AVEVA™ Unified Engineering Service Description

Contents

AVEVA Unified Engineering

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Document Purpose and Audience

Document Purpose

This document describes the delivery of AVEVA Unified Engineering, including its key features and limitations, as well as the operational parameters.

This document must be read in conjunction with the CONNECT service description, which describes the common services available for all functional digital services on CONNECT. Any additions or exceptions to the common services are described in this document.

This document must also be read in conjunction with the Name allocation manager service description.

Audience

The audience of this document are IT departments and business decision makers who are investigating whether to leverage AVEVA's software-as-a-service offerings.

About AVEVA Unified Engineering

AVEVA Unified Engineering brings together AVEVA's latest advancements in data centric authoring tools with centralized cloud data management to enable real-time project collaboration around the globe.

AVEVA Unified Engineering enables unparalleled ease, speed, and flexibility for on-demand deployment for multiple internal and external stakeholders.

AVEVA Unified Engineering has been created for customers who are investing in capital assets or supporting a digital twin and want to maintain control and visibility of their digital asset, while also ensuring visibility to on-going engineering and design progress and deliverables.

- **Data managed via CONNECT.** Whether managing complex engineering data during a capital project or maintaining asset information to support a digital twin, AVEVA Unified Engineering offers the ability to work with engineering and design data that is centrally managed. Access to the solution is enabled through traditional on-premises applications, with the additional benefit of storing data to a centralized cloud store.

- **Simplified administration.** Deploying AVEVA Unified Engineering means that complex project teams can easily be established to allow all roles within the project access to the data they need to do their job, while protecting critical IP and separating contractual scopes. Additionally, built-in reporting provides data on license consumption, system usage, access rights, and other key metrics so that administrators can monitor environmental configuration and usage.

- **Full integration capabilities.** AVEVA Unified Engineering enables easy exchange of data and deliverables with other AVEVA solutions and third-party tools. This includes pre-integrated configurations with AVEVA™ Asset Information Management, AVEVA™ Deliverables Management, AVEVA™ Enterprise Resource Management, and AVEVA™ Point Cloud Manager solutions, allowing customers to quickly extend AVEVA Unified Engineering into a full EPC 4.0 environment.

- **Rapid deployment for true collaboration.** As a near real-time, multi-discipline, globally-accessible, and data-centric engineering and design authoring solution, the AVEVA Unified Engineering solution can be configured and ready for use within days for the shortest time to value and lowest cost of ownership.

This document describes the services associated with Unified Engineering.

Service Overview

The following are components of AVEVA Unified Engineering:

- **CONNECT.** The industrial cloud platform for Unified Engineering provides these functions:

  o User management, Flex Credits, usage and consumption, auditing and account management.

  o As a service running on CONNECT, the Spectrum Service (Spectrum) persists the project data in the cloud, providing access to this data via cloud-based services. Spectrum connects engineering project teams across locations to centralized project data. Spectrum provides direct access to that centralized project data, while allowing functional applications to operate as usual on-premises.

  o Name allocation manager is a multi-tenanted naming system that establishes a standardized mechanism for allocating names while adhering to client-defined conventions and numbering systems. It accommodates diverse naming conventions across clients, industries, or domains within a scalable and customizable cloud environment. For additional information about the service, please read the Name allocation manager (NAM) service description.

- **Functional authoring applications.** The end user discipline applications used to execute a project. These applications operate on-premises with or without a connection to the Spectrum data source. The discipline applications as part of Unified Engineering allow for the execution of complex multi-discipline projects.

- **Interoperability services.** AVEVA Unified Engineering includes a rich set of interoperability features, supporting the need for data exchange with other AVEVA and third-party products and solutions.

Architecture

The following diagram shows the shared services, dedicated infrastructure, and supporting back-end services making up an AVEVA Unified Engineering environment.
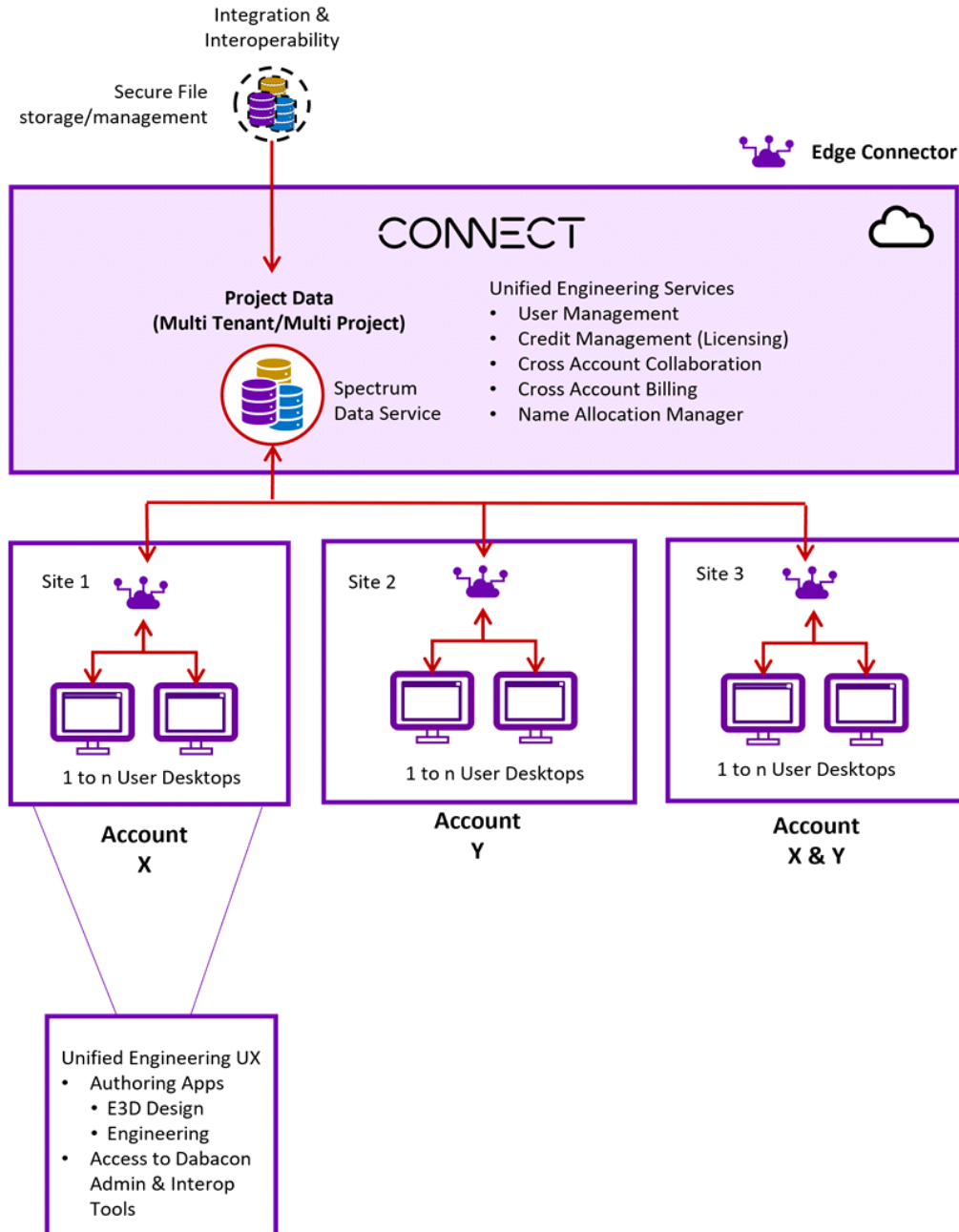
CONNECT

CONNECT provides the cloud platform to run CONNECT services. These CONNECT services can be deployed quickly and securely, ready for configuration, and are operated by AVEVA.

CONNECT comprises:

- **CONNECT functional services.** These are the digital functional services running on CONNECT. For example, AVEVA Asset Information Management - Advanced, AVEVA Point Cloud Manager, and others.

  To learn more about these services, see the respective service descriptions.

- **CONNECT platform.** The platform provides common services, including:
  - User authentication services including federation to external identity providers
  - User authorization and permission management
  - The communities function, which allows for data sharing between different customers, with each customer responsible for their respective AVEVA product licenses
  - Customer account management
  - Health monitoring services
  - Licensing and entitlement services
  - Cloud storage
  - Reporting for credits, service usage, and audit capabilities
  - Technical standards, security standards, data protection and business continuity considerations
  - Initial service provision for CONNECT functional services
  - Ongoing maintenance and operation of services
  - Customer Technical Support available 24X7

- **CONNECT Customer Account**

  Core to CONNECT is the Customer Account, which provides a customer managed environment in which a customer can subscribe to one or many functional services, and structure the account in a logical way.

  CONNECT enables you to provide access management to services at whatever level you desire. When two or more functional services are subscribed into a Customer Account, a trusted relationship is established between the services. User management is centralized across services and logical folders to structure an account.

  In this way CONNECT provides the environment that enables you to build a cloud solution from multiple functional services, integrate with on-premises and other clouds in a simple but managed way, ensuring security and entitlement are maintained.
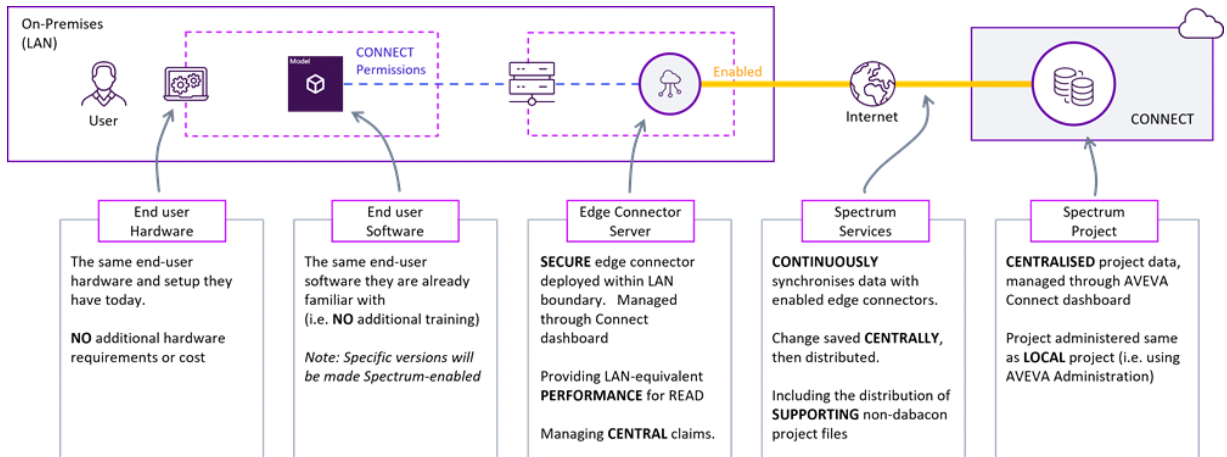
Spectrum Service (Spectrum)

Spectrum is a multi-tenanted platform delivered by AVEVA through CONNECT. It persists the project data in the cloud, providing access to this data via cloud-based services. Spectrum provides easy and quick access to updates made by project teams, wherever they are located, as if they were all working on the same single site project.

Key features

- Spectrum provides the backbone support for AVEVA products that use the AVEVA DABACON platform. It is a background service that enables globally dispersed teams to collaborate on any DABACON product from AVEVA.

- Spectrum provides flexibility in deployment by supporting on-premises reference projects (for example, Master Catalogues).

- Spectrum is easy to adapt mid-project (for example, to bring a new location online), therefore removing administration complexity and overhead associated with changing project requirements.

Architecture

Spectrum is a solution on CONNECT that supports project data being accessed via the Spectrum service. The data in CONNECT storage is the "single source of truth". Each location that is using the project installs an edge connector at that location. The edge connector caches all the project data, providing high-performing and secure access to project users in the location.

AVEVA Unified Engineering applications run on the user's desktop at their location, accessing databases and project data through Spectrum services running on the edge connector. When a user saves data, changes are written to cloud-hosted Spectrum storage by the client application, which in turn triggers the edge connector caches at all locations to be updated. Various other metadata services are also hosted in CONNECT.

The following diagram shows three geographical locations with four corporate networks, each with their own edge connector.
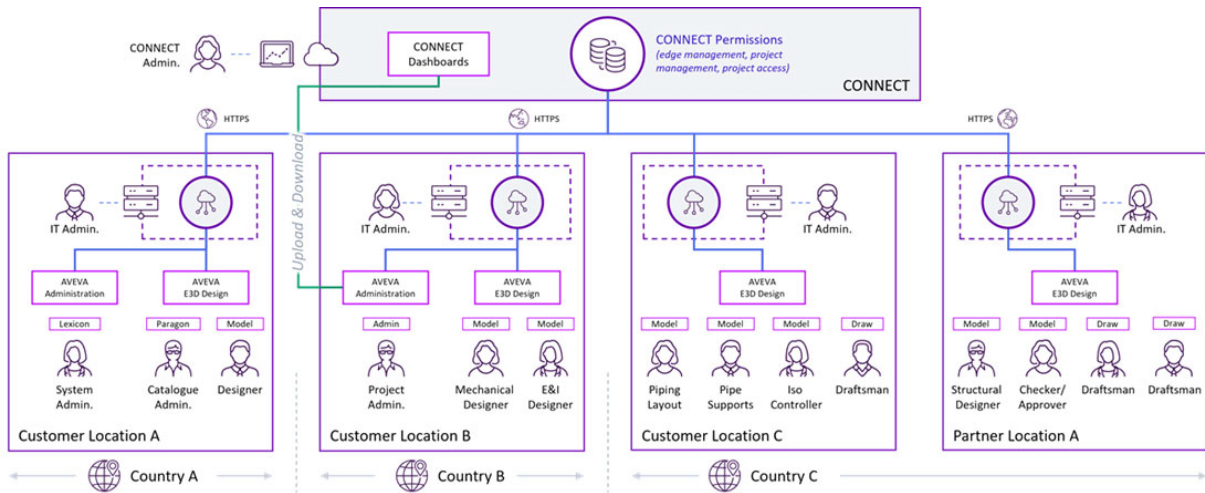

Data Sharing with Communities

Data sharing with communities allows one CONNECT account to create a community and invite other CONNECT accounts to join the community. The account that owns the community can share resources (such as projects from Unified Engineering-Spectrum) into the community. For example, a complex project administrator may want subcontractors or other specialists to collaborate on a single project. Customers can create different communities for different business partners (accounts) they want to share data with.

The account that owns the community can control which access is available through the community. Each account manages their own users' access to the shared resources in the community. All accounts in the community, regardless of their geographic location, have a minimum of Read access to the shared resource information and underlying data. Additional access levels allow increased rights to data shared in the shared resource. Data added to a shared community is viewable or editable, dependent on roles, by all other parties of the community. Each respective party is responsible for controlling what data they decide to share. Data shared through a community will not affect the region where that data is hosted and is independent of the region for the invitee accounts.

CONNECT allows customers to configure folders and services to aid in compliance with data residency requirements as needed.
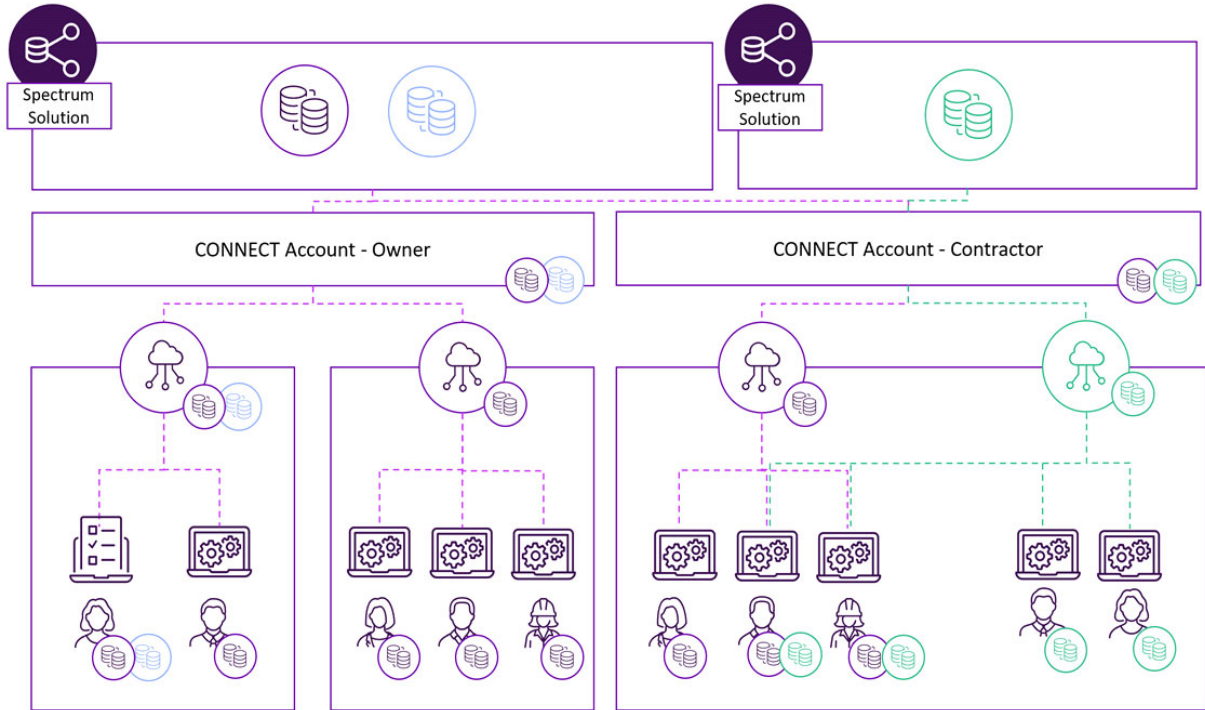
Unified Engineering Components

AVEVA Unified Engineering is delivered as three separate installer packages - Client, Server, and Model Simplification. The components are as follows:

Product	Client	Server
AVEVA Unified Engineering	Yes	Yes
AVEVA E3D Projects	Yes	Yes
AVEVA UE Gateway	Yes	Yes
AVEVA Model Simplification*	Yes	Yes
AVEVA Client Cache Service	Yes	Yes
AVEVA Integration Service (AIS)	No	Yes
AVEVA Gateway Data Publisher	No	Yes

*Model Simplification is a separate installer package.

For exact versions of the applications included with each release, see the Release Notes of the respective products.

Updates and Versioning

AVEVA Unified Engineering is comprised of the on-premises Unified Engineering product components and the Unified Engineering – Spectrum service on the CONNECT cloud platform.

- Unified Engineering – Spectrum service is updated and deployed on a regular cadence; each new version is immediately applied to cloud hosted projects.

- Unified Engineering Edge Connector services check for updates daily; any required updates are applied automatically.

- Unified Engineering is updated on a regular cadence and is available from the AVEVA Technical Support website.

AVEVA reserves the right to update Unified Engineering – Spectrum or the Unified Engineering Edge Connector or both at any time. This change may necessitate a required update to AVEVA Unified Engineering (on-premises product components), to ensure full feature capability and data integrity.

All projects are **required to be upgraded within a six-month period** of a new Unified Engineering product version being made available. This requirement will be communicated through product release notes.

For all AVEVA Unified Engineering customers, only the latest AVEVA Unified Engineering product version will be supported. Enhancements and bug fixes will only be delivered to the latest product version.

The AVEVA status dashboard provides updates regarding the status and system health of cloud offers: https://status.connect.aveva.com/

Notifications for scheduled maintenance updates to AVEVA solutions are published to the status dashboard. Along with regular updates, updates regarding any interruptions to service are provided until the status returns to normal. You may also subscribe to relevant alerts to be notified of postings as they are made.

Interoperability Services

AVEVA™ Unified Engineering includes a rich set of interoperability features, supporting the needs for data exchange with other AVEVA and third-party products and solutions. Most of these features are built into the Unified Engineering applications, while other supporting features such as AVEVA Integration Service and AVEVA Application Service are separate services. The Unified Engineering Interoperability Services are as follows:

- **Import/Export of 3D and 2D CAD Models.** This includes a range of features allowing import and export of third-party CAD models and drawings including STEP, IFC, DWG, DXF, PDF, and a number of native CAD formats.

- **Discipline specific data exchange features.** For example, used for Pipe Spools, Pipe Stress & Structural Analysis, or import of Terrain models.

- **Compare&Update**: Allows data transfer with other AVEVA authoring tools such as AVEVA P&ID, AVEVA Diagrams, AVEVA Electrical, AVEVA Instrumentation, as well as third-party applications through the AVEVA Integration Service.

- **AVEVA Point Cloud Manager Integration.** Allowing the use of point clouds inside AVEVA E3D for reference during modelling.

- **AVEVA ERM Integration (on-premises).** A set of features allowing exchange of data with AVEVA Enterprise Resource Management, including catalogue management, bills of materials, and procurement/construction work packages.

- **AVEVA Deliverables Management.** Deliverables can be published from AVEVA Unified Engineering to AVEVA Deliverables Management. Deliverables may also be registered, versioned, baselined, and returned to Unified Engineering with comments.

- **AVEVA Asset Information Management Integration.** Integration with AVEVA Asset Information Management, allowing publish and transfer of information to AVEVA Asset Information Management through the IE&D gateway, as well as consuming AVEVA Asset Information Management information within E3D using the design-in-context feature.

- **AVEVA Integration Service.** Provides API-based exchange of data with third-party data sources and is also used internally for AVEVA Enterprise Resource Management integration.

- **Generic interoperability features.** A range of features for data import/export and manipulation, such as Excel imports and exports, DATAL, PML, and .NET APIs.

Data Ownership

AVEVA has designed capabilities that demonstrate value at scale and complement the way customers provide, use, manage, and share their AVEVA cloud-managed data. The data a customer provides, generates, and receives through sharing is exclusively the customer's responsibility to manage or share. It is simple for a customer to manage the selection of data and leverage communities to share the data with external partners or vendors.

CONNECT communities help you maintain control of and share your data with external trusted business partners, rather than make copies of your data in external partners' systems and tenants.

Service Limitations

AVEVA Unified Engineering has the following limitation:

- The Unified Engineering – Spectrum service may be enabled only in the Europe - West (EU-West) region as all DABACON data is stored in Europe.

For information about other limitations and boundaries of AVEVA Unified Engineering, see the release documentation for the respective products.

Regional Cloud Availability

The Spectrum solution is accessed through the Unified Engineering suite of client applications by the end user. Communication is via the public internet using HTTPS/TLS.

The Unified Engineering suite of applications can be installed in any location. The Spectrum Service uses the following regions:

- Data stored in Azure West Europe (Amsterdam) and Azure North Europe (Dublin) is available worldwide.

- Some non-DABACON data is backed up in East US (Virginia).

Note AVEVA Unified Engineering is not provided from any cloud regions based in China, as these are autonomous facilities operated in isolation from cloud regions outside of China. Cross-region replication and operations between China regions and outside of China are not supported.

Users inside China can expect high network latency when connected to any web services outside of China. As such, AVEVA Unified Engineering cannot formally support users inside China.

Hardware and Software Requirements

The AVEVA Unified Engineering solution has the same requirements as for AVEVA E3D Design. For more information, see the AVEVA Unified Engineering and the AVEVA Unified Engineering - Spectrum documentation.

For the Unified Engineering Edge Connector, the requirements are:

- Physically on the same LAN as the AVEVA E3D Design installation (<5ms ping).

- Must be installed on a Windows operating system. Supported versions: Windows 10, Windows 11, Windows Server 2019, Windows Server 2022.

- Must have access to port 443.

- Must have two ports for communication with AVEVA E3D Design. The default ports are 5005 and 5006, but these are configurable.

- Hardware should have the equivalent specifications to a local project server, including sufficient disk space for DABACON project data.

Security Standards and Compliance

AVEVA Unified Engineering implements the following to ensure a high level of security.

Security

The Spectrum solution is a cloud native offering built on Microsoft Azure and automatically leverages its security features.

In addition to the technologies and architectural practices that ensure high security for CONNECT, Spectrum restricts access by project. Users must be assigned a role for a given project to be able to access the data and make changes.

To control user access, for example if the user leaves the company or for some other reason needs to be blocked permanently or temporarily, the user account can be restricted by removing roles or group membership in CONNECT user management. User administration is the responsibility of the assigned customer administrator(s).

Network Encryption

- TLS encryption client to edge

- All communication is via HTTPS

- Authentication via CONNECT

Decommission of the Service

Upon customer request and confirmation from the customer to decommission the service, AVEVA initiates the following:

- Deletion of all customer data held in databases, file storage, and backups.

- The data can be recovered within 30 days of the request.

- It is recommended that customers download their projects using AVEVA Administration before removing the Spectrum service.

- Decommissioning will also occur after expiry of contract.

High Availability, Business Continuity, and Data Protection

To ensure high availability, business continuity, and data protection, AVEVA Unified Engineering follows the time intervals given below.

- **User Profile and Data.** See the CONNECT service description.

- **Disaster Recovery**

Spectrum employs continuous backups and allows for data to be restored to any point in time. All data, including backups, is replicated to a secondary region.

In the event of a service failure, AVEVA initiates a recovery process in accordance with RPO and RTO objectives detailed in the following tables:

Cloud Service	Recovery Point Objective (RPO)
Spectrum data service	2 Hours

Cloud Service	Recovery Time Objective (RTO)
Spectrum data service	24 hours

AVEVA is responsible for the following:

- Maintaining the service to meet the stated monthly Service Level Agreement (SLA) of 99.9% uptime for the Spectrum cloud solution, including access to the data service and the project data stored within.

AVEVA is not responsible for the following:

- The Service Level Agreement (SLA) does not cover the applications that Unified Engineering includes that access the data. If an issue is found in an application, this is covered under the specific product support agreement. Customers should follow the normal process of raising a support incident, which will be reviewed within the agreed response time.

- The SLA does not cover the Unified Engineering Edge Connectors, as these are hosted on customer hardware. Customers are responsible for ensuring the operational health of the Edge Connectors. This should include meeting the minimum specifications for hardware and the operating system, and ensuring networking requirements are met to ensure reliable connectivity.

- Customer-side equipment, software, and network, which includes desktop hardware, operating systems, and internet access (including quality of service).

Service Level Commitment

AVEVA Cloud Services are governed by the AVEVA General Terms and Conditions.

The AVEVA Cloud Service Level Commitment is a supporting document that describes the service level commitment for all available AVEVA Cloud Services.

Both documents are available on the AVEVA web site at: https://www.aveva.com/en/legal

Exclusions

- Infrastructure Availability: The Service Level Agreement (SLA) does not include non-availability due to scheduled or emergency maintenance of the application services or CONNECT.

- Service levels are applicable to production environments only.

Additional Services

AVEVA offers an extensive collection of Customer Success Accelerators, well-defined, outcome-based services that are designed to ensure you realize the maximum benefit from your investment in our software through all the lifecycle stages of your software application.

For more details, visit the Customer Success Accelerators site at https://www.aveva.com/en/support/customer-first/success-accelerators/.