceptional event CDCP reserves right to limit availability of the connection service to the IS CDCP for the participants. The participants shall be informed about any such event usually in advance or afterwards depending on the cause and severity of the extraordinary event.

Article 22
Final provisions

- 22.1 This Executory Decree to the Rules of Operation enters into force on the day of approving thereof by the board of CDCP on 27 June 2018 and is effective from 15 July 2018.