SAP HANA ENTERPRISE CLOUD SUPPLEMENTAL TERMS AND CONDITIONS

These supplemental terms and conditions (the "HEC Supplement") are part of an agreement for certain SAP Cloud services between SAP and Customer and apply solely to SAP HANA Enterprise Cloud Services (the "Cloud Service") and not any other SAP product or service.

Additional supplemental terms and conditions for SAP S/4HANA, cloud enterprise edition, private option are set forth in a separate addendum to this HEC Supplement ("S/4HANA Private Addendum"). If the Order Form includes a subscription to S/4HANA Private, private option, the terms in the SAP S/4HANA Private Addendum shall apply additionally, and shall prevail in case of conflict with other terms in this Supplement, and are incorporated by reference herein.

1. DEFINITIONS

Definitions used but not defined in this HEC Supplement shall have the meaning ascribed to them in the Order Form or in documents incorporated therein.

1.1 "Agreed Downtime" is defined in Section 5.1 of this HEC Supplement.

1.2 "Agreement" means the Order Form and all documents referenced therein, such as applicable Attachments, Supplements and Exhibits.

1.3 "Business Day" means any days from Monday to Friday with the exception of the public holidays observed at Customer's Primary Access Location.

1.4 "Change Request" means any changes in the Cloud Service as described in a written document signed by the parties and referencing the applicable Order Form.

1.5 "Computing Environment" means the SAP data center facilities, servers, networking equipment, operating systems, and data storage mechanisms selected and used by SAP to provide the Cloud Service for the Customer, and includes the Production Computing Environment (PRD), and any other Computing Environment used for non-production purposes (NON-PRD) as agreed in the Order Form.

1.6 "Documentation" for HEC Services means SAP's then-current service description documentation and the Roles and Responsibilities for HEC description for the HEC Service which is made available to Customer.

1.7 "Downtime" means the Total Minutes in the Month during which the Cloud Service does not respond to a request from SAP's Point of Demarcation for the data center providing the Cloud Service, excluding Excluded Downtime.

1.8 "Emergency Downtime" is defined in Section 2.3 subsection (b) of this HEC Supplement.

1.9 "Excluded Downtime" is defined in Section 5.1 of this HEC Supplement.

1.10 "HEC Services" means the following Cloud Services agreed under an Order Form and further described in the Agreement: HANA Enterprise Cloud for Production ("HEC Production"), HANA Enterprise Cloud for Projects ("HEC Projects"), HANA Enterprise Cloud for Production with Subscription Software ("HEC Subscription"), and SAP S/4HANA, cloud enterprise edition, private option, ("S/4HANA Private").

1.11 "Incidents" means unplanned interruptions or material reduction in service quality reported by Authorized Users.

1.12 "Incident Reaction Time" means the amount of time (e.g. in hours or minutes) between the time that the SAP Support Level 1 organization is notified of the Customer-reported Incident and first action taken by an SAP support person, familiar with the Customer's environment, to repair the Incident.

1.13 "LAN" means a local area network.

1.14 "License Agreement" means the agreement(s) (other than this Agreement) under which Customer procured Licensed Software.

1.15 "Licensed Software" means the version or release of the applications, databases, software, tools and components owned or licensed by Customer (other than any Subscription Software) which Customer provides to SAP as part of the Computing Environment.

1.16 "Local Time" means the time zone in Customer's Primary Access Location.

1.17 "Month" means a calendar month.

1.18 "Non-PRD" or "Non-Production Computing Environment" means any Computing Environment other than a PRD and may include development, quality assurance or sandbox environments.

1.19 "Point of Demarcation" means the outbound firewall (or, in case of a VPN for access, the point of connection of the SAP network to the VPN) of SAP's Computing Environment.

1.20 "PRD" or "Production Computing Environment" means that part of the Computing Environment which is used exclusively for the execution of live business transactions.

1.21 "Scheduled Downtime" is defined in Section 5.1 of this HEC Supplement.

1.22 "Service Credit" means a credit calculated as described in Sections 5.1 and 5.5 of this HEC Supplement.

1.23 "Service Level" means those service levels described in Section 5 of this HEC Supplement.

1.24 "Subscription Software" means SAP software described in the Order Form and provided and hosted in the Computing Environment by SAP on a subscription basis as part of the HEC Subscription offering.

1.25 "Total Minutes in the Month" are measured 24 hours at 7 days a week during a Month.

2.   LICENSED SOFTWARE, SUBSCRIPTION SOFTWARE AND MAINTENANCE

2.1   HEC Production and HEC Projects

(a) **Provision of Licenses**. Customer is responsible for providing all Licensed Software and obtaining all necessary rights from third parties required for SAP to run and host the Licensed Software. Customer will, at SAP's request, provide written verification of such rights from Customer and/or any applicable third party licensors. Customer grants to SAP the non-exclusive right to use the Licensed Software for the sole purpose of and only to the extent necessary for SAP and its subcontractors to provide the Cloud Service and to the extent as may be otherwise stated in the applicable Order Form. Customer hereby represents and warrants that it has all rights, licenses and authorizations necessary to grant the rights to SAP as set forth in this Section.

(b) **Support**. Customer is responsible for obtaining and retaining SAP Enterprise Support (or any other SAP Support if agreed by SAP in writing) for SAP Licensed Software, and relevant support for non-SAP Licensed Software, for the duration of the Order Form.

(c) **Licensed Software Configurations Modifications and Add-Ons**. Customer is responsible for testing and resolving source code compatibility issues or other conflicts that may arise from configurations, modifications and add-ons permitted under the License Agreement and any patches or workarounds or other changes provided by the licensor of the Licensed Software. Customer will inform SAP immediately about any changes to the Licensed Software. In order to be able to run the underlying Computing Environment, changes to the Licensed Software may be restricted as reasonably determined by SAP with undue delay. SAP will not be responsible for any impairment or malfunctioning of the Cloud Service that is caused by any changes, and System Availability Service Levels will not apply.

2.2   HEC Subscription and – if applicable – S/4HANA Private

(a) **Provision of Licenses**: SAP shall provide the Subscription Software during the Subscription Term solely for installation on the Computing Environment, or for archival or Disaster Recovery Services purposes. Unless otherwise expressly stated in the Order Form and except as set forth in Section 3.2 below, Customer is responsible for the installation of Subscription Software, including upgrades and new releases, into the Computing Environment.

(b) **Support**: The Cloud Service includes SAP Enterprise Support for the Subscription Software as defined in the Order Form.

(d) **Subscription Software Configurations, Modifications and Add-Ons.** Customer has the right to develop and use configurations, modifications and add-ons to SAP's Subscription Software (excluding any third party software) in furtherance of its permitted use of the Subscription Software under this Agreement. Customer is responsible for testing and resolving source code compatibility issues or other conflicts that may arise from configurations, modifications and add-ons permitted under the License Agreement and any patches or workarounds or other changes provided by the licensor of the Licensed Software. Customer will inform SAP immediately about any changes to the Licensed Software. In order to be able to run the underlying Computing Environment, changes to the Licensed Software may be restricted as reasonably determined by SAP with undue delay. SAP will not be responsible for any impairment or malfunctioning of the Cloud Service that is caused by any changes, and System Availability Service Levels will not apply.

2.3   Cloud Service

(a)   **Currently Supported Version of Licensed Software and Subscription Software.**

1.   Customer shall use, and all installations including the initial install of Licensed Software and/or Subscription Software in the Computing Environments shall be, a version or release of the Licensed Software and/or Subscription Software for which software maintenance and user support are current, as provided by the software vendor as specified in the relevant license and/or maintenance agreement with such vendor. For SAP Licensed Software and/or Subscription Software such support (to the extent included in the applicable Order Form or License Agreement) is provided according to the current maintenance phases of SAP software releases as stated in https://support.sap.com/releasestrategy. For the purpose of this provision, "current" herein relates to "Mainstream Maintenance".

2.   SAP expressly points out that if Customer is not on a version or release of the Licensed Software and/or Subscription Software under current maintenance, (i) SAP's abilities for the provision of support may be limited and SAP shall assume no responsibilities for such limitations and (ii) the System Availability Service Levels shall not apply. During the Subscription Term, Customer may be required to upgrade to more recent versions or release of SAP Licensed Software and/or Subscription Software to receive SAP Enterprise Support and the Systems Availability Service Levels, Customer will bear any additional costs related to the implementation of the more recent versions or releases, if any. In the event that "Mainstream Maintenance" is no longer available for the Licensed Software and/or Subscription Software and a new version or release of the Licensed Software and/or Subscription Software is not available, the parties shall in good faith negotiate a mutually agreeable solution, which may require Customer to incur additional costs.

3.	SAP strongly recommends that Customer follows best practices for Software Lifecycle Management as published by SAP Active Global Support. Unless otherwise expressly stated in the Order Form and except as set forth in Section 3.2 below, Customer is responsible for the installation of Subscription Software and Licensed Software, including new versions or new releases, into the Computing Environment.

(b)	**Patches and Operating System Upgrades.**

SAP reserves the right to apply critical application patches and operating system security patches (security patches with priority "very high") and critical operating system upgrades at any time without Customer's prior consent. SAP will use reasonable endeavours to provide Customer with forty-eight (48) hours advance notice regarding the critical patch deployment unless a shorter notice period is required in order to address a critical security issue. In case of downtime during such critical patch deployment and critical operating system upgrades, the parties agree that such downtime will "Emergency Downtime" and shall count towards the aggregate of four (4) hours of Scheduled Downtime for the following calendar month. Non critical security patches (all security patches with priorities "high", "medium", or "low") will be Customer's responsibility and SAP must be engaged by Customer by way of a service request ticket. The parties agree that such upgrades will be performed during Scheduled Downtime or other Agreed Downtime.

(c)	To the extent that the Computing Environment provided by SAP includes Microsoft® software products (e.g. specified in Section "System Set-up Table" in the Order Form), Customer agrees to the comply with the following conditions in connection with the Microsoft® software products:

1.	Customer may not remove, modify or obscure any copyright, trademark or other proprietary rights notices that appear on the Microsoft® software products or that appear during use of the Microsoft® software products;

2.	Customer may not reverse engineer, decompile, or disassemble the Microsoft® software products, except and only to the extent that applicable law, notwithstanding this limitation expressly permits such activity;

3.	any warranties, liability for damages and remedies, if any, are provided solely by SAP and not by Microsoft® or its affiliates or subsidiaries;

4.	any product support for the Microsoft® software products included in the Computing Environment is provided to Customer by SAP and is not provided by Microsoft® or its affiliates or subsidiaries;

5.	all title and intellectual property rights in and to the Microsoft® software products are owned by Microsoft® or its suppliers. Microsoft® software products are protected by copyright laws and international copyright treaties, as well as other intellectual property laws and treaties. Customer's possession, access, or use of the Microsoft® software products does not transfer any ownership of the Microsoft® software products or any intellectual property rights to Customer;

6.	SAP may disclose Customer's information regarding the use of Microsoft® software products to Microsoft® or Microsoft® affiliates or subsidiaries in case of audits;

7.	SAP expressly points out that Microsoft® software products are not fault-tolerant and it is not guaranteed that Microsoft® software products are error free or to operate uninterrupted and shall not be used in any application or situation where such Microsoft® software products failure could lead to death or serious bodily injury of any person, or to severe physical or environmental damage ("High Risk Use"). Examples of High Risk Use include: aircraft or other modes of human mass transportation, control of nuclear or chemical facilities, life support systems, implantable medical equipment, motor vehicles, or weaponry systems. High Risk Use does not include utilization of Microsoft® software products for administrative purposes, to store configuration data, engineering and/or configuration tools, or other non-control applications, the failure of which would not result in death, personal injury, or severe physical or environmental damage.

3.	**SAP RESPONSIBILITIES AND OBLIGATIONS REGARDING CLOUD SERVICE**

3.1	SAP's responsibility shall not extend beyond the Point of Demarcation described in Section 4 below.

3.2	As part of the Cloud Service, SAP will (i) provide the initial installation of the Subscription Software and/or Licensed Software, as applicable, in the Computing Environment, (ii) setup and configure relevant hardware and software monitoring agents for the Computing Environment, and (iii) introduce Customer to SAP's support and communications procedures of the Cloud Services.

3.3	The Cloud Service includes the provision of services for the Computing Environment as conclusively described in the Documentation.

3.4	At Customer's request prior to termination or expiration of an Order Form, SAP shall, within a reasonable time period provide to Customer in a reasonable backup media format being utilized by SAP the Customer Data stored in the Computing Environment. Customer may additionally elect to purchase Transition Services from SAP by entering into a Change Request and paying the applicable fees at SAP's then-current rates as specified in such Change Request as follows: (a) services to transition Customer from the Cloud Services to replacement services provided by Customer or a third party chosen by Customer, and, (b) Customer Data in a format other than the reasonable backup media format being utilized by SAP.

3.5	SAP will nominate a representative called Customer Engagement Service Manager ("CeSM") who will be the Customers prime point of contact with respect to the performance of the HEC Services.

4. CUSTOMER RESPONSIBILITIES AND OBLIGATIONS REGARDING CLOUD SERVICE

4.1 In addition to Customer's obligations set forth in the Cloud GTC and in the Agreement, Customer will change all passwords used to access the Cloud Service at regular intervals, no less frequently than once every six (6) months. If Customer learns of an unauthorized third party having obtained knowledge of a password, Customer will inform SAP thereof without undue delay and promptly change the password.

4.2 Customer is responsible for the connection to the Cloud Service, including the Internet connection to the Point of Demarcation.

4.3 Customer shall use reasonable commercial efforts to ensure that Customer Data and the Licensed Software is free of all viruses, Trojan horses and comparable elements which could harm the Computing Environment used by SAP or its subcontractors to provide the Cloud Service.

4.4 SAP's provision of the Cloud Service is subject to Customer's prompt performance of its responsibilities set forth in the Agreement (including those set forth in the Documentation) and provision of qualified employees and resources required:

(a) Primary point of contact in dealing with SAP (HEC Project Manager), responsible for coordinating all activities and authorized to implement required technical changes.

(b) Current list of key Customer contacts with access to the Computing Environment, including contact role, title, office phone number, cell phone number, e-mail address, etc.

(c) Customer informs SAP on policies and procedures regarding the authorization of network access to the Computing Environment and necessary information regarding requirements for authorization to the Computing Environment (e.g. IP range, VPN Questionnaire, installation number etc.). Customer shall inform SAP of any changes to such information, policies and procedures as soon as practicable without undue delay.

(d) A service user ("S-User") ID in the Computing Environment with the authorizations defined below. This S-User ID, which Customer uses to log on to SAP's Service Marketplace for software download and support, is required by SAP's Cloud Services resources to permit SAP Cloud Services resources to also log on and perform software download tasks necessary to obtain the software for set-up of the Computing Environment. Required authorizations include:

- Sending and/or creating and / or confirming and / or re-opening Customer messages
- SSCR key registration
- Processing service messages
- Opening service connections
- Software download
- Maintaining system data
- Requesting license keys

Customer authorizes SAP to set up and use an S-user with these authorizations. Additionally, in connection with sending and/or creating and/or confirming and/or re-opening Customer messages, Customer authorizes SAP to directly implement a Semi-Automatic Opening (SAO) to enable these messages. Customer will ensure that any authorizations that may be required for third parties or its employees will be provided promptly.

4.5 Customer is and will remain solely responsible for the definition, documentation and execution of its business processes including, but not limited to, configuration of systems management and application and data security policies, batch processing requirements, and compliance with other governmental or regulatory requirements. Customer is responsible to provide SAP necessary and sufficient documentation of its applicable processes in order for SAP to perform its Cloud Service responsibilities under the Agreement.

4.6 If Customer elects to have any services provided by a third party, SAP will have no liability for any defect or failure of the Cloud Service or Computing Environment caused by or related to such third-party services, and Customer will not be entitled to any reduction in fees for the Cloud Service. SAP may deny access to the Cloud Service and/or Computing Environment to any third party service provider which SAP determines in its reasonable discretion poses a security or confidentiality risk to SAP systems, data or intellectual property.
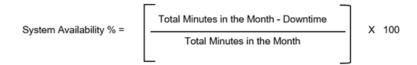
5. SERVICE LEVELS

5.1 System Availability

The following table lists the System Availability applicable to the Computing Environment. SAP shall track and report to Customer the achieved "System Availability" in a monthly summary report. Customer must notify SAP of any claims for any Service Credits within one (1) month after receipt of the monthly System Availability report by filing a support ticket with SAP.

The System Availability shall not apply to Licensed Software licensed by Customer from a third party unless otherwise expressly set forth in the Order Form.

Service Level	Service Credit
PRD: 99.5% System Availability NON-PRD: 95.0% System Availability	HEC Subscription and S/4HANA Private: 2% of Monthly Service Fees for each 1% below the System Availability Service Level, not to exceed 100% of Monthly Service Fees HEC Project and HEC Production: 2% of Monthly Service Fees for each 0.1% below the System Availability Service Level, not to exceed 100% of Monthly Service Fees

"System Availability" for each system/tier as defined in the Order Form is calculated as follows:

$$\text{System Availability \% } = \left[\frac{\text{Total Minutes in the Month - Downtime}}{\text{Total Minutes in the Month}} \right] \times 100$$

Excluded Downtime	Total Minutes in the Month attributable to: (i) Scheduled Downtime, as described in the Order Form and as set forth below (ii) Any Downtime requested by SAP or Customer and mutually agreed by the parties ("Agreed Downtime") (iii) Emergency Downtime, as defined in section 2.3.c above (iv) Downtime caused by factors outside of SAP's reasonable control such as unpredictable and unforeseeable events that could not have been avoided even if reasonable care had been exercised, particularly: • Customer's failure to meet Customer's responsibilities (including ordering maintenance for the Licensed Software, using a version or release of the Licensed Software and/or Subscription Software on current maintenance) as set forth in the Agreement. • Downtime caused by Customer (or a third party on behalf of Customer), • interruptions as a result of requirements stipulated by a third party manufacturer of the Licensed Software, • interruptions or shutdowns of the Computing Environment (or portions thereof) resulting from the quality of the Licensed Software provided by the Customer and/or Customer's configurations, modifications and add-ons of the Licensed Software, Subscription Software or Computing Environment, unless this is the responsibility of SAP under this Agreement, • restore times of user data (recovery of database data from a media backup) where SAP was not the root cause for the required restoration.
Scheduled Downtime	Scheduled at a mutually agreed time (as listed in the Order Form), not to exceed four (4) hours per month per system, excluding functional updates.

5.2 Other Service Levels

Description	Computer Environment segment to which Service Level applies	Service Levels
Backup Frequency and retention period for Databases	PRD	Daily full backup and log file backup per SAP product standard. 30 days retention time. Backup of the PRD will be replicated to an alternate data center or location.
	NON-PRD	Weekly full backup and log file backup per SAP product standard. 14 days retention time. Backup of the NON-PRD will be replicated to an alternate data center or location.
Backup Frequency and retention period for File systems	PRD	Monthly full backup and daily incremental. Two months retention time. Backup of the PRD will be replicated to an alternate data center or location.
	NON-PRD	Monthly full backup and daily incremental. Two months retention time. Backup of the NON-PRD will be replicated to an alternate data center or location.
Incident Reaction Time for Incident Management	Incident Priority Very High	20 minutes (7x24) and problem determination action plan within 4hrs for PRD
	Incident Priority High	2 hours (7x24) for PRD 4 hours [Local Time on Business Days] for NON-PRD
	Incident Priority Medium	4 hours [Local Time on Business Days] for PRD and NON-PRD
	Incident Priority Low	1 Business Day for PRD and NON-PRD

5.3 Incident Priorities

The following priority levels apply to all Incidents (such priority initially to be assigned by Customer, and which may be re-assigned by SAP based on the criteria below and acting reasonably):

(a) **Very High**: An Incident should be categorized with the priority "Very High" if the incident reported has very serious consequences for normal business processes or IT processes related to core business processes, and urgent work cannot be performed. This is generally caused by the following circumstances:

- A PRD system is completely down.

- The imminent go-live or upgrade is jeopardized. OR

- The core business processes of Customer are seriously affected.

The Incident requires immediate processing because the malfunction may cause serious losses.

(b) **High**: An Incident should be categorized with the priority "High" if normal business processes are seriously affected. Necessary tasks **cannot** be performed. This is caused by incorrect or inoperable functions in the Computing Environment that are required immediately. The Incident is to be processed as quickly as possible because a continuing malfunction can seriously disrupt the entire productive business flow.

(c) **Medium:** An Incident **should** be categorized with the priority "Medium" if normal business processes are affected. The problem is caused by incorrect or inoperable functions in the Computing Environment. A message should be categorized with the priority "Medium" if normal business transactions are affected.

(d) **Low:** An Incident should be categorized with the priority "Low" if the problem has little or no effect on normal business processes. The problem is caused by incorrect or inoperable functions in the Computing Environment that are not required daily, or are rarely used.

5.4 Service Level Reporting

SAP shall track and report to Customer the Service Levels set forth herein in a monthly summary report.

(a) In the event that one or more of the Services Levels set forth herein are not met, Customer may notify CESM and request SAP to analyze Service Levels metric statistics based on the monthly summary report provided by SAP.

(b) SAP will then promptly (i) determine the root cause or possible root cause of the failure (if known) to meet the Service Level, and (ii) unless failure is excused, develop a corrective action plan, and submit such plan to Customer for written approval (which will not be unreasonably withheld or delayed) and, following Customer's written approval implement the plan in a reasonable period of time (and in accordance with any agreed timescales).

(c) If applicable, the specific Service Credit as described in Section 5.5 below shall apply.

(d) SAP will be relieved of its obligation to pay applicable Service Credits and will not be in breach of the Service Level where the root cause analysis (as reasonably performed by SAP) indicates the failure to meet the relevant Service Level was caused by an event that qualifies as Excluded Downtime. In the event that Customer disagrees with the root cause analysis, the HEC Project Manager and the CESM will discuss the root cause analysis and shall agree on an escalation procedure.

5.5   Service Level Failures

(a) **Service Credits.** Subject to Section 5.1 of this HEC Supplement, and except as excluded under Section 5.4 above, if and to the extent SAP fails to meet the System Availability Service Level set forth in Section 5.1, Customer is entitled to a Service Credit which is calculated as the sum of the Service Credits for both NON-PRD and PRD for SAP's failure to meet the respective System Availability Service Level. Under no circumstances will the total maximum Service Credits: (i) for any one month, exceed 100% of the Service Fee for that month; and, (ii) for any given contract year, exceed in the aggregate an amount equal to one-third of the annual Service Fee charged for the contract year (or one third of the total Service Fee charged if the term as defined in the applicable Order Form is less than one (1) year). Otherwise section 3.2 of the Cloud GTC shall apply.

(b) When Customer's entitlement of the Service Credit is confirmed by SAP in writing (email permitted), SAP will apply such credit to a future invoice relating to the Cloud Service or provide a refund if no future invoice is due under the Agreement.

(c) **Termination.**

Deviating from clause 3.2 of the Cloud GTC the following shall apply:

In the event of SAP's failure to meet the System Availability Service Level of the PRD Computing Environment as specified in section 5.1 above for three (3) consecutive months, Customer may terminate the applicable Order Form by providing SAP with written notice within thirty (30) days of Customer's receipt of the respective Service Level report. Termination shall become effective one (1) month after SAP's receipt of such notice (or any later date set out by Customer in its notice).

6.   **SAP Security for the Cloud Services**

6.1   SAP Cloud Security Framework

SAP has implemented and will maintain security measure for the Cloud Services as set forth in the SAP Cloud Security Framework, or its equivalent during the term of the Order Form between Customer and SAP for the Cloud Services. SAP will provide a copy of the SAP Cloud Security Framework to Customer upon request.

6.2   Security Audits

During the term of the Order Form between Customer and SAP for the Cloud Services, SAP shall maintain, at its own expense an audit report by a nationally recognized outside audit firm conforming with the American Institute of Certified Public Accountants' Service Organization Control (SOC) Reports, or its equivalent, and shall provide or make available to Customer, at Customer's request, a copy of its SOC 1 and/or SOC 2 reports during the relevant audit period for the applicable PRD systems within the Computing Environment, which shall be updated at least annually for the applicable PRD systems.

7. **Optional: Disaster Recovery Services (if selected in an Order Form)**

7.1 Definitions

"Disaster" means an event of substantial extent causing significant disruption of the delivery of the Cloud Services and may include physical damage or destruction, to the SAP data center or Computing Environment. Disasters can be natural disasters (such as floods, hurricanes, tornadoes or earthquakes) and/or human-induced disasters (including hazardous material spills, infrastructure failure, and terrorism). A Disaster is typically not limited to one individual system or landscape but larger parts of an infrastructure.

"Disaster Recovery Services" (or "DR Services" or "DR") means the disaster recovery service, process, policies and procedures that are related to preparing for recovery or continuation of technology or infrastructure identified in the applicable Order Form as included in the DR Services. DR is not a process to overcome outages of isolated systems due to hardware or software incidents (i.e., DR is not a substitute or replacement for System Availability Service Levels described in this HEC Supplement).

"Short Distance DR" or "Metro DR" means a Disaster Recovery Service in which SAP provides the DR Services (with the failover systems) from a data center less than 80km away from the standard data center, providing lower cost and smaller RPO but more risk regarding a local disaster impacting both data centers.

"Long Distance DR" or Regional DR" means a Disaster Recovery Service in which SAP provides the DR Services (with the failover systems) from a data center over 80km away from the standard data center, to minimize risk of a local disaster affecting both data centers.

"RPO" (or "Recovery Point Objective") means the maximum tolerable period in which Customer data might be lost due to a Disaster (i.e. time between last backup or last data replication and point in time a Disaster occurred).

"RTO" (or "Recovery Time Objective") means the duration of time in which the Subscription Software/ Licensed Software and PRD is unavailable preventing Cloud Services in Disaster case (i.e. time between a Disaster and point in time the systems are available again).

7.2 SAP provides standard DR Services with predefined parameters regarding RPO/RTO for defined system characteristics to the extent that prerequisites and conditions are fulfilled. SAP shall be excused from its DR Services obligations to the extent (and for the duration during which) Customer fails to achieve any of the following pre-requisites and such failure prevents SAP from performing the applicable DR Services:

(a) The applicable components are technically used as provided by SAP; any custom or third party developments or modifications affecting applicable components are not covered (excluding development/modifications done in ABAP only systems using SAP ABAP standard development tools, and excluding any third party products embedded in the SAP software).

(b) The applicable systems stay within boundaries regarding size and layout as set forth in the Agreement.

(c) Interfaces in DR scope are limited to interfaces/protocols supported by SAP systems out of the box (e. g. RFC, web service calls, Flat Files, XML and IDocs) for components located in the data center. Any interfaces that require additional solutions or components within the Computing Environment, as well as external connectivity, are outside of the standard DR scope.

(d) All repositories containing Customer Data that need to be replicated to the DR site are databases; otherwise, RPO times can be substantially longer, thus does not fall under the definition of standard DR services.

7.3 The relevant parameters depend on the chosen DR layout (Metro DR/ Regional DR), the database platform used, and the adherence to above listed conditions for standard DR services. The predefined parameters for these standard DR services are:

	Short Distance DR (Metro DR)	Long Distance DR (Regional DR)
Database: SAP HANA	Single Node [1] RTO=12hrs; RPO=30mins Multi Node [2]: RTO=12hrs; RPO=0hrs	RTO=12hrs; RPO=30mins
Database: Sybase ASE	RTO=12hrs; RPO=30mins[3]	RTO=12hrs; RPO=30mins

[1] HANA Single Node: describes a configuration, where the HANA database system resides on one single server node.

[2] HANA Multi Node (or HANA Scale Out System): describes a HANA database system that is installed on more than one host but identified by a single system ID (SID). It is perceived as one unit from the perspective of the administrator, who can install, update, start up, shut down, or backup the system as a whole.

[3] Sybase ASE database replication is currently not supported in continuous mode, which would be the prerequisite for an RPO of 0. If such feature becomes available and the respective systems are updated to that new version and successfully tested, both parties will at that time agree on a modified RPO of 0 hours via a Change Request without additional service charge.

7.4 Performance characteristics may be reduced while operating under DR Services failover; provided, however, that such reductions in performance shall only be excused to the extent the Disaster is also a force majeure event.

7.5 **Other DR Services** are not in the scope of SAP's standard DR Services. If requested by the Customer, such additional DR Services ("Additional DR Services") need to go through a further DR assessment based on Customer architecture and requirements. Details on the implementation of any such Additional DR Services may be agreed upon with Customer, including revised estimated failover times and maximum data loss, and the parties may mutually agree to the applicable RPO and RTO for such Additional DR Services as result of the implementation in a Change Request. As part of this process, SAP will use reasonable efforts to bring RPO/RTO for the System Setup as defined in the Order Form in a similar range as for the defined packages.

7.6 **Regular DR Testing**. SAP offers one annual DR failover-test as part of the DR Services to test the reliability of the DR Services. SAP shall promptly re-perform any DR recovery tests that fail to achieve the applicable standards and report any failures to Customer. For DR Service readiness, Customer will fulfill its infrastructure and business preparation as set forth in the Order Form, and as may be further mutually agreed between the parties in a Change Request. Customer business continuity objectives may require additional Customer efforts in addition to and beyond the scope of the Cloud Services and/or DR Services hereunder. Each Disaster Recovery Service implementation requires Customer's testing and causes additional Agreed Downtimes. The System Availability calculation for the affected month(s) shall exclude these additional Agreed Downtimes.