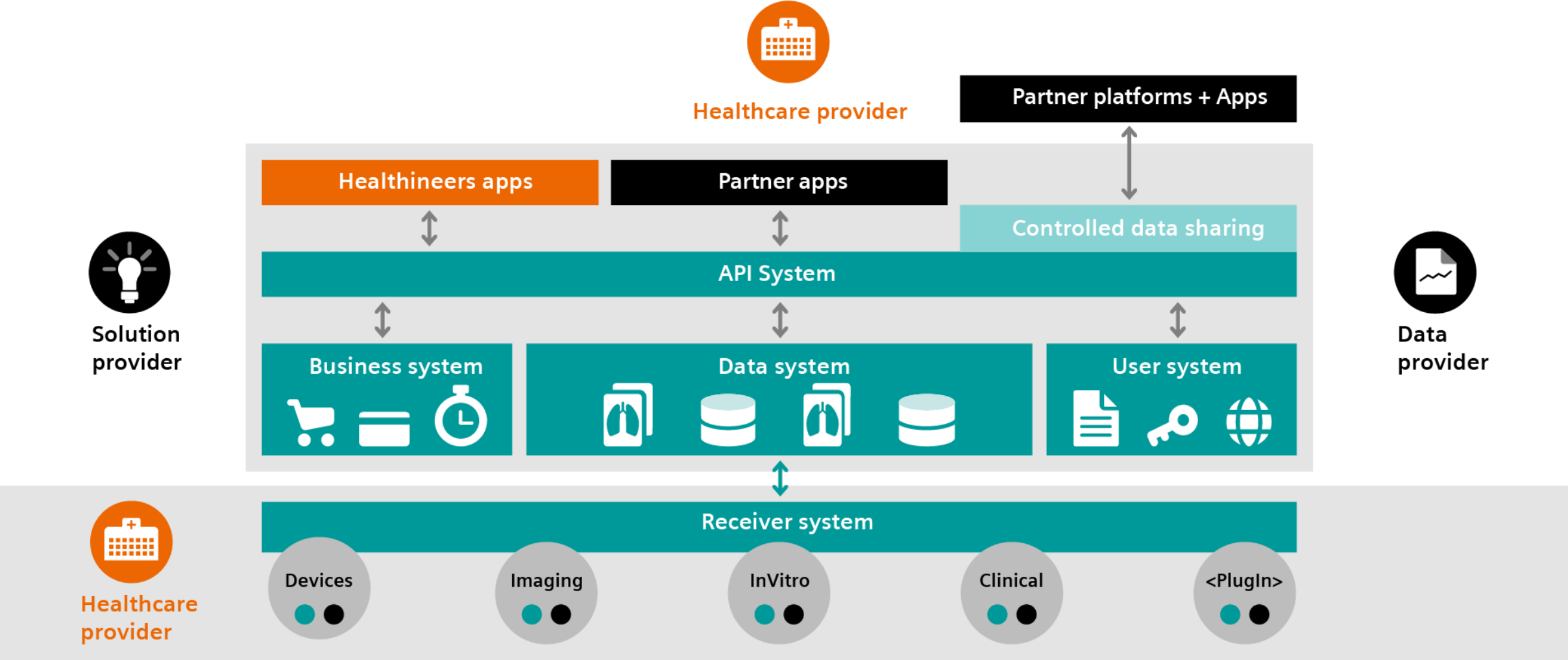


- teamplay consists of multiple **teamplay Core Apps** and the **teamplay Cloud Platform**
- The **teamplay Core Apps** are **focused on clinical radiology use cases** and offer radiation dose monitoring, scanner fleet usage and performance analysis, examination protocol management, benchmarking with other institutions and medical image viewing and sharing functionality – in sum a solution for supporting efficiency improvements in radiology departments
- The **teamplay Cloud Platform** also serves **3rd-party partner apps and services**
- teamplay is the **technical infrastructure and data layer of an ecosystem platform** which is fostering a community network of healthcare providers, partner companies, research institutions and also patients
- teamplay is **built for Azure exclusively** and uses mostly PaaS and Containers
- teamplay is **fully developed, built and deployed out of Azure DevOps**
- teamplay has pioneered Cloud-based offerings and platform business models within Siemens Healthineers, now many other groups in the company are starting to adopt the model
- See also <https://www.siemens-healthineers.com/infrastructure-it/digital-ecosystem/teamplay>

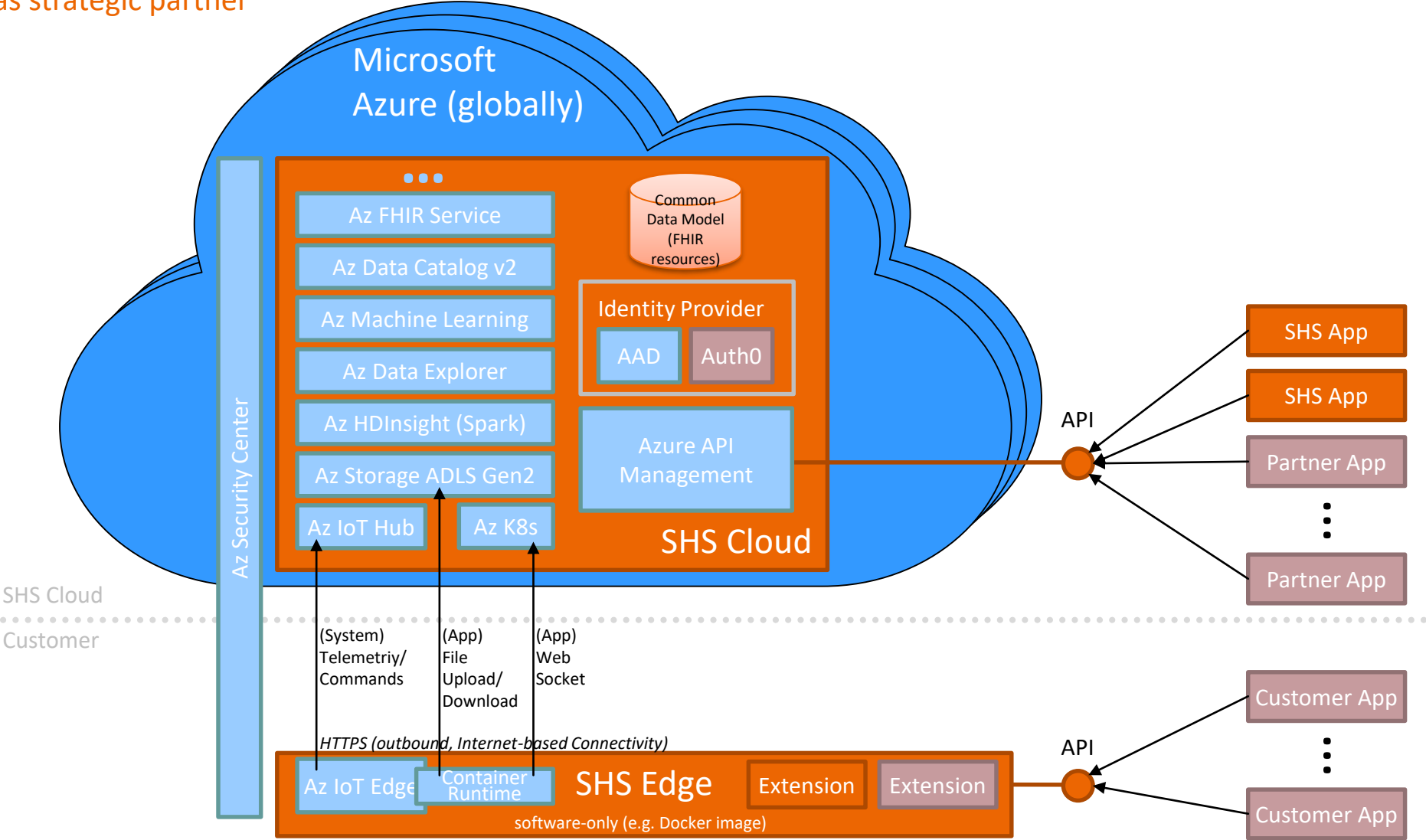
teamply Architecture Overview

Logical Building Blocks

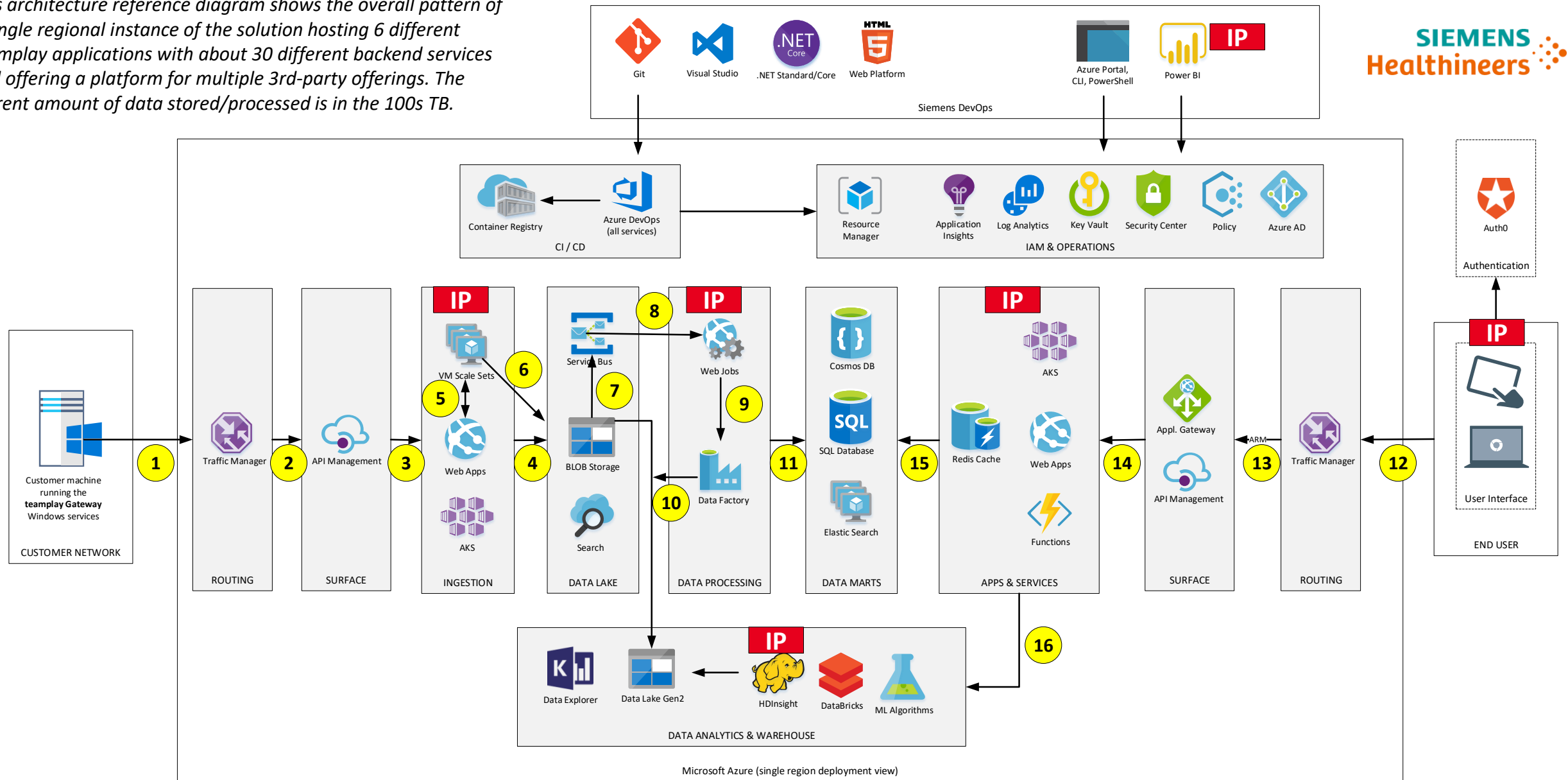


teampay Cloud Platform

Microsoft as strategic partner



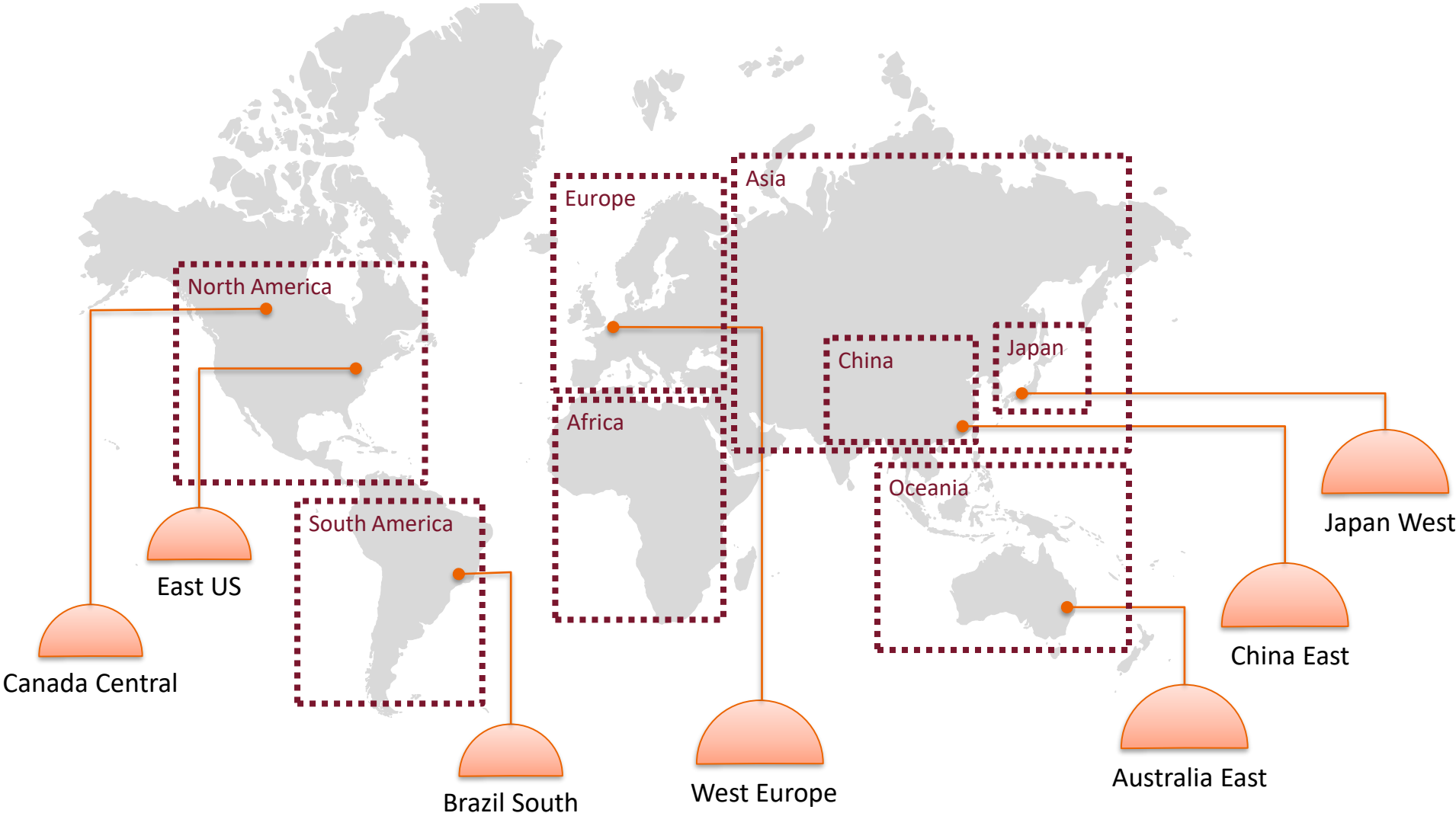
This architecture reference diagram shows the overall pattern of a single regional instance of the solution hosting 6 different teamply applications with about 30 different backend services and offering a platform for multiple 3rd-party offerings. The current amount of data stored/processed is in the 100s TB.



- 1 Data upload request
- 2 Routing within geography
- 3 Request validation & policy evaluation
- 4 Store data base on metadata
- 5 Request malware scan
- 6 Copy data for malware scan
- 7 Notify about new data
- 8 Reliable message delivery, competing consumers
- 9 On message or schedule trigger copy of selected data
- 10 Copy selected data to/from analytics storage
- 11 Ingest data into data marts
- 12 User queries for data in app
- 13 Routing within geography
- 14 Request validation, policy evaluation, routing
- 15 Query and retrieve data
- 16 Query data from warehouse eventually

teamply Deployment

Global Overview

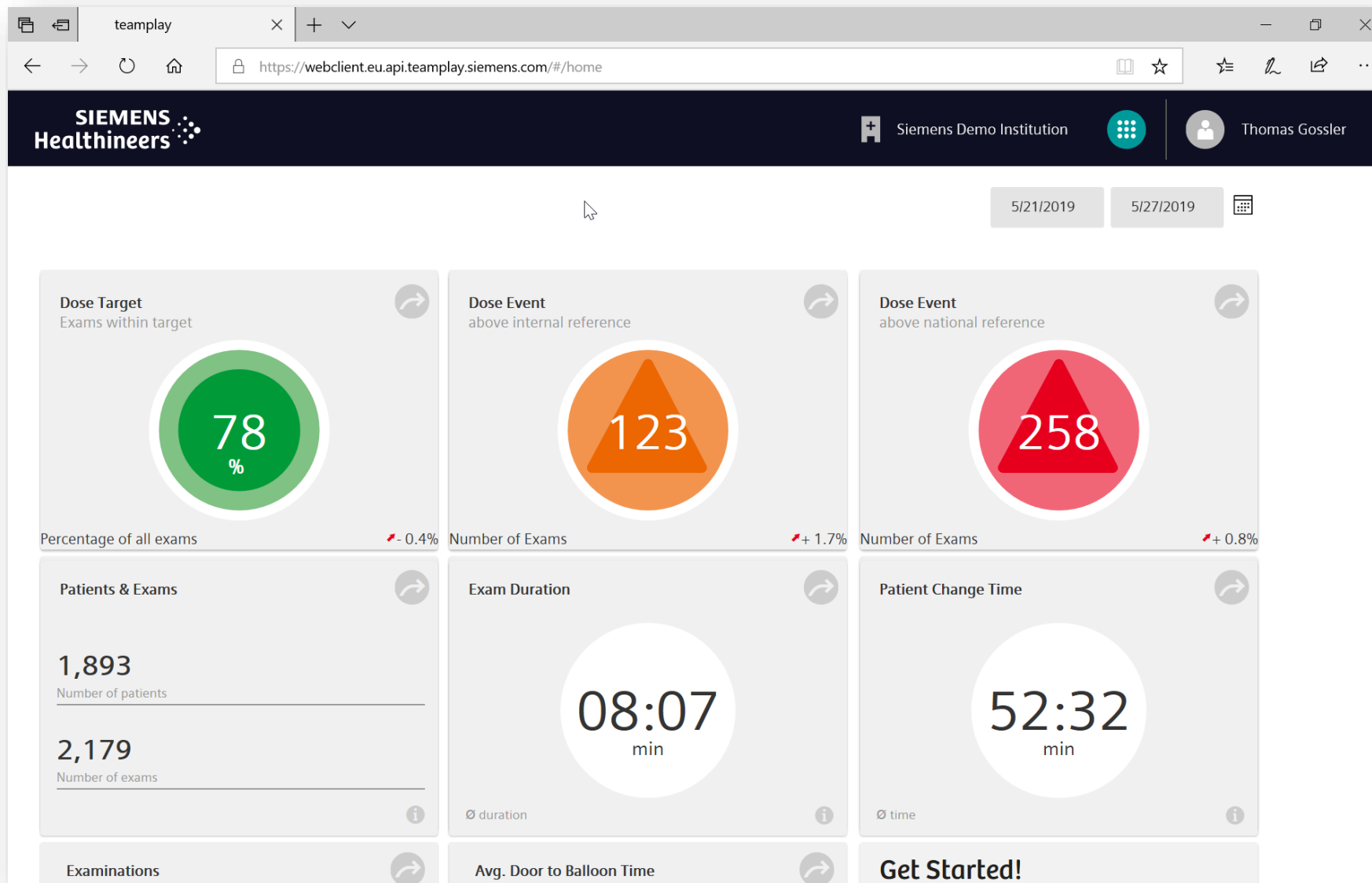


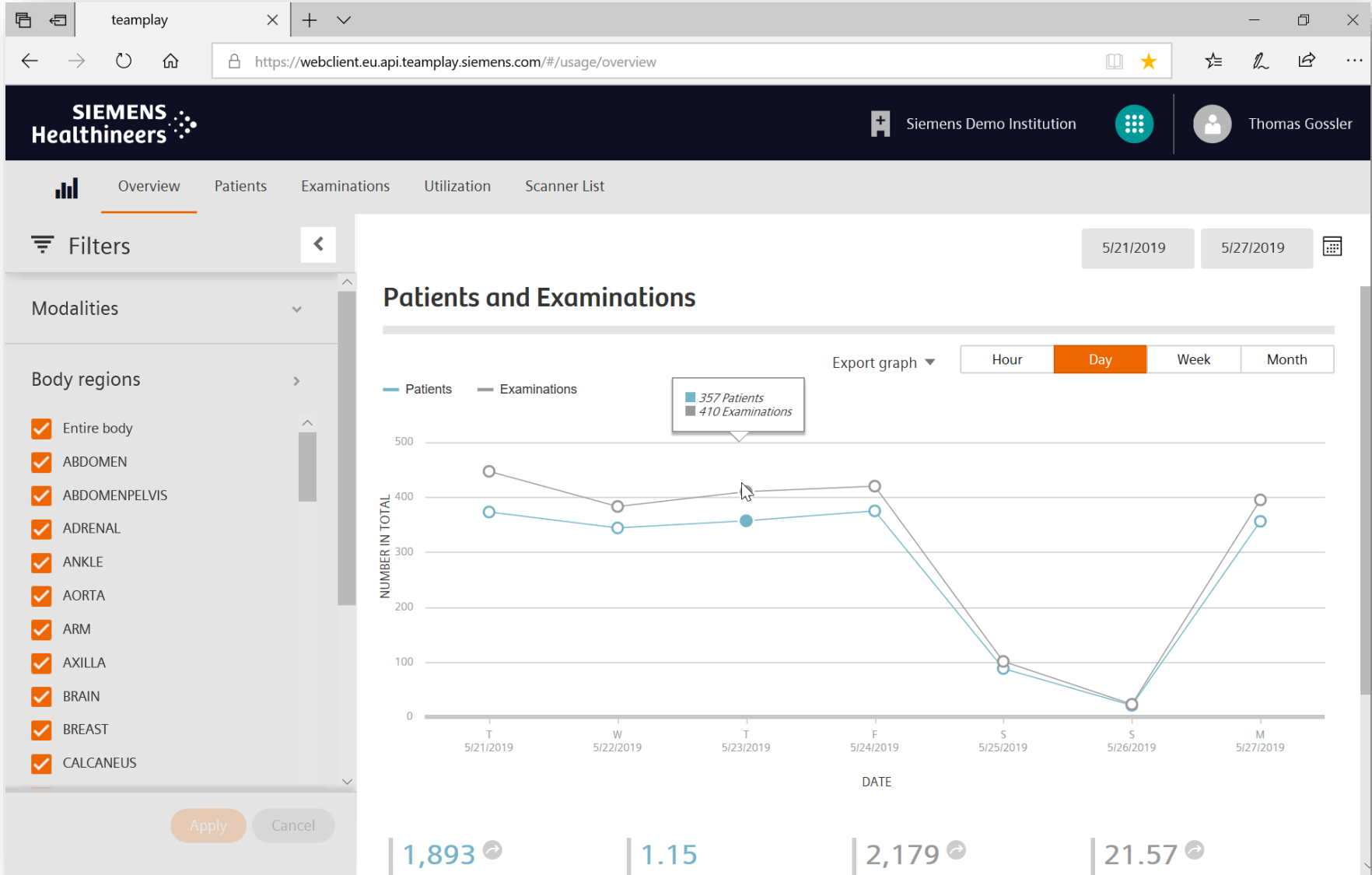
Geography

Azure Region

- One independent teamply instance per Azure region
- Few connections from all instances to global resources in Europe
- Each deployment has its own API Management instance with a region-specific domain name

teampay UI – Dashboard





The screenshot displays the Siemens Healthineers teampay web application interface. The browser address bar shows the URL: `https://webclient-showcase.test.teampay.siemens.com/#/images/institutionStorage`. The top navigation bar includes the Siemens Healthineers logo, a patient name 'Mountain Springs Medic...', and a user profile for 'Chris Winter'. The main navigation menu contains 'All Studies', 'Inbox', 'Upload Study', and 'Settings'. A notification banner at the top of the content area states: 'You shared this study with Raab, Mario; Fields, Sarah; Serra, Sebastien and you.'

Head_tp2

Share study

Patient ID: mockup_scenario_06 Name: icobrain_tbi_demo DoB: 01-01-1993
Modality type: OT/MR Study date: 12-31-2015 5 2

Study | Data Sheet | Conversations | Activity History

Series (4)

Series Name	Image Count	Modality
MR - BRAIN 3D T1 SAG MPRAGE	192 images	MR - BRAIN
MR - BRAIN 3D FLAIR SAG 3D FLAIR	192 images	MR - BRAIN
MR - (not available) FLAIR WM-HYPER SAG SAG 3D FLAIR	192 images	MR - (not available)
OT - (not available) icobrain_tbi-report	1 image	OT - (not available)

teampay UI – Store App

The screenshot shows a web browser window with the URL `https://webclient.eu.api.teampay.siemens.com/#/store/apps`. The page features a dark blue header with the Siemens Healthineers logo on the left, a 'Siemens Demo Institution' label, and a user profile for 'Thomas Gossler' on the right. Below the header, there are two tabs: 'Catalog' (active) and 'Order status'. The main content area starts with a large banner image of two medical professionals looking at a screen displaying a 3D lung model. To the right of the image, the text reads 'Welcome to the Store' in a mix of dark red and orange, followed by the subtext 'Browse all digital offerings from the Siemens Healthineers Digital Ecosystem'. Below the banner, there are three filter dropdowns: 'Application family' (set to 'All products'), 'Manufacturer' (set to 'All manufacturers'), and 'Installation type' (set to 'All types'). A search bar with the placeholder 'Search for app name, keyword...' is positioned below the filters. To the right of the search bar is a 'Sort by' dropdown menu set to 'Date desc.'. At the bottom, four application cards are displayed in a row: 'mediCAD® Web' with a blue cloud icon, 'CAAS Workstation' with a red 'Caas' logo, 'LifeNet' with an orange icon of a person and a document, and 'CAAS MR Solutions' with a red 'Caas MR solutions' logo.

teampplay on Azure DevOps

teampplay is fully developed, built and deployed out of Azure DevOps

The screenshot displays the Azure DevOps web interface. The left sidebar shows the navigation menu with 'Releases' selected. The main content area shows a release pipeline named 'Images.Prod.PluginSubmissionAndAlloca'. A table lists several releases with their IDs, branches, creation times, and deployment status for different stages.

Release	Created	Stages
Release-7 20190424.12 m...	2019-05-27 6:45	cut-eu-we... cut-us-east
Release-6 20190424.12 master	2019-05-27 6:11	cut-eu-we... cut-us-east
Release-5 20190424.12 master	2019-05-27 5:14	cut-eu-we... cut-us-east
Release-4 20190424.12 master	2019-05-16 14:49	cut-eu-we... cut-us-east
Release-3 20190424.4 master	2019-04-24 7:57	cut-eu-we... cut-us-east
Release-2 20190417.2 master	2019-04-23 10:24	cut-eu-we... cut-us-east
Release-1 20190417.2 master	2019-04-23 9:34	cut-eu-we... cut-us-east

The screenshot shows a web browser window with the URL `https://developer.eu.api.teampay.siemens.com/docs/services/teampay-platform-public-api/operations/599d3f227afb1e134c8458fb?`. The page title is "OAuth - Verify the validity of an JSON Web Token (JWT)".

POST Entitlement - Update usage information for a given feature

POST OAuth - Get an app-specific JWT for API access

GET OAuth - Verify the validity of an JSON Web Token (JWT)

GET RoleManagement - Get the users permissions

POST Send email to intended recipients

GET ServiceBus - Get SAS token for a service bus topic to be able to receive notification messages

GET Storage - Get the access URL for a folder

GET Storage - Retrieve file from storage

GET UserManagement - Get details of an institution for a given tenant

GET UserManagement - Get user and institution details

Verify the specified bearer token (OAuth JWT).

- The JWT needs to be validated on every request to application-owned web APIs.
- This API is verifying the integrity and validity (i.e. expiration) of the specified token.

[Try it](#)

Request

Request URL

`https://public.eu.api.teampay.siemens.com/oauth/validatetoken?version={version}`

Request parameters

Parameter	Type	Description
version	integer	Supported API version. <i>Possible values are: 1.</i>

Request headers

Header	Type	Description
Authorization	string	User-specific bearer token (OAuth JWT). <i>Example: Bearer <access_token></i>
Ocp-Apim-Subscription-Key	string	Subscription key which provides access to this API. Found in your Profile .

Request body

Responses