ZEN API Documentation

ZEN Release 3.12 - Spring 2025 (2025-05-09)

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ExperimentDescriptor

Descriptors for experiment.

Field	Type	Label	Description
name	string		Experiment name.

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ExperimentServiceCloneRequest

The ExperimentServiceCloneRequest class.

Field	Type	Label	Description
experiment_id	string		Id of the experiment to be cloned.

ExperimentServiceCloneResponse

Response object of the method for cloning an experiment.

Field	Type	Label	Description
experiment_id	string		The experiment id which is used to reference the cloned experiment.

ExperimentServiceDeleteRequest

The ExperimentServiceDeleteRequest class.

Field	Type	Label	Description
experiment_name	string		Name of the experiment to be deleted.

ExperimentServiceDeleteResponse

The ExperimentServiceDeleteResponse class.

ExperimentServiceExportRequest

The ExperimentServiceExportRequest class.

Field	Type	Label	Description
experiment_id	string		Experiment id.

ExperimentServiceExportResponse

Response object of the method for exporting an experiment.

Field	Type	Label	Description
xml	string		Xml string of experiment.

ExperimentServiceGetAvailableExperimentsRequest

The ExperimentServiceGetAvailableExperimentsRequest class.

ExperimentServiceGetAvailableExperimentsResponse

Response object of available experiments.

Field	Type	Label	Description
experiments	ExperimentDescriptor	repeated	List of available experiments.

ExperimentServiceGetImageOutputPathRequest

The ExperimentServiceGetImageOutputPathRequest class.

ExperimentServiceGetImageOutputPathResponse

Response object of the method for getting the image output path.

Field	Type	Label	Description
image_output_path	string		The image output path.

ExperimentServiceGetStatusRequest

The ExperimentServiceGetStatusRequest class.

Field	Type	Label	Description
experiment_id	string		ID of an experiment for which status is requested. If ID is provided, the status can be retrieved for both active and finished experiments. If ID is not provided, status of one of the active experiments is returned. If ID is not provided and there are no active experiments, an exception is thrown.

ExperimentServiceGetStatusResponse

Response object representing the status of an experiment.

Field	Type	Label	Description
status	ExperimentStatus		The experiment status.

ExperimentServiceImportRequest

The ExperimentServiceImportRequest class.

Field	Type	Label	Description
xml_string	string		Xml string of the experiment.

ExperimentServiceImportResponse

Response object of the method for importing an experiment.

Field	Type	Label	Description
experiment_id	string		The experiment id which is used to reference the imported experiment.

ExperimentServiceLoadRequest

The ExperimentServiceLoadRequest class.

Field	Type	Label	Description
experiment_name	string		Name of the experiment.

ExperimentServiceLoadResponse

Response object of the method for loading an experiment.

Field	Type	Label	Description
experiment_id	string		The experiment id which is used to reference the loaded experiment.

ExperimentServiceRegisterOnStatusChangedRequest

The ExperimentServiceRegisterOnStatusChangedRequest class.

Field	Type	Label	Description
experiment_id	string		ID of an active experiment for which status is monitored. If ID is not provided, status of one of the active experiments is monitored.

ExperimentServiceRegisterOnStatusChangedResponse

Response object representing the status of an experiment.

It contains full set of status information, which can consist a single or multiple new states.

Field	Type	Label	Description
status	ExperimentStatus		The experiment status.

ExperimentServiceRunExperimentRequest

The ExperimentServiceRunExperimentRequest class.

Field	Type	Label	Description
experiment_id	string		Experiment id.

Field	Type	Label	Description
output_name	string		Optional name of the experiment's output. If a null or an empty name is provided, the output name will be created automatically, otherwise the output name must be in a format of a file name without a file extension.

ExperimentServiceRunExperimentResponse

Information about execution of an experiment.

Field	Type	Label	Description
output_name	string		The name of the experiment's output (in a format of a file name without a file extension).

ExperimentServiceRunSnapRequest

The ExperimentServiceRunSnapRequest class.

Field	Type	Label	Description
experiment_id	string		Experiment id.
output_name	string		Optional name of the experiment's output. If a null or an empty name is provided, the output name will be created automatically, otherwise the output name must be in a format of a file name without a file extension.

ExperimentServiceRunSnapResponse

Information about execution of a snap experiment.

Field	Type	Label	Description
output_name	string		The name of the snap's output (in a format of a file name without a file extension).

ExperimentServiceSaveRequest

The ExperimentServiceSaveRequest class.

Field	Type	Label	Description
experiment_id	string		Experiment id.
experiment_name	string		Name to be used when saving the experiment.
allow_override	bool		Allow override of already existing experiment with the same name.

ExperimentServiceSaveResponse

The ExperimentServiceSaveResponse class.

ExperimentServiceStartContinuousRequest

The ExperimentServiceStartContinuousRequest class.

Field	Type	Label	Description
experiment_id	string		Experiment id.

ExperimentServiceStartExperimentRequest

The ExperimentServiceStartExperimentRequest class.

Field	Type	Label	Description
experiment_id	string		Experiment id.
output_name	string		Optional name of the experiment's output. If a null or an empty name is provided, the output name will be created automatically, otherwise the output name must be in a format of a file name without a file extension.

ExperimentServiceStartExperimentResponse

Information about execution of an experiment.

Field	Type	Label	Description
output_name	string		The name of the experiment's output (in a format of a file name without a file extension).

ExperimentServiceStartLiveRequest

The ExperimentServiceStartLiveRequest class.

Field	Type	Label	Description
experiment_id	string		Experiment id.
track_index	google.protobuf.Int32Value		Optional track index. When index is not provided the first selected or activated track (in that order) will be used, but when the index is provided the track with than index will be selected. The track index starts with "0".

ExperimentServiceStartSnapRequest

The ExperimentServiceStartSnapRequest class.

Field	Type	Label	Description
experiment_id	string		Experiment id.
output_name	string		Optional name of the experiment's output. If a null or an empty name is provided, the output name will be created automatically, otherwise the output name must be in a format of a file name without a file extension.

ExperimentServiceStartSnapResponse

Information about execution of a snap experiment.

Field	Type	Label	Description
output_name	string		The name of the snap's output (in a format of a file name without a file extension).

ExperimentServiceStopRequest

The ExperimentServiceStopRequest class.

Field	Type	Label	Description
experiment_id	string		ID of an experiment to stop or an empty GUID to stop one of the active experiments.

ExperimentServiceStopResponse

Information about execution of an experiment.

Field	Type	Label	Description
experiment_id	string		The ID of the experiment which is used to reference the stopped experiment.

ExperimentService

The IExperimentService interface.

KindMethod NameRequest TypeResponse TypeDescription

c**Controlling method:**
Changes the state of the system and can only be executed if ZEN is in API mode (explicit or unsupervised) and a control token is provided.

Clone ExperimentServiceCloneRequest ExperimentServiceCloneResponse

Clones an already loaded experiment. Useful when one wants to clone an experiment before modifying it in order to preserve the original experiment. This method returns the info needed to reference the cloned experiment.

c**Controlling method:**
Changes the state of the system and can only be executed if ZEN is in API mode (explicit or unsupervised) and a control token is provided.

Delete ExperimentServiceDeleteRequest ExperimentServiceDeleteResponse

Deletes an experiment file from the predefined location on disk. It does not delete the corresponding loaded experiment instance.

m**Monitoring method:**
Does not change the state of the system and can be executed at any time.

Export ExperimentServiceExportRequest ExperimentServiceExportResponse

Returns xml representation of an experiment.

m**Monitoring method:**
Does not change the state of the system and can be executed at any time.

GetAvailableExperiments ExperimentServiceGetAvailableExperimentsRequest ExperimentServiceGetAvailableExperimentsResponse

Retrieves a list of all available experiments of the system.

m**Monitoring method:**
Does not change the state of the system and can be executed at any time.

GetImageOutputPath ExperimentServiceGetImageOutputPathRequest ExperimentServiceGetImageOutputPathResponse

Gets the location where the images will be stored on the machine where ZEN Client is running.

m**Monitoring method:**
Does not change the state of the system and can be executed at any time.

GetStatus ExperimentServiceGetStatusRequest ExperimentServiceGetStatusResponse

Gets status of an experiment. The information is updated in interval (several times per seconds). As a result, some status updates could be skipped.

c**Controlling method:**
Changes the state of the system and can only be executed if ZEN is in API mode (explicit or unsupervised) and a control token is provided.

Import ExperimentServiceImportRequest ExperimentServiceImportResponse

Imports an experiment from the provided experiment xml string. This method returns the info needed to reference the imported experiment.

c**Controlling method:**
Changes the state of the system and can only be executed if ZEN is in API mode (explicit or unsupervised) and a control token is provided.

Load ExperimentServiceLoadRequest ExperimentServiceLoadResponse

Loads an experiment from the available experiments. Consequently, the experiment is ready to be executed or modified. This method returns the info needed to reference the loaded experiment.

m**Monitoring method:**
Does not change the state of the system and can be executed at any time.

RegisterOnStatusChanged ExperimentServiceRegisterOnStatusChangedRequest ExperimentServiceRegisterOnStatusChangedResponse stream

Register on experiment status changed events. The information is updated in interval (several times per seconds). As a result, some status updates could be skipped. The notifications can be retrieved for experiments which are active at the time the method is invoked. If the method is invoked after an experiment is finished, the call will throw an exception.

c**Controlling method:**
Changes the state of the system and can only be executed if ZEN is in API mode (explicit or unsupervised) and a control token is provided.

RunExperiment ExperimentServiceRunExperimentRequest ExperimentServiceRunExperimentResponse

Executes an experiment and waits until the experiment execution is finished. This means that the method will block until the experiment was successfully completed, it fails, or it is cancelled. If the call is interrupted (e.g., caller is not available anymore) the experiment will be stopped.

c**Controlling method:**
Changes the state of the system and can only be executed if ZEN is in API mode (explicit or unsupervised) and a control token is provided.

RunSnap ExperimentServiceRunSnapRequest ExperimentServiceRunSnapResponse

Acquires a single snap image with the activated channels in the specified experiment and waits until the process of acquiring snap is finished. This means that the method will block until the experiment was successfully completed, it fails, or it is cancelled. If the call is interrupted (e.g., caller is not available anymore) the snap will be stopped.

c**Controlling method:**
Changes the state of the system and can only be executed if ZEN is in API mode (explicit or unsupervised) and a control token is provided.

Save ExperimentServiceSaveRequest ExperimentServiceSaveResponse

Saves a loaded experiment to the predefined location on disk.

c**Controlling method:**
Changes the state of the system and can only be executed if ZEN is in API mode (explicit or unsupervised) and a control token is provided.

StartContinuous ExperimentServiceStartContinuousRequest .google.protobuf.Empty

Starts the continuous with the activated channels in the specified experiment and waits for the acquisition to start. After that point continuous will run until it is explicitly stopped or it fails - even if the caller is not available anymore.

c**Controlling method:**
Changes the state of the system and can only be executed if ZEN is in API mode (explicit or unsupervised) and a control token is provided.

StartExperiment ExperimentServiceStartExperimentRequest ExperimentServiceStartExperimentResponse

Starts the process of executing an experiment and waits for the acquisition to start. After that point the experiment will either run to completion (successful or not) or until it is explicitly stopped - even if the caller is not available anymore.

c**Controlling method:**
Changes the state of the system and can only be executed if ZEN is in API mode (explicit or unsupervised) and a control token is provided.

StartLive ExperimentServiceStartLiveRequest .google.protobuf.Empty

Starts live with the requested track in the specified experiment and waits for the acquisition to start. After that point live will run until it is explicitly stopped or it fails - even if the caller is not available anymore.

c**Controlling method:**
Changes the state of the system and can only be executed if ZEN is in API mode (explicit or unsupervised) and a control token is provided.

StartSnap ExperimentServiceStartSnapRequest ExperimentServiceStartSnapResponse

Starts the process of acquiring a single snap image with the activated channels in the specified experiment and waits for the acquisition to start. After that point the snap will either run to completion (successful or not) or until it is explicitly stopped - even if the caller is not available anymore.

c**Controlling method:**
Changes the state of the system and can only be executed if ZEN is in API mode (explicit or unsupervised) and a control token is provided.

Stop ExperimentServiceStopRequest ExperimentServiceStopResponse

Stops the specified experiment or one of the active experiments if the experiment ID is not provided. This will stop any type of experiment (i.e., experiment, snap, continuous, live) if it is active and known to this service. This method returns the info needed to reference the stopped experiment.

zen_api/acquisition/v1beta/experiment_status.proto

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ExperimentStatus

Status of an experiment.

The index properties are 0-based.

If a value is 0 or -1 it means the value is not initialized or

the running experiment does not have the corresponding dimension.

In case of indices, 0 value can also refer to the first element.

Field	Type	Label	Description
tiles_index	int32		The current or already acquired (depending of the dimension order) tiles position index of the currently acquired scene.
tiles_count	int32		The tiles count of the currently acquired scene.
cumulated_tiles_count	int32		The total tiles count of all scenes.
scenes_index	int32		The current or already acquired (depending of the dimension order) scene index (= tile region/position index).
scenes_count	int32		The total scene count (= tile region/position count).
time_points_index	int32		The current or already acquired (depending of the dimension order) time point index in time series.
time_points_count	int32		The number of time points in time series.
zstack_slices_index	int32		The current or already acquired (depending of the dimension order) z-stack slice index.
zstack_slices_count	int32		The total count of z-stack slices.
channels_index	int32		The current or already acquired (depending of the dimension order) channel index.
channels_count	int32		The total channel count.
images_acquired_index	int32		The number of acquired images over all dimensions (channels, time series, z-stack, cumulated tiles).
images_count	int32		The images count over all dimensions (channels, time series, z-stack, cumulated tiles). This value is relevant only for acquisition where end is determined (standard experiment and Snap), therefore it is not relevant for Continuous and Live.
is_experiment_running	bool		A value indicating whether the experiment is currently running.
is_acquisition_running	bool		A value indicating whether an acquisition is currently running.
total_elapsed_time	google.protobuf.Duration		The total time that elapsed since the start of the running experiment.

zen_api/acquisition/v1beta/experiment_streaming_service.proto

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ExperimentStreamingServiceMonitorAllExperimentsRequest

The ExperimentStreamingServiceMonitorAllExperimentsRequest class.

Field	Type	Label	Description
channel_index	google.protobuf.Int32Value		Optional parameter for filtering by specific channel. If the channel index is provided, then only that channel will be monitored, but if the channel index is not provided, then all channels will be monitored.
enable_raw_data	bool		Value indicating whether the streamed frame data contains raw frames as received from the acquisition (when set), which can be either full or partial frames (e.g., in general LM cameras produce full frames and LSM and EM detectors produce partial frames/lines). Otherwise (when not set) the streamed frame data contains only full frames, which means that in the case of partial frames/lines, they would be assembled into full frames.

ExperimentStreamingServiceMonitorAllExperimentsResponse

Response object of the method for monitoring all experiments.

Field	Type	Label	Description
frame_data	FrameData		The experiment's frame data.

ExperimentStreamingServiceMonitorExperimentRequest

The ExperimentStreamingServiceMonitorExperimentRequest class.

Field	Type	Label	Description
experiment_id	string		ID of the experiment to monitor.
channel_index	google.protobuf.Int32Value		Optional parameter for filtering by specific channel. If the channel index is provided, then only that channel will be monitored, but if the channel index is not provided, then all channels will be monitored.
enable_raw_data	bool		Value indicating whether the streamed frame data contains raw frames as received from the acquisition (when set), which can be either full or partial frames (e.g., in general LM cameras produce full frames and LSM and EM detectors produce partial frames/lines). Otherwise (when not set) the streamed frame data contains only full frames, which means that in the case of partial frames/lines, they would be assembled into full frames.

ExperimentStreamingServiceMonitorExperimentResponse

Response object of the method for monitoring an experiment.

Field	Type	Label	Description
frame_data	FrameData		The experiment's frame data.

ExperimentStreamingService

The IExperimentStreamingService interface.

KindMethod NameRequest TypeResponse TypeDescription

m**Monitoring method:**
Does not change the state of the system and can be executed at any time.

MonitorAllExperiments ExperimentStreamingServiceMonitorAllExperimentsRequest ExperimentStreamingServiceMonitorAllExperimentsResponse stream

Starts monitoring all experiments.

m**Monitoring method:**
Does not change the state of the system and can be executed at any time.

MonitorExperiment ExperimentStreamingServiceMonitorExperimentRequest ExperimentStreamingServiceMonitorExperimentResponse stream

Starts monitoring the specified experiment.

zen_api/acquisition/v1beta/frame_data.proto

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FrameData

A simple container for the frame data. This can contain either a full frame or only a part

of it (e.g., in case of partial acquisition when working with EM and LSM).

Field	Type	Label	Description
experiment_id	string		The ID of the experiment.
frame_number	int32		The frame sequence number. One frame can represent either a single image taken by the camera or one full scan in case of partial acquisition. One frame can also contain multiple channels if they are acquired in the same image or scan.
frame_position	FramePosition		The position of the full frame.
frame_size	zen_api.common.v1.IntSize		The size of the full frame (in pixels).
frame_stage_position	FrameStagePosition		The stage position of the acquired full frame.
scaling	Scaling		The scaling of the frame.
pixel_data	FramePixelData		The pixel data of the frame. This can contain either the pixels of a full frame or only a part of it (e.g., a line or a rectangle in case of partial acquisition when working with EM and LSM).

zen_api/acquisition/v1beta/frame_pixel_data.proto

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FramePixelData

A simple container for the frame pixel data. This can contain either the pixels of a full

frame or only a part of it (e.g., a line or a rectangle in case of partial acquisition when

working with EM and LSM).

Field	Type	Label	Description
start_position	zen_api.common.v1.IntPoint		The start position (in pixels) of the pixel data in the frame. Together with the size property, this represents the rectangle where the pixels are located inside the full frame. For ordinary acquisition this will be the top left corner of the frame, but for partial acquisition this can be any position inside the full frame relative to the top left corner.
size	zen_api.common.v1.IntSize		Size (in pixels) of the pixel data. Together with the start position property, this represents the rectangle where the pixels are located inside the full frame. For ordinary acquisition this will be the full frame size, but for partial acquisition this can be just one part of the full frame.
pixel_type	PixelType		The pixel type of the frame.
raw_data	bytes		The raw pixel data. The value of individual pixels is contained in this container. The pixel values need to be extracted from the raw byte data. The number of bits needed to extract a single pixel from the raw byte data and the format it is stored in is determined by the pixel type property.

zen_api/acquisition/v1beta/frame_position.proto

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FramePosition

Defines the position of the frame in multiple dimensions.

Field	Type	Label	Description
x	int32		The pixel index in X direction of the top left corner of the frame.
y	int32		The pixel index in Y direction of the top left corner of the frame.
z	int32		The Z slice index of the of the frame.
t	int32		The time point of the frame in a sequentially acquired series of data. Note that this doesn't represents the exact time of acquisition but only the sequence of the acquired image.
s	int32		The scene index.
m	int32		The mosaic tile index.
c	int32		The channel index in a multi-channel data set.
h	int32		The raw data index.

zen_api/acquisition/v1beta/frame_stage_position.proto

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FrameStagePosition

Defines the stage position of the acquired frame.

Field	Type	Label	Description
x	google.protobuf.DoubleValue		The stage position in X direction (unit: m).
y	google.protobuf.DoubleValue		The stage position in Y direction (unit: m).
z	google.protobuf.DoubleValue		The stage position in Z direction (unit: m).

zen_api/acquisition/v1beta/pixel_type.proto

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PixelType

Pixel type of image data.

Name	Number	Description
PIXEL_TYPE_UNSPECIFIED	0	Default value if status is not specified.
PIXEL_TYPE_GRAY8	1	8 bit unsigned.
PIXEL_TYPE_GRAY16	2	16 bit unsigned.
PIXEL_TYPE_BGR24	4	8 bit triples, representing the color channels Blue, Green and Red.
PIXEL_TYPE_BGR48	5	16 bit triples, representing the color channels Blue, Green and Red.

zen_api/acquisition/v1beta/scaling.proto

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Scaling

Defines the scaling of the acquired frame.

Field	Type	Label	Description
x	double		The scaling in X dimension (unit: m/pixel).
y	double		The scaling in Y dimension (unit: m/pixel).

zen_api/application/v1/composition_service.proto

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CompositionServiceCreateModuleRequest

The CompositionServiceCreateModuleRequest class.

Field	Type	Label	Description
module_id	string		The id of the module.
display_name	string		The display name of the module.
description	string		The description of the module.
license_string	string		The license string.

Field	Type	Label	Description
minimum_required_version	string		The minimum required feature version.

CompositionServiceCreateModuleResponse

The CompositionServiceCreateModuleResponse class.

CompositionServiceIsModuleAvailableRequest

The CompositionServiceIsModuleAvailableRequest class.

Field	Type	Label	Description
module_id	string		The module id.

IsModuleAvailableResponse

Response object of the method for checking the availability state of a composition module.

Field	Type	Label	Description
is_available	bool		A value indicating whether the module is available or not.

CompositionService

The ICompositionService interface.

KindMethod NameRequest TypeResponse TypeDescription

c**Controlling method:**
Changes the state of the system and can only be executed if ZEN is in API mode (explicit or unsupervised) and a control token is provided.

CreateModule CompositionServiceCreateModuleRequest CompositionServiceCreateModuleResponse

Creates a module and adds it to the selected profile. With this method, a client can 'inject' a new module at runtime (e.g. via OAD script or ZEN API). After adding the module, it will appear as optional module of the selected profile just as any other module. The Module Manager can be used to verify this. After adding the module, the client can make use of the 'normal' license infrastructure to check the avaiability of the newly added module. Note: A module is available, if the module is licensed AND the user has enabled it (via the Module Manager). In case a module gets added via this method, the module is enabled by default.

m**Monitoring method:**
Does not change the state of the system and can be executed at any time.

IsModuleAvailable CompositionServiceIsModuleAvailableRequest IsModuleAvailableResponse

Returns the availability state of the given module.

zen_api/common/v1/double_point.proto

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DoublePoint

Double-based point object.

Field	Type	Label	Description
x	double		The coordinate X of a point.
y	double		The coordinate Y of a point.

zen_api/common/v1/int_point.proto

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IntPoint

Integer-based point.

Field	Type	Label	Description
x	int32		The coordinate X of a point.
y	int32		The coordinate Y of a point.

zen_api/common/v1/int_size.proto

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IntSize

Integer-based size.

Field	Type	Label	Description
width	int32		The width.
height	int32		The height.

zen_api/hardware/v1/axis_identifier.proto

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AxisIdentifier

Unique identifier for axis.

Name	Number	Description
AXIS_IDENTIFIER_UNSPECIFIED	0	Default enum value.
AXIS_IDENTIFIER_X	1	X axis (translation axis). Controlled by length, default unit is meters.
AXIS_IDENTIFIER_Y	2	Y axis (translation axis). Controlled by length, default unit is meters.
AXIS_IDENTIFIER_Z	3	Z axis (translation axis). Controlled by length, default unit is meters.
AXIS_IDENTIFIER_R	4	R axis (rotation axis). Controlled by angle, default unit is radians.
AXIS_IDENTIFIER_T	5	T axis (rotation axis). Controlled by angle, default unit is radians.
AXIS_IDENTIFIER_M	6	M axis (translation axis). Controlled by length, default unit is meters.

zen_api/hardware/v1/stage_axis.proto

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StageAxis

Abstract representation of an arbitrary axis.

Field	Type	Label	Description
axis	AxisIdentifier		The axis identifier.
position	double		The position of the axis in meters or radians.

zen_api/hardware/v1/stage_motion_state.proto

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StageMotionState

Stage motion state for ZenApi.

Name	Number	Description
STAGE_MOTION_STATE_UNSPECIFIED	0	Default enum value.
STAGE_MOTION_STATE_UNKNOWN	1	Should not occur in a well configured system.
STAGE_MOTION_STATE_ERROR	2	The stage cannot perform any task. Software restart and/or physical intervention is required.
STAGE_MOTION_STATE_IDLE	3	The stage is not moving.
STAGE_MOTION_STATE_MOVING	4	The stage is in motion.

zen_api/hardware/v1/stage_service.proto

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StageServiceAxisVelocityResponse

Abstract representation of an arbitrary axis and it's velocity.

Field	Type	Label	Description
axis	AxisIdentifier		The axis identifier.
velocity	double		The velocity of the axis in meters per second or radians per second.

StageServiceGetAvailableStageAxisRequest

The StageServiceGetAvailableStageAxisRequest class.

StageServiceGetAvailableStageAxisResponse

Response object of available stage axis.

Field	Type	Label	Description
available_axis	AxisIdentifier	repeated	

StageServiceGetAxisPositionRequest

The StageServiceGetAxisPositionRequest class.

Field	Type	Label	Description
axis_id	AxisIdentifier		The requested axe.

StageServiceGetAxisPositionResponse

Abstract representation of an arbitrary axis.

Field	Type	Label	Description
axis	AxisIdentifier		The axis identifier.
position	double		The position of the axis in meters or radians.

StageServiceGetAxisVelocityRequest

The StageServiceGetAxisVelocityRequest class.

Field	Type	Label	Description
axis_id	AxisIdentifier		The requested axis.

StageServiceGetAxisVelocityResponse

Abstract representation of an arbitrary axis and it's velocity.

Field	Type	Label	Description
axis	AxisIdentifier		The axis identifier.
velocity	double		The velocity of the axis in meters per second or radians per second.

StageServiceGetStageMotionStateRequest

The StageServiceGetStageMotionStateRequest class.

StageServiceGetStageMotionStateResponse

StageMotionState enum response.

Field	Type	Label	Description
state	StageMotionState		The stage motion state.

StageServiceGetStagePositionRequest

The StageServiceGetStagePositionRequest class.

StageServiceGetStagePositionResponse

Response object of stage axis positions.

Field	Type	Label	Description
axis_positions	StageAxis	repeated	The available axis and their positions.

StageServiceGetStageStateRequest

The StageServiceGetStageStateRequest class.

StageServiceGetStageStateResponse

StageState enum response.

Field	Type	Label	Description
state	StageState		The stage state.

StageServiceGetStageVelocityRequest

The StageServiceGetStageVelocityRequest class.

StageServiceGetStageVelocityResponse

Response object of stage axis velocities.

Field	Type	Label	Description
axis_velocities	StageServiceAxisVelocityResponse	repeated	The available axis and their velocities.

StageServiceInitializeStageRequest

The StageServiceInitializeStageRequest class.

StageServiceInitializeStageResponse

Response object of the initialize stage method.

Field	Type	Label	Description
task_success	bool		A value indicating whether the task to initialize the stage succeeded or not.

StageServiceMoveToRequest

The StageServiceMoveToRequest class.

Field	Type	Label	Description
axis_to_move	StageAxis	repeated	The stage axis that should move. The position is in meters.

StageServiceMoveToResponse

Response object of the MoveStage method.

Field	Type	Label	Description
task_success	bool		A value indicating whether the task to move the stage succeeded or not.

StageServiceRegisterOnStageMotionStateChangedRequest

The StageServiceRegisterOnStageMotionStateChangedRequest class.

StageServiceRegisterOnStageMotionStateChangedResponse

StageMotionState enum response.

Field	Type	Label	Description
state	StageMotionState		The stage motion state.

StageServiceRegisterOnStagePositionChangedRequest

The StageServiceRegisterOnStagePositionChangedRequest class.

StageServiceRegisterOnStagePositionChangedResponse

Abstract representation of an arbitrary axis.

Field	Type	Label	Description
axis	AxisIdentifier		The axis identifier.
position	double		The position of the axis in meters or radians.

StageServiceRegisterOnStageStateChangedRequest

The StageServiceRegisterOnStageStateChangedRequest class.

StageServiceRegisterOnStageStateChangedResponse

StageState enum response.

Field	Type	Label	Description
state	StageState		The stage state.

StageServiceRegisterOnStageVelocityChangedRequest

The StageServiceRegisterOnStageVelocityChangedRequest class.

StageServiceRegisterOnStageVelocityChangedResponse

Abstract representation of an arbitrary axis and it's velocity.

Field	Type	Label	Description
axis	AxisIdentifier		The axis identifier.
velocity	double		The velocity of the axis in meters per second or radians per second.

StageServiceStopRequest

The StageServiceStopRequest class.

StageServiceStopResponse

The StageServiceStopResponse class.

StageService

The IStageService interface.

KindMethod NameRequest TypeResponse TypeDescription

m**Monitoring method:**
Does not change the state of the system and can be executed at any time.

GetAvailableStageAxis StageServiceGetAvailableStageAxisRequest StageServiceGetAvailableStageAxisResponse

Retrieves all available stage axis on this system.

m**Monitoring method:**
Does not change the state of the system and can be executed at any time.

GetAxisPosition StageServiceGetAxisPositionRequest StageServiceGetAxisPositionResponse

Gets the current position of an axis of the stage.

m**Monitoring method:**
Does not change the state of the system and can be executed at any time.

GetAxisVelocity StageServiceGetAxisVelocityRequest StageServiceGetAxisVelocityResponse

Gets the current velocity of an axis of the stage.

m**Monitoring method:**
Does not change the state of the system and can be executed at any time.

GetStageMotionState StageServiceGetStageMotionStateRequest StageServiceGetStageMotionStateResponse

Retrieves the current stage motion state.

m**Monitoring method:**
Does not change the state of the system and can be executed at any time.

GetStagePosition StageServiceGetStagePositionRequest StageServiceGetStagePositionResponse

Retrieves the current stage position. This will return the positions of all available axis..

m**Monitoring method:**
Does not change the state of the system and can be executed at any time.

GetStageState StageServiceGetStageStateRequest StageServiceGetStageStateResponse

Retrieves the current stage state.

m**Monitoring method:**
Does not change the state of the system and can be executed at any time.

GetStageVelocity StageServiceGetStageVelocityRequest StageServiceGetStageVelocityResponse

Retrieves the current stage velocity. This will return the velocity of all available axis.

c**Controlling method:**
Changes the state of the system and can only be executed if ZEN is in API mode (explicit or unsupervised) and a control token is provided.

InitializeStage StageServiceInitializeStageRequest StageServiceInitializeStageResponse

Starts an initialization routine for the stage to initialize all stage axis. This may take a while and the stage is moving in this time.

c**Controlling method:**
Changes the state of the system and can only be executed if ZEN is in API mode (explicit or unsupervised) and a control token is provided.

MoveTo StageServiceMoveToRequest StageServiceMoveToResponse

Moves the stage.

m**Monitoring method:**
Does not change the state of the system and can be executed at any time.

RegisterOnStageMotionStateChanged StageServiceRegisterOnStageMotionStateChangedRequest StageServiceRegisterOnStageMotionStateChangedResponse stream

Notification about changes of the stage motion state.

m**Monitoring method:**
Does not change the state of the system and can be executed at any time.

RegisterOnStagePositionChanged StageServiceRegisterOnStagePositionChangedRequest StageServiceRegisterOnStagePositionChangedResponse stream

Notification about changes of all stage axis positions.

m**Monitoring method:**
Does not change the state of the system and can be executed at any time.

RegisterOnStageStateChanged StageServiceRegisterOnStageStateChangedRequest StageServiceRegisterOnStageStateChangedResponse stream

Notification about changes of the stage state.

m**Monitoring method:**
Does not change the state of the system and can be executed at any time.

RegisterOnStageVelocityChanged StageServiceRegisterOnStageVelocityChangedRequest StageServiceRegisterOnStageVelocityChangedResponse stream

Notification about changes of all stage axis velocities.

c**Controlling method:**
Changes the state of the system and can only be executed if ZEN is in API mode (explicit or unsupervised) and a control token is provided.

Stop StageServiceStopRequest StageServiceStopResponse

Immediately stops the stage.

zen_api/hardware/v1/stage_state.proto

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StageState

Stage state for ZenApi.

Name	Number	Description
STAGE_STATE_UNSPECIFIED	0	Default enum value.
STAGE_STATE_UNKNOWN	1	Should not occur in a well configured system.
STAGE_STATE_ERROR	2	The stage cannot perform any task. Software restart and/or physical intervention is required.
STAGE_STATE_NORMAL	3	The state is functioning normally and can be used.
STAGE_STATE_INITIALIZING	4	The stage is in the process of reinitializing one or more axes, should not be used, and will ignore value sets and commands other than stop.

Name	Number	Description
STAGE_STATE_INITIALIZATION_NEEDED	5	The stage will respond to motion commands, but positions may be reported erroneously, and the stage should be initialized before further use.

zen_api/workflows/v1/start_job_options.proto

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StartJobOptions

Start Job options.

Field	Type	Label	Description
result_path	string		A value indicating a path for saving a Job results in the file system. -- If value is given than Job output will be copied to given path in filesystem and not uploaded to ZEN Archive. Have to be in the Windows-supported directory path format (local drive or network share). -- If value is null (or empty/whitespace) than Job output will be uploaded to ZEN Archive and not copied to anywhere.

zen_api/workflows/v1beta/job_resources_service.proto

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JobResourcesServiceGetAvailableResourcesRequest

The JobResourcesServiceGetAvailableResourcesRequest class.

JobResourcesServiceGetAvailableResourcesResponse

Response containing the list of all available resource workflow parameters.

Field	Type	Label	Description
resources	string	repeated	The list of all available resource workflow parameters.

JobResourcesServiceGetBooleanValueRequest

The JobResourcesServiceGetBooleanValueRequest class.

Field	Type	Label	Description
resource_id	string		The ID of the resource.

JobResourcesServiceGetBooleanValueResponse

Response containing the resource's value.

Field	Type	Label	Description
value	bool		The resource's value.

JobResourcesServiceGetDateTimeValueRequest

The JobResourcesServiceGetDateTimeValueRequest class.

Field	Type	Label	Description
resource_id	string		The ID of the resource.

JobResourcesServiceGetDateTimeValueResponse

Response containing the resource's value.

Field	Type	Label	Description
value	string		The resource's date and time string value in ISO 8601 format.

JobResourcesServiceGetDateValueRequest

The JobResourcesServiceGetDateValueRequest class.

Field	Type	Label	Description
resource_id	string		The ID of the resource.

JobResourcesServiceGetDateValueResponse

Response containing the resource's value.

Field	Type	Label	Description
value	string		The resource's date string value in ISO 8601 format.

JobResourcesServiceGetDoubleValueRequest

The JobResourcesServiceGetDoubleValueRequest class.

Field	Type	Label	Description
resource_id	string		The ID of the resource.

JobResourcesServiceGetDoubleValueResponse

Response containing the resource's value.

Field	Type	Label	Description
value	double		The resource's value.

JobResourcesServiceGetFloatValueRequest

The JobResourcesServiceGetFloatValueRequest class.

Field	Type	Label	Description
resource_id	string		The ID of the resource.

JobResourcesServiceGetFloatValueResponse

Response containing the resource's value.

Field	Type	Label	Description

Field	Type	Label	Description
value	float		The resource's value.

JobResourcesServiceGetIntegerValueRequest

The JobResourcesServiceGetIntegerValueRequest class.

Field	Type	Label	Description
resource_id	string		The ID of the resource.

JobResourcesServiceGetIntegerValueResponse

Response containing the resource's value.

Field	Type	Label	Description
value	int32		The resource's value.

JobResourcesServiceGetLongValueRequest

The JobResourcesServiceGetLongValueRequest class.

Field	Type	Label	Description
resource_id	string		The ID of the resource.

JobResourcesServiceGetLongValueResponse

Response containing the resource's value.

Field	Type	Label	Description
value	int64		The resource's value.

JobResourcesServiceGetStringValueRequest

The JobResourcesServiceGetStringValueRequest class.

Field	Type	Label	Description
resource_id	string		The ID of the resource.

JobResourcesServiceGetStringValueResponse

Response containing the resource's value.

Field	Type	Label	Description
value	string		The resource's value.

JobResourcesServiceGetTimeValueRequest

The JobResourcesServiceGetTimeValueRequest class.

Field	Type	Label	Description

Field	Type	Label	Description
resource_id	string		The ID of the resource.

JobResourcesServiceGetTimeValueResponse

Response containing the resource's value.

Field	Type	Label	Description
value	string		The resource's time string value in ISO 8601 format.

JobResourcesServiceHasResourceRequest

The JobResourcesServiceHasResourceRequest class.

Field	Type	Label	Description
resource_id	string		The ID of the resource.

JobResourcesServiceHasResourceResponse

Response containing information if the current job has a resource with the specified ID.

Field	Type	Label	Description
has_resource	bool		A value indicating whether the current job has a resource with the specified ID.

JobResourcesServiceIsJobLoadedRequest

The JobResourcesServiceIsJobLoadedRequest class.

JobResourcesServiceIsJobLoadedResponse

Response containing information if a job is loaded.

Field	Type	Label	Description
is_job_loaded	bool		A value indicating whether a job is loaded.

JobResourcesServiceSetBooleanValueRequest

The JobResourcesServiceSetBooleanValueRequest class.

Field	Type	Label	Description
resource_id	string		The ID of the resource.
value	bool		The resource's value.

JobResourcesServiceSetBooleanValueResponse

The JobResourcesServiceSetBooleanValueResponse class.

JobResourcesServiceSetDateTimeValueRequest

The JobResourcesServiceSetDateTimeValueRequest class.

Field	Type	Label	Description
resource_id	string		The ID of the resource.
value	string		The resource's value.

JobResourcesServiceSetDateTimeValueResponse

The JobResourcesServiceSetDateTimeValueResponse class.

JobResourcesServiceSetDateValueRequest

The JobResourcesServiceSetDateValueRequest class.

Field	Type	Label	Description
resource_id	string		The ID of the resource.
value	string		The resource's value.

JobResourcesServiceSetDateValueResponse

The JobResourcesServiceSetDateValueResponse class.

JobResourcesServiceSetDoubleValueRequest

The JobResourcesServiceSetDoubleValueRequest class.

Field	Type	Label	Description
resource_id	string		The ID of the resource.
value	double		The resource's value.

JobResourcesServiceSetDoubleValueResponse

The JobResourcesServiceSetDoubleValueResponse class.

JobResourcesServiceSetFloatValueRequest

The JobResourcesServiceSetFloatValueRequest class.

Field	Type	Label	Description
resource_id	string		The ID of the resource.
value	float		The resource's value.

JobResourcesServiceSetFloatValueResponse

The JobResourcesServiceSetFloatValueResponse class.

JobResourcesServiceSetIntegerValueRequest

The JobResourcesServiceSetIntegerValueRequest class.

Field	Type	Label	Description
resource_id	string		The ID of the resource.

Field	Type	Label	Description
value	int32		The resource's value.

JobResourcesServiceSetIntegerValueResponse

The JobResourcesServiceSetIntegerValueResponse class.

JobResourcesServiceSetLongValueRequest

The JobResourcesServiceSetLongValueRequest class.

Field	Type	Label	Description
resource_id	string		The ID of the resource.
value	int64		The resource's value.

JobResourcesServiceSetLongValueResponse

The JobResourcesServiceSetLongValueResponse class.

JobResourcesServiceSetStringValueRequest

The JobResourcesServiceSetStringValueRequest class.

Field	Type	Label	Description
resource_id	string		The ID of the resource.
value	string		The resource's value.

JobResourcesServiceSetStringValueResponse

The JobResourcesServiceSetStringValueResponse class.

JobResourcesServiceSetTimeValueRequest

The JobResourcesServiceSetTimeValueRequest class.

Field	Type	Label	Description
resource_id	string		The ID of the resource.
value	string		The resource's value.

JobResourcesServiceSetTimeValueResponse

The JobResourcesServiceSetTimeValueResponse class.

JobResourcesService

The IJobResourcesService interface.

KindMethod NameRequest TypeResponse TypeDescription

m**Monitoring method:**
Does not change the state of the system and can be executed at any time.

GetAvailableResources JobResourcesServiceGetAvailableResourcesRequest JobResourcesServiceGetAvailableResourcesResponse

Retrieves a list of all available resource workflow parameters.

m**Monitoring method:**
Does not change the state of the system and can be executed at any time.

GetBooleanValue JobResourcesServiceGetBooleanValueRequest JobResourcesServiceGetBooleanValueResponse

Gets the value of the resource with the specified ID from the current job as a boolean value.

m**Monitoring method:**
Does not change the state of the system and can be executed at any time.

GetDateTimeValue JobResourcesServiceGetDateTimeValueRequest JobResourcesServiceGetDateTimeValueResponse

Gets the value of the resource with the specified ID from the current job as a date and time string value in ISO 8601 format.

m**Monitoring method:**
Does not change the state of the system and can be executed at any time.

GetDateValue JobResourcesServiceGetDateValueRequest JobResourcesServiceGetDateValueResponse

Gets the value of the resource with the specified ID from the current job as a date string value in ISO 8601 format.

m**Monitoring method:**
Does not change the state of the system and can be executed at any time.

GetDoubleValue JobResourcesServiceGetDoubleValueRequest JobResourcesServiceGetDoubleValueResponse

Gets the value of the resource with the specified ID from the current job as a double precision floating point value.

m**Monitoring method:**
Does not change the state of the system and can be executed at any time.

GetFloatValue JobResourcesServiceGetFloatValueRequest JobResourcesServiceGetFloatValueResponse

Gets the value of the resource with the specified ID from the current job as a single precision floating point value.

m**Monitoring method:**
Does not change the state of the system and can be executed at any time.

GetIntegerValue JobResourcesServiceGetIntegerValueRequest JobResourcesServiceGetIntegerValueResponse

Gets the value of the resource with the specified ID from the current job as an integer value.

m**Monitoring method:**
Does not change the state of the system and can be executed at any time.

GetLongValue JobResourcesServiceGetLongValueRequest JobResourcesServiceGetLongValueResponse

Gets the value of the resource with the specified ID from the current job as a long integer value.

m**Monitoring method:**
Does not change the state of the system and can be executed at any time.

GetStringValue JobResourcesServiceGetStringValueRequest JobResourcesServiceGetStringValueResponse

Gets the value of the resource with the specified ID from the current job as a string value.

m**Monitoring method:**
Does not change the state of the system and can be executed at any time.

GetTimeValue JobResourcesServiceGetTimeValueRequest JobResourcesServiceGetTimeValueResponse

Gets the value of the resource with the specified ID from the current job as a time string value in ISO 8601 format.

m**Monitoring method:**
Does not change the state of the system and can be executed at any time.

HasResource JobResourcesServiceHasResourceRequest JobResourcesServiceHasResourceResponse

Checks if the current job has a resource with the specified ID.

m**Monitoring method:**
Does not change the state of the system and can be executed at any time.

IsJobLoaded JobResourcesServiceIsJobLoadedRequest JobResourcesServiceIsJobLoadedResponse

Checks if a job is loaded.

c**Controlling method:**
Changes the state of the system and can only be executed if ZEN is in API mode (explicit or unsupervised) and a control token is provided.

SetBooleanValue JobResourcesServiceSetBooleanValueRequest JobResourcesServiceSetBooleanValueResponse

Sets the value of the resource with the specified ID in the current job as a boolean value or creates the resource if it doesn't exist.

c**Controlling method:**
Changes the state of the system and can only be executed if ZEN is in API mode (explicit or unsupervised) and a control token is provided.

SetDateTimeValue JobResourcesServiceSetDateTimeValueRequest JobResourcesServiceSetDateTimeValueResponse

Sets the value of the resource with the specified ID in the current job as a date and time string value in ISO 8601 format or creates the resource if it doesn't exist.

c**Controlling method:**
Changes the state of the system and can only be executed if ZEN is in API mode (explicit or unsupervised) and a control token is provided.

SetDateValue JobResourcesServiceSetDateValueRequest JobResourcesServiceSetDateValueResponse

Sets the value of the resource with the specified ID in the current job as a date string value in ISO 8601 format or creates the resource if it doesn't exist.

c**Controlling method:**
Changes the state of the system and can only be executed if ZEN is in API mode (explicit or unsupervised) and a control token is provided.

SetDoubleValue JobResourcesServiceSetDoubleValueRequest JobResourcesServiceSetDoubleValueResponse

Sets the value of the resource with the specified ID in the current job as a double precision floating point value or creates the resource if it doesn't exist.

c**Controlling method:**
Changes the state of the system and can only be executed if ZEN is in API mode (explicit or unsupervised) and a control token is provided.

SetFloatValue JobResourcesServiceSetFloatValueRequest JobResourcesServiceSetFloatValueResponse

Sets the value of the resource with the specified ID in the current job as a single precision floating point value or creates the resource if it doesn't exist.

c**Controlling method:**
Changes the state of the system and can only be executed if ZEN is in API mode (explicit or unsupervised) and a control token is provided.

SetIntegerValue JobResourcesServiceSetIntegerValueRequest JobResourcesServiceSetIntegerValueResponse

Sets the value of the resource with the specified ID in the current job as an integer value or creates the resource if it doesn't exist.

c**Controlling method:**
Changes the state of the system and can only be executed if ZEN is in API mode (explicit or unsupervised) and a control token is provided.

SetLongValue JobResourcesServiceSetLongValueRequest JobResourcesServiceSetLongValueResponse

Sets the value of the resource with the specified ID in the current job as a long integer value or creates the resource if it doesn't exist.

c**Controlling method:**
Changes the state of the system and can only be executed if ZEN is in API mode (explicit or unsupervised) and a control token is provided.

SetStringValue JobResourcesServiceSetStringValueRequest JobResourcesServiceSetStringValueResponse

Sets the value of the resource with the specified ID in the current job as a string value or creates the resource if it doesn't exist.

c**Controlling method:**
Changes the state of the system and can only be executed if ZEN is in API mode (explicit or unsupervised) and a control token is provided.

SetTimeValue JobResourcesServiceSetTimeValueRequest JobResourcesServiceSetTimeValueResponse

Sets the value of the resource with the specified ID in the current job as a time string value in ISO 8601 format or creates the resource if it doesn't exist.

zen_api/workflows/v2/job_info.proto

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JobInfo

Information about Job executed by the workflow runner contains a real-time updates and Job's events with Job state.

Field	Type	Label	Description
job_id	string		A Job unique runtime ID.
create_date	google.protobuf.Timestamp		A date and time when JobInfo was created.
status	JobStatus		A Job execution state.
start_options	zen_api.workflows.v1.StartJobOptions		A Job starting options.

zen_api/workflows/v2/job_status.proto

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JobStatus

Runtime status of the Job.

Name	Number	Description
JOB_STATUS_UNSPECIFIED	0	Default value if status is not specified.
JOB_STATUS_RUNNING	1	Job is currently executed by the workflow runner.
JOB_STATUS_PAUSED	2	Job execution is paused (not supported for now and reserved only for future purposes for saving numeration sequence).
JOB_STATUS_COMPLETED	3	Job execution is successfully completed.
JOB_STATUS_FAILED	4	Job execution was failed.
JOB_STATUS_CANCELLED	5	Job execution was interrupted (cancelled).
JOB_STATUS_PENDING	6	Job is created but still not started and waiting for beginning of execution.

zen_api/workflows/v2/workflow_service.proto

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WorkflowServiceGetJobInfoRequest

The WorkflowServiceGetJobInfoRequest class.

Field	Type	Label	Description
job_id	string		Target Job ID.

WorkflowServiceGetJobInfoResponse

Response object representing the job info.

Field	Type	Label	Description
job_info	JobInfo		The job info.

WorkflowServiceStartJobRequest

The WorkflowServiceStartJobRequest class.

Field	Type	Label	Description
job_name	string		Job display name.
options	zen_api.workflows.v1.StartJobOptions		Job starting options.

WorkflowServiceStartJobResponse

Response object representing the starting of a job.

Field	Type	Label	Description
job_info	JobInfo		The job info.

WorkflowServiceStopJobRequest

The WorkflowServiceStopJobRequest class.

Field	Type	Label	Description
job_id	string		Target Job ID.

WorkflowServiceStopJobResponse

The WorkflowServiceStopJobResponse class.

WorkflowServiceWaitJobRequest

The WorkflowServiceWaitJobRequest class.

Field	Type	Label	Description
job_id	string		Target Job ID.

WorkflowServiceWaitJobResponse

The WorkflowServiceWaitJobResponse class.

WorkflowService

The IWorkflowService interface.

KindMethod NameRequest TypeResponse TypeDescription

m**Monitoring method:**
Does not change the state of the system and can be executed at any time.

GetJobInfo WorkflowServiceGetJobInfoRequest WorkflowServiceGetJobInfoResponse

Get Job information.

c**Controlling method:**
Changes the state of the system and can only be executed if ZEN is in API mode (explicit or unsupervised) and a control token is provided.

StartJob WorkflowServiceStartJobRequest WorkflowServiceStartJobResponse

Start Job execution.

c**Controlling method:**
Changes the state of the system and can only be executed if ZEN is in API mode (explicit or unsupervised) and a control token is provided.

StopJob WorkflowServiceStopJobRequest WorkflowServiceStopJobResponse

Stop the Job execution.

m**Monitoring method:**
Does not change the state of the system and can be executed at any time.

WaitJob WorkflowServiceWaitJobRequest WorkflowServiceWaitJobResponse

Wait for the Job execution will be finished.

zen_api/workflows/v3beta/job_status.proto

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JobStatus

Enumerates possible job statuses.

Name	Number	Description
JOB_STATUS_UNSPECIFIED	0	Default enum value.
JOB_STATUS_NOT_LOADED	1	Job template is not loaded.
JOB_STATUS_LOADED	2	Job template is loaded.
JOB_STATUS_RUNNING	3	Job is running.
JOB_STATUS_FINALIZING	4	Finalizing job results after the job was completed successfully.
JOB_STATUS_ARCHIVING	5	Archiving job results after they were finalized.
JOB_STATUS_COMPLETED	6	Job was completed successfully.
JOB_STATUS_ABORTED	7	Job was aborted.
JOB_STATUS_CANCELED	8	Job was canceled.

zen_api/workflows/v3beta/job_template_info.proto

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JobTemplateInfo

Contains information about a job template.

Field	Type	Label	Description
name	string		The job template's name.
description	string		The job template's description.
category	string		The job template's category.
subcategory	string		The job template's subcategory.

zen_api/workflows/v3beta/workflow_service.proto

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WorkflowServiceGetAvailableJobTemplatesRequest

The WorkflowServiceGetAvailableJobTemplatesRequest class.

Field	Type	Label	Description
category	string		Optional filter for job templates. If category is provided then only job templates that are in the specified category will be listed.
subcategory	string		Optional filter for job templates. If subcategory is provided then only job templates that are in the specified subcategory will be listed.

WorkflowServiceGetAvailableJobTemplatesResponse

Represents a list of all available job templates.

Field	Type	Label	Description
job_templates	JobTemplateInfo	repeated	The available job templates.

WorkflowServiceGetStatusRequest

The WorkflowServiceGetStatusRequest class.

WorkflowServiceGetStatusResponse

Response containing the job status.

Field	Type	Label	Description
job_status	JobStatus		The job status.

WorkflowServiceIsJobRunningRequest

The WorkflowServiceIsJobRunningRequest class.

WorkflowServiceIsJobRunningResponse

Response object representing the return value of IsJobRunning() method of the

Workflow service.

Field	Type	Label	Description
is_job_running	bool		A value indicating whether the loaded job is currently running.

WorkflowServiceIsJobTemplateLoadedRequest

The WorkflowServiceIsJobTemplateLoadedRequest class.

WorkflowServiceIsJobTemplateLoadedResponse

Response object representing the return value of IsJobTemplateLoaded() method of the

Workflow service.

Field	Type	Label	Description
is_job_template_loaded	bool		A value indicating whether a job template is loaded.

WorkflowServiceLoadJobTemplateRequest

The WorkflowServiceLoadJobTemplateRequest class.

Field	Type	Label	Description
job_template_name	string		The name of the job template.
result_path	string		Optional parameter for storing the result outside of ZEN archive. If provided the job result will be stored in the selected location and will not be uploaded to the archive.

WorkflowServiceLoadJobTemplateResponse

The WorkflowServiceLoadJobTemplateResponse class.

WorkflowServiceRegisterOnStatusChangedRequest

The WorkflowServiceRegisterOnStatusChangedRequest class.

WorkflowServiceRegisterOnStatusChangedResponse

Response containing the job status.

Field	Type	Label	Description
job_status	JobStatus		The job status.

WorkflowServiceRunJobRequest

The WorkflowServiceRunJobRequest class.

WorkflowServiceRunJobResponse

Response object representing the return value of RunJob() method of the Workflow service.

WorkflowServiceStartJobRequest

The WorkflowServiceStartJobRequest class.

WorkflowServiceStartJobResponse

The WorkflowServiceStartJobResponse class.

WorkflowServiceStopJobRequest

The WorkflowServiceStopJobRequest class.

WorkflowServiceStopJobResponse

Response object representing the return value of StopJob() method of the Workflow service.

WorkflowServiceUnloadJobTemplateRequest

The WorkflowServiceUnloadJobTemplateRequest class.

WorkflowServiceUnloadJobTemplateResponse

The WorkflowServiceUnloadJobTemplateResponse class.

WorkflowServiceWaitJobRequest

The WorkflowServiceWaitJobRequest class.

WorkflowServiceWaitJobResponse

Response object representing the return value of WaitJob() method of the Workflow service.

WorkflowService

The IWorkflowService interface.

KindMethod NameRequest TypeResponse TypeDescription

m**Monitoring method:**
Does not change the state of the system and can be executed at any time.

GetAvailableJobTemplates WorkflowServiceGetAvailableJobTemplatesRequest WorkflowServiceGetAvailableJobTemplatesResponse

Retrieves a list of all available job templates.

c**Controlling method:**
Changes the state of the system and can only be executed if ZEN is in API mode (explicit or unsupervised) and a control token is provided.

GetStatus WorkflowServiceGetStatusRequest WorkflowServiceGetStatusResponse

Gets the job status.

m**Monitoring method:**
Does not change the state of the system and can be executed at any time.

IsJobRunning WorkflowServiceIsJobRunningRequest WorkflowServiceIsJobRunningResponse

Checks if the loaded job is currently running.

m**Monitoring method:**
Does not change the state of the system and can be executed at any time.

IsJobTemplateLoaded WorkflowServiceIsJobTemplateLoadedRequest WorkflowServiceIsJobTemplateLoadedResponse

Checks if a job template is loaded.

c**Controlling method:**
Changes the state of the system and can only be executed if ZEN is in API mode (explicit or unsupervised) and a control token is provided.

LoadJobTemplate WorkflowServiceLoadJobTemplateRequest WorkflowServiceLoadJobTemplateResponse

Loads a job template and prepares it for execution.

m**Monitoring method:**
Does not change the state of the system and can be executed at any time.

RegisterOnStatusChanged WorkflowServiceRegisterOnStatusChangedRequest WorkflowServiceRegisterOnStatusChangedResponse stream

Register on job status changed events.

c**Controlling method:**
Changes the state of the system and can only be executed if ZEN is in API mode (explicit or unsupervised) and a control token is provided.

RunJob WorkflowServiceRunJobRequest WorkflowServiceRunJobResponse

Runs the loaded job template to completion.

c**Controlling method:**
Changes the state of the system and can only be executed if ZEN is in API mode (explicit or unsupervised) and a control token is provided.

StartJob WorkflowServiceStartJobRequest WorkflowServiceStartJobResponse

Starts the loaded job template but it doesn't wait for it to complete.

c**Controlling method:**
Changes the state of the system and can only be executed if ZEN is in API mode (explicit or unsupervised) and a control token is provided.

StopJob WorkflowServiceStopJobRequest WorkflowServiceStopJobResponse

Stops the currently running job and waits for it to complete.

c**Controlling method:**
Changes the state of the system and can only be executed if ZEN is in API mode (explicit or unsupervised) and a control token is provided.

UnloadJobTemplate WorkflowServiceUnloadJobTemplateRequest WorkflowServiceUnloadJobTemplateResponse

Unloads the loaded job template.

c**Controlling method:**
Changes the state of the system and can only be executed if ZEN is in API mode (explicit or unsupervised) and a control token is provided.

WaitJob WorkflowServiceWaitJobRequest WorkflowServiceWaitJobResponse

Waits for currently running job to complete.

zen_api/lm/acquisition/v1beta/autofocus_contrast_measure.proto

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AutofocusContrastMeasure

The contrast measures of the software autofocus contrast mode.

Name	Number	Description
AUTOFOCUS_CONTRAST_MEASURE_UNSPECIFIED	0	Default enum value.
AUTOFOCUS_CONTRAST_MEASURE_DEFAULT	1	The default contrast measure.
AUTOFOCUS_CONTRAST_MEASURE_LOW_SIGNAL	2	The contrast measure to use in low-signal and calibration situations.

zen_api/lm/acquisition/v1beta/autofocus_mode.proto

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AutofocusMode

The autofocus modes.

Name	Number	Description
AUTOFOCUS_MODE_UNSPECIFIED	0	Default enum value.
AUTOFOCUS_MODE_CONTRAST	1	Sharpness is measured on the basis of contrast values.
AUTOFOCUS_MODE_INTENSITY	2	Sharpness is measured on the basis of intensity values.

Name	Number	Description
AUTOFOCUS_MODE_AUTO	3	Automatic determination of measure method (Contrast or Intensity) in dependency of used hardware.
AUTOFOCUS_MODE_REFLEX	4	Sharpness is measured with the reflection mode autofocus.

zen_api/lm/acquisition/v1beta/autofocus_sampling.proto

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AutofocusSampling

Scales the depth of focus by predefined values given here.

Name	Number	Description
AUTOFOCUS_SAMPLING_UNSPECIFIED	0	Default enum value.
AUTOFOCUS_SAMPLING_FINE	1	Do oversampling.
AUTOFOCUS_SAMPLING_DEFAULT	2	Do sampling according to depth of focus.
AUTOFOCUS_SAMPLING_MEDIUM	3	Do under sampling.
AUTOFOCUS_SAMPLING_COARSE	4	Coarser than medium.

zen_api/lm/acquisition/v1beta/channel_info.proto

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ChannelInfo

Information about a channel.

Field	Type	Label	Description
name	string		The channel name.
is_activated	bool		A value indicating whether the channel is activated.

zen_api/lm/acquisition/v1beta/experiment_sw_autofocus_service.proto

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ExperimentSwAutofocusServiceExportRequest

The ExperimentSwAutofocusServiceExportRequest class.

Field	Type	Label	Description
experiment_id	string		The experiment id.

ExperimentSwAutofocusServiceExportResponse

Response object representing the values of xml string.

Field	Type	Label	Description
xml_string	string		A value of the xml string.

ExperimentSwAutofocusServiceFindAutoFocusRequest

The ExperimentSwAutofocusServiceFindAutoFocusRequest class.

Field	Type	Label	Description
experiment_id	string		The experiment id.
timeout	google.protobuf.DoubleValue		The timeout in seconds.

ExperimentSwAutofocusServiceFindAutoFocusResponse

Response object representing the focus position.

Field	Type	Label	Description
focus_position	double		The focus position (unit: m).

ExperimentSwAutofocusServiceGetAutofocusParametersRequest

The ExperimentSwAutofocusServiceGetAutofocusParametersRequest class.

Field	Type	Label	Description
experiment_id	string		The experiment id.

ExperimentSwAutofocusServiceGetAutofocusParametersResponse

Response object representing the values of software autofocus parameters for the experiment.

Field	Type	Label	Description
experiment_id	string		A value of the experiment id.
auto_focus_mode	AutofocusMode		A value of autofocus mode.
contrast_measure	AutofocusContrastMeasure		A value of sharpness measure for contrast mode.
search_strategy	string		A value of search strategy. Either "Smart", "Full", "FullNoChecks" or the name of an extension strategy.
autofocus_sampling	AutofocusSampling		A value of the predefined step size.
offset	double		A value of the reflection mode offset (unit: m).
use_acquisition_roi	bool		A value indicating whether the acquisition ROI is used for the software autofocus.
reference_channel_name	string		A name of the focus reference channel.
relative_range_is_automatic	bool		A value indicating whether the relative search range size is determined automatically.
relative_search_range	double		A value of the relative search range of the Z drive (unit: m).
lower_limit	double		A value of the lower search range limit of the Z drive (unit: m).

Field	Type	Label	Description
upper_limit	double		A value of the upper search range limit of the Z drive (unit: m).

ExperimentSwAutofocusServiceImportRequest

The ExperimentSwAutofocusServiceImportRequest class.

Field	Type	Label	Description
experiment_id	string		The experiment id.
xml_string	string		Xml string to be imported.

ExperimentSwAutofocusServiceImportResponse

The ExperimentSwAutofocusServiceImportResponse class.

ExperimentSwAutofocusServiceSetAutofocusParametersRequest

The ExperimentSwAutofocusServiceSetAutofocusParametersRequest class.

Field	Type	Label	Description
experiment_id	string		The experiment id.
autofocus_mode	AutofocusMode		The autofocus mode.
contrast_measure	AutofocusContrastMeasure		The sharpness measure for contrast mode.
search_strategy	string		The strategy, either "Smart", "Full", "FullNoChecks" or the name of an extension strategy, or null to leave unmodified. This parameter is case-insensitive.
autofocus_sampling	AutofocusSampling		The predefined step size, or null to leave unmodified.
offset	google.protobuf.DoubleValue		The reflection mode offset (unit: m), or null to leave unmodified.
use_acquisition_roi	google.protobuf.BoolValue		True if the acquisition ROI is used for the software autofocus; otherwise, false, or null to leave unmodified.
reference_channel_name	string		The case-insensitive name of the focus reference channel, or null to leave unmodified.
relative_range_is_automatic	google.protobuf.BoolValue		True if the relative search range size is determined automatically; otherwise, false, or null to leave unmodified.
relative_search_range	google.protobuf.DoubleValue		The relative search range in units of the Z drive (unit: m), or null to leave unmodified.
lower_limit	google.protobuf.DoubleValue		The lower search range limit in units of the Z drive (unit: m), or null to leave unmodified.

Field	Type	Label	Description
upper_limit	google.protobuf.DoubleValue		The upper limit in units of the Z drive (unit: m), or null to leave unmodified.

ExperimentSwAutofocusServiceSetAutofocusParametersResponse

The ExperimentSwAutofocusServiceSetAutofocusParametersResponse class.

ExperimentSwAutofocusService

The IExperimentSwAutofocusService interface.

KindMethod NameRequest TypeResponse TypeDescription

c**Controlling method:**
Changes the state of the system and can only be executed if ZEN is in API mode (explicit or unsupervised) and a control token is provided.

Export ExperimentSwAutofocusServiceExportRequest ExperimentSwAutofocusServiceExportResponse

Exports the software autofocus parameters to an xml string.

c**Controlling method:**
Changes the state of the system and can only be executed if ZEN is in API mode (explicit or unsupervised) and a control token is provided.

FindAutoFocus ExperimentSwAutofocusServiceFindAutoFocusRequest ExperimentSwAutofocusServiceFindAutoFocusResponse

Gets the the focus position.

m**Monitoring method:**
Does not change the state of the system and can be executed at any time.

GetAutofocusParameters ExperimentSwAutofocusServiceGetAutofocusParametersRequest ExperimentSwAutofocusServiceGetAutofocusParametersResponse

Gets the software autofocus parameters for the specified experiment.

c**Controlling method:**
Changes the state of the system and can only be executed if ZEN is in API mode (explicit or unsupervised) and a control token is provided.

Import ExperimentSwAutofocusServiceImportRequest ExperimentSwAutofocusServiceImportResponse

Imports the software autofocus parameters from an xml string.

c**Controlling method:**
Changes the state of the system and can only be executed if ZEN is in API mode (explicit or unsupervised) and a control token is provided.

SetAutofocusParameters ExperimentSwAutofocusServiceSetAutofocusParametersRequest ExperimentSwAutofocusServiceSetAutofocusParametersResponse

Sets the software autofocus parameters for the specified experiment.

zen_api/lm/acquisition/v1beta/position3d.proto

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Position3d

A position in three dimensions (XYZ).

Field	Type	Label	Description
x	double		The X position (unit: m).
y	double		The Y position (unit: m).
z	double		The Z position (unit: m).

zen_api/lm/acquisition/v1beta/tiles_service.proto

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TilesServiceAddEllipseTileRegionRequest

The TilesServiceAddEllipseTileRegionRequest class.

Field	Type	Label	Description
experiment_id	string		The experiment Id.
center_x	google.protobuf.DoubleValue		The center x position of the tile region to be added (unit: m).
center_y	google.protobuf.DoubleValue		The center y position of the tile region to be added (unit: m).
width	google.protobuf.DoubleValue		The width of the tile region to be added (unit: m).
height	google.protobuf.DoubleValue		The height of the tile region to be added (unit: m).
z	google.protobuf.DoubleValue		The z position of the tile region to be added (unit: m).

TilesServiceAddEllipseTileRegionResponse

The TilesServiceAddEllipseTileRegionResponse class.

TilesServiceAddPolygonTileRegionRequest

The TilesServiceAddPolygonTileRegionRequest class.

Field	Type	Label	Description
experiment_id	string		The experiment Id.
polygon_points	zen_api.common.v1.DoublePoint	repeated	The list of points which define the polygon. This list has to contain at least one point (unit: m).
z	google.protobuf.DoubleValue		The z position of the tile region to be added (unit: m).

TilesServiceAddPolygonTileRegionResponse

The TilesServiceAddPolygonTileRegionResponse class.

TilesServiceAddPositionsRequest

The TilesServiceAddPositionsRequest class.

Field	Type	Label	Description
experiment_id	string		The experiment Id.
positions	Position3d	repeated	The positions to be added.

TilesServiceAddPositionsResponse

The TilesServiceAddPositionsResponse class.

TilesServiceAddRectangleTileRegionRequest

The TilesServiceAddRectangleTileRegionRequest class.

Field	Type	Label	Description
experiment_id	string		Experiment id.
center_x	google.protobuf.DoubleValue		The center x position of the tile region to be added (unit: m).
center_y	google.protobuf.DoubleValue		The center y position of the tile region to be added (unit: m).
width	google.protobuf.DoubleValue		The width of the tile region to be added (unit: m).
height	google.protobuf.DoubleValue		The height of the tile region to be added (unit: m).
z	google.protobuf.DoubleValue		The z position of the tile region to be added (unit: m).

TilesServiceAddRectangleTileRegionResponse

The TilesServiceAddRectangleTileRegionResponse class.

TilesServiceClearRequest

The TilesServiceClearRequest class.

Field	Type	Label	Description
experiment_id	string		Experiment id.

TilesServiceClearResponse

The TilesServiceClearResponse class.

TilesServiceIsTilesExperimentRequest

The TilesServiceIsTilesExperimentRequest class.

Field	Type	Label	Description
experiment_id	string		Experiment id.

TilesServiceIsTilesExperimentResponse

Response object representing the value of IsTiles for the experiment.

Field	Type	Label	Description
is_tiles_experiment	bool		A value indicating whether the experiment is a tiles experiment.

TilesService

The ITilesService interface.

KindMethod NameRequest TypeResponse TypeDescription

c**Controlling method:**
Changes the state of the system and can only be executed if ZEN is in API mode (explicit or unsupervised) and a control token is provided.

AddEllipseTileRegion TilesServiceAddEllipseTileRegionRequest TilesServiceAddEllipseTileRegionResponse

Adds an ellipse tile region with the specified position and size values to the acquisition block with the specified index in the specified experiment.

c**Controlling method:**
Changes the state of the system and can only be executed if ZEN is in API mode (explicit or unsupervised) and a control token is provided.

AddPolygonTileRegion TilesServiceAddPolygonTileRegionRequest TilesServiceAddPolygonTileRegionResponse

Adds a polygon tile region with the specified points list to the acquisition block with the specified index in the specified experiment.

c**Controlling method:**
Changes the state of the system and can only be executed if ZEN is in API mode (explicit or unsupervised) and a control token is provided.

AddPositions TilesServiceAddPositionsRequest TilesServiceAddPositionsResponse

Adds positions with the specified coordinates to the specified experiment.

c**Controlling method:**
Changes the state of the system and can only be executed if ZEN is in API mode (explicit or unsupervised) and a control token is provided.

AddRectangleTileRegion TilesServiceAddRectangleTileRegionRequest TilesServiceAddRectangleTileRegionResponse

Adds a rectangle tile region with the specified position and size values to the specified experiment.

c**Controlling method:**
Changes the state of the system and can only be executed if ZEN is in API mode (explicit or unsupervised) and a control token is provided.

Clear TilesServiceClearRequest TilesServiceClearResponse

Clears all tile regions and positions in the current acquisition block.

m**Monitoring method:**
Does not change the state of the system and can be executed at any time.

IsTilesExperiment TilesServiceIsTilesExperimentRequest TilesServiceIsTilesExperimentResponse

Determines whether the current experiment block in the specified experiment is a Tiles experiment. This means that the corresponding Tiles dimension is activated.

zen_api/lm/acquisition/v1beta/track_info.proto

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TrackInfo

Information about a track.

Field	Type	Label	Description
is_activated	bool		A value indicating whether the track is activated.
channels	ChannelInfo	repeated	The info for all channels in the track.

zen_api/lm/acquisition/v1beta/track_service.proto

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TrackServiceActivateChannelRequest

The TrackServiceActivateChannelRequest class.

Field	Type	Label	Description
experiment_id	string		Experiment id.
track_index	int32		An index of a track.
channel_index	int32		An index of a channel in the track to be activated.

TrackServiceActivateChannelResponse

The TrackServiceActivateChannelResponse class.

TrackServiceActivateTrackRequest

The TrackServiceActivateTrackRequest class.

Field	Type	Label	Description
experiment_id	string		Experiment id.
track_index	int32		An index of a track to be activated.

TrackServiceActivateTrackResponse

The TrackServiceActivateTrackResponse class.

TrackServiceDeactivateChannelRequest

The TrackServiceDeactivateChannelRequest class.

Field	Type	Label	Description
experiment_id	string		Experiment id.
track_index	int32		An index of a track.
channel_index	int32		An index of a channel in the track to be deactivated.

TrackServiceDeactivateChannelResponse

The TrackServiceDeactivateChannelResponse class.

TrackServiceDeactivateTrackRequest

The TrackServiceDeactivateTrackRequest class.

Field	Type	Label	Description
experiment_id	string		Experiment id.
track_index	int32		An index of a track to be deactivated.

TrackServiceDeactivateTrackResponse

The TrackServiceDeactivateTrackResponse class.

TrackServiceGetTrackInfoRequest

The TrackServiceGetTrackInfoRequest class.

Field	Type	Label	Description
experiment_id	string		Experiment id.

TrackServiceGetTrackInfoResponse

Response object representing the value of track information.

Field	Type	Label	Description
track_info	TrackInfo	repeated	The track information.

TrackService

The ITrackService interface.

KindMethod NameRequest TypeResponse TypeDescription

c**Controlling method:**
Changes the state of the system and can only be executed if ZEN is in API mode (explicit or unsupervised) and a control token is provided.

ActivateChannel TrackServiceActivateChannelRequest TrackServiceActivateChannelResponse

Activates a channel with a specific index in a specific track.

c**Controlling method:**
Changes the state of the system and can only be executed if ZEN is in API mode (explicit or unsupervised) and a control token is provided.

ActivateTrack TrackServiceActivateTrackRequest TrackServiceActivateTrackResponse

Activates a track with a specific index.

c**Controlling method:**
Changes the state of the system and can only be executed if ZEN is in API mode (explicit or unsupervised) and a control token is provided.

DeactivateChannel TrackServiceDeactivateChannelRequest TrackServiceDeactivateChannelResponse

Deactivates a channel with a specific index in a specific track.

c**Controlling method:**
Changes the state of the system and can only be executed if ZEN is in API mode (explicit or unsupervised) and a control

token is provided.

DeactivateTrack TrackServiceDeactivateTrackRequest TrackServiceDeactivateTrackResponse

Deactivates a track with a specific index.

m**Monitoring method:**
Does not change the state of the system and can be executed at any time.

GetTrackInfo TrackServiceGetTrackInfoRequest TrackServiceGetTrackInfoResponse

Gets the track information.

zen_api/lm/acquisition/v1beta/zstack_service.proto

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ZStackServiceGetZStackInfoRequest

The ZStackServiceGetZStackInfoRequest class.

Field	Type	Label	Description
experiment_id	string		The experiment Id.

ZStackServiceGetZStackInfoResponse

Response object representing the value of GetZStackInfo for the experiment.

Field	Type	Label	Description
interval	double		The value of the interval between 2 slices (unit: m).
first_slice	double		The position of the first slice in Z-stack (unit: m).
last_slice	double		The position of the last slice in Z-stack (unit: m).
range	double		The distance between the first and last slice (unit: m).
num_slices	int32		The number of slices.
is_center_mode	bool		A value indicating whether the Z-stack is in center mode.
offset	double		The value of the offset which is applied to the whole Z-stack.

ZStackServiceIsZStackExperimentRequest

The ZStackServiceIsZStackExperimentRequest class.

Field	Type	Label	Description
experiment_id	string		The experiment Id.

ZStackServiceIsZStackExperimentResponse

Response object representing the value of IsZStackExperiment for the experiment.

Field	Type	Label	Description
is_zstack_experiment	bool		A value indicating whether the experiment is a Z-Stack experiment.

ZStackServiceModifyZStackCenterRangeRequest

The ZStackServiceModifyZStackCenterRangeRequest class.

Field	Type	Label	Description
experiment_id	string		The experiment Id.
center	google.protobuf.DoubleValue		The center position between the first and last slice (unit: m).
interval	google.protobuf.DoubleValue		The interval between 2 slices (unit: m).
range	google.protobuf.DoubleValue		Distance between the first and last slice (unit: m).

ZStackServiceModifyZStackCenterRangeResponse

The ZStackServiceModifyZStackCenterRangeResponse class.

ZStackServiceModifyZStackFirstLastRequest

The ZStackServiceModifyZStackFirstLastRequest class.

Field	Type	Label	Description
experiment_id	string		The experiment Id.
first	google.protobuf.DoubleValue		Position of the first slice in Z-stack (unit: m).
last	google.protobuf.DoubleValue		Position of the last slice in Z-stack (unit: m).
interval	google.protobuf.DoubleValue		The interval between 2 slices (unit: m).

ZStackServiceModifyZStackFirstLastResponse

The ZStackServiceModifyZStackFirstLastResponse class.

ZStackService

The IZStackService interface.

KindMethod NameRequest TypeResponse TypeDescription

m**Monitoring method:**
Does not change the state of the system and can be executed at any time.

GetZStackInfo ZStackServiceGetZStackInfoRequest ZStackServiceGetZStackInfoResponse

Gets the information about a Z-stack.

m**Monitoring method:**
Does not change the state of the system and can be executed at any time.

IsZStackExperiment ZStackServiceIsZStackExperimentRequest ZStackServiceIsZStackExperimentResponse

Determines whether the current experiment block in the specified experiment is a Z-stack experiment. This means that the corresponding Z-stack setup dimension is activated.

c**Controlling method:**
Changes the state of the system and can only be executed if ZEN is in API mode (explicit or unsupervised) and a control token is provided.

ModifyZStackCenterRange ZStackServiceModifyZStackCenterRangeRequest ZStackServiceModifyZStackCenterRangeResponse

Modifies the dimensions of the Z-stack inside the experiment.

c**Controlling method:**
Changes the state of the system and can only be executed if ZEN is in API mode (explicit or unsupervised) and a control token is provided.

ModifyZStackFirstLast ZStackServiceModifyZStackFirstLastRequest ZStackServiceModifyZStackFirstLastResponse

Modifies the dimensions of the Z-stack inside the experiment.

zen_api/lm/hardware/v1/focus_service.proto

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FocusServiceGetAccelerationRequest

The FocusServiceGetAccelerationRequest class.

FocusServiceGetAccelerationResponse

Acceleration of the focus in %.

Field	Type	Label	Description
value	double		The acceleration in %.

FocusServiceGetPositionRequest

The FocusServiceGetPositionRequest class.

FocusServiceGetPositionResponse

Position of the focus in µm.

Field	Type	Label	Description
value	double		The position in µm.

FocusServiceGetSpeedRequest

The FocusServiceGetSpeedRequest class.

FocusServiceGetSpeedResponse

Speed of the focus in %.

Field	Type	Label	Description
value	double		The speed in %.

FocusServiceMoveToRequest

The FocusServiceMoveToRequest class.

Field	Type	Label	Description

Field	Type	Label	Description
value	double		New position in µm.

FocusServiceMoveToResponse

Describes the result of a Focus.MoveTo request.

Field	Type	Label	Description
position_changed	bool		A value indicating whether the position was changed.

FocusServiceSetAccelerationRequest

The FocusServiceSetAccelerationRequest class.

Field	Type	Label	Description
acceleration	double		Acceleration in percent, i.e. values from range [0;100].

FocusServiceSetAccelerationResponse

The FocusServiceSetAccelerationResponse class.

FocusServiceSetSpeedRequest

The FocusServiceSetSpeedRequest class.

Field	Type	Label	Description
speed	double		Speed in percent, i.e. values from range [0;100].

FocusServiceSetSpeedResponse

The FocusServiceSetSpeedResponse class.

FocusServiceStopRequest

The FocusServiceStopRequest class.

FocusServiceStopResponse

The FocusServiceStopResponse class.

FocusService

The IFocusService interface.

KindMethod NameRequest TypeResponse TypeDescription

m**Monitoring method:**
Does not change the state of the system and can be executed at any time.

GetAcceleration FocusServiceGetAccelerationRequest FocusServiceGetAccelerationResponse

Gets the focus acceleration.

m**Monitoring method:**
Does not change the state of the system and can be executed at any time.

GetPosition FocusServiceGetPositionRequest FocusServiceGetPositionResponse

Gets the focus position.

m**Monitoring method:**
Does not change the state of the system and can be executed at any time.

GetSpeed FocusServiceGetSpeedRequest FocusServiceGetSpeedResponse

Gets the focus speed.

c**Controlling method:**
Changes the state of the system and can only be executed if ZEN is in API mode (explicit or unsupervised) and a control token is provided.

MoveTo FocusServiceMoveToRequest FocusServiceMoveToResponse

Moves the focus to the given position in µm.

c**Controlling method:**
Changes the state of the system and can only be executed if ZEN is in API mode (explicit or unsupervised) and a control token is provided.

SetAcceleration FocusServiceSetAccelerationRequest FocusServiceSetAccelerationResponse

Sets the acceleration of the focus in percent.

c**Controlling method:**
Changes the state of the system and can only be executed if ZEN is in API mode (explicit or unsupervised) and a control token is provided.

SetSpeed FocusServiceSetSpeedRequest FocusServiceSetSpeedResponse

Sets the speed of the focus in percent.

c**Controlling method:**
Changes the state of the system and can only be executed if ZEN is in API mode (explicit or unsupervised) and a control token is provided.

Stop FocusServiceStopRequest FocusServiceStopResponse

Stops the focus if it is moving.

zen_api/lm/hardware/v1/stage_service.proto

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StageServiceGetAccelerationRequest

The StageServiceGetAccelerationRequest class.

StageServiceGetAccelerationResponse

Acceleration of the stage.

Field	Type	Label	Description
x	double		The X component of the position in in µm.
y	double		The Y component of the position in in µm.

StageServiceGetPositionRequest

The StageServiceGetPositionRequest class.

StageServiceGetPositionResponse

Position of the stage in µm.

Field	Type	Label	Description
x	double		The X component of the position in µm.
y	double		The Y component of the position in µm.

StageServiceGetSpeedRequest

The StageServiceGetSpeedRequest class.

StageServiceGetSpeedResponse

Speed of the stage.

Field	Type	Label	Description
x	double		The X component of the speed in %.
y	double		The Y component of the speed in %.

StageServiceMoveToRequest

The StageServiceMoveToRequest class.

Field	Type	Label	Description
x	google.protobuf.DoubleValue		Target position x in µm. Leave out if x position should not be changed.
y	google.protobuf.DoubleValue		Target position y in µm. Leave out if y position should not be changed.

StageServiceMoveToResponse

Describes the result of a Stage.MoveTo request.

Field	Type	Label	Description
position_changed	bool		A value indicating whether the position was changed.

StageServiceSetAccelerationRequest

The StageServiceSetAccelerationRequest class.

Field	Type	Label	Description
acceleration_x	google.protobuf.DoubleValue		Acceleration in x direction in percent, i.e. values from range [0;100].
acceleration_y	google.protobuf.DoubleValue		Acceleration in y direction in percent, i.e. values from range [0;100].

StageServiceSetAccelerationResponse

The StageServiceSetAccelerationResponse class.

StageServiceSetSpeedRequest

The StageServiceSetSpeedRequest class.

Field	Type	Label	Description
speed_x	google.protobuf.DoubleValue		Speed in x direction in percent, i.e. values from range [0;100].
speed_y	google.protobuf.DoubleValue		Speed in y direction in percent, i.e. values from range [0;100].

StageServiceSetSpeedResponse

The StageServiceSetSpeedResponse class.

StageServiceStopRequest

The StageServiceStopRequest class.

StageServiceStopResponse

The StageServiceStopResponse class.

StageService

The IStageService interface.

KindMethod NameRequest TypeResponse TypeDescription

m**Monitoring method:**
Does not change the state of the system and can be executed at any time.

GetAcceleration StageServiceGetAccelerationRequest StageServiceGetAccelerationResponse

Gets the acceleration of the stage.

m**Monitoring method:**
Does not change the state of the system and can be executed at any time.

GetPosition StageServiceGetPositionRequest StageServiceGetPositionResponse

Gets the current stage position.

m**Monitoring method:**
Does not change the state of the system and can be executed at any time.

GetSpeed StageServiceGetSpeedRequest StageServiceGetSpeedResponse

Gets the speed of the stage.

c**Controlling method:**
Changes the state of the system and can only be executed if ZEN is in API mode (explicit or unsupervised) and a control token is provided.

MoveTo StageServiceMoveToRequest StageServiceMoveToResponse

Moves the stage to the given position. Is a value for a dimension is no supplied, the position in that dimension it is kept as is.

c**Controlling method:**
Changes the state of the system and can only be executed if ZEN is in API mode (explicit or unsupervised) and a control token is provided.

SetAcceleration StageServiceSetAccelerationRequest StageServiceSetAccelerationResponse

Sets the acceleration of the stage in percent.

c**Controlling method:**
Changes the state of the system and can only be executed if ZEN is in API mode (explicit or unsupervised) and a control token is provided.

SetSpeed StageServiceSetSpeedRequest StageServiceSetSpeedResponse

Sets the speed of the stage in percent.

c**Controlling method:**
Changes the state of the system and can only be executed if ZEN is in API mode (explicit or unsupervised) and a control token is provided.

Stop StageServiceStopRequest StageServiceStopResponse

Stops the stage if it is moving.

zen_api/lm/hardware/v2/focus_service.proto

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FocusServiceGetAccelerationRequest

The FocusServiceGetAccelerationRequest class.

FocusServiceGetAccelerationResponse

Acceleration of the focus in %.

Field	Type	Label	Description
value	double		The acceleration in %.

FocusServiceGetPositionRequest

The FocusServiceGetPositionRequest class.

FocusServiceGetPositionResponse

Position of the focus in meters.

Field	Type	Label	Description
value	double		The position in meters.

FocusServiceGetSpeedRequest

The FocusServiceGetSpeedRequest class.

FocusServiceGetSpeedResponse

Speed of the focus in %.

Field	Type	Label	Description
value	double		The speed in %.

FocusServiceMoveToRequest

The FocusServiceMoveToRequest class.

Field	Type	Label	Description
value	double		New position in meters.

FocusServiceMoveToResponse

Describes the result of a Focus.MoveTo request.

Field	Type	Label	Description
position_changed	bool		A value indicating whether the position was changed.

FocusServiceSetAccelerationRequest

The FocusServiceSetAccelerationRequest class.

Field	Type	Label	Description
acceleration	double		Acceleration in percent, i.e. values from range [0;100].

FocusServiceSetAccelerationResponse

The FocusServiceSetAccelerationResponse class.

FocusServiceSetSpeedRequest

The FocusServiceSetSpeedRequest class.

Field	Type	Label	Description
speed	double		Speed in percent, i.e. values from range [0;100].

FocusServiceSetSpeedResponse

The FocusServiceSetSpeedResponse class.

FocusServiceStopRequest

The FocusServiceStopRequest class.

FocusServiceStopResponse

The FocusServiceStopResponse class.

FocusService

The IFocusService interface.

KindMethod NameRequest TypeResponse TypeDescription

m**Monitoring method:**
Does not change the state of the system and can be executed at any time.

GetAcceleration FocusServiceGetAccelerationRequest FocusServiceGetAccelerationResponse

Gets the focus acceleration.

m**Monitoring method:**
Does not change the state of the system and can be executed at any time.

GetPosition FocusServiceGetPositionRequest FocusServiceGetPositionResponse

Gets the focus position.

m**Monitoring method:**
Does not change the state of the system and can be executed at any time.

GetSpeed FocusServiceGetSpeedRequest FocusServiceGetSpeedResponse

Gets the focus speed.

c**Controlling method:**
Changes the state of the system and can only be executed if ZEN is in API mode (explicit or unsupervised) and a control token is provided.

MoveTo FocusServiceMoveToRequest FocusServiceMoveToResponse

Moves the focus to the given position in meters.

c**Controlling method:**
Changes the state of the system and can only be executed if ZEN is in API mode (explicit or unsupervised) and a control token is provided.

SetAcceleration FocusServiceSetAccelerationRequest FocusServiceSetAccelerationResponse

Sets the acceleration of the focus in percent.

c**Controlling method:**
Changes the state of the system and can only be executed if ZEN is in API mode (explicit or unsupervised) and a control token is provided.

SetSpeed FocusServiceSetSpeedRequest FocusServiceSetSpeedResponse

Sets the speed of the focus in percent.

c**Controlling method:**
Changes the state of the system and can only be executed if ZEN is in API mode (explicit or unsupervised) and a control token is provided.

Stop FocusServiceStopRequest FocusServiceStopResponse

Stops the focus if it is moving.

zen_api/lm/hardware/v2/stage_service.proto

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StageServiceGetAccelerationRequest

The StageServiceGetAccelerationRequest class.

StageServiceGetAccelerationResponse

Acceleration of the stage.

Field	Type	Label	Description
x	double		The X component of the acceleration in %.
y	double		The Y component of the acceleration in %.

StageServiceGetPositionRequest

The StageServiceGetPositionRequest class.

StageServiceGetPositionResponse

Position of the stage.

Field	Type	Label	Description
x	double		The X component of the position in meters.
y	double		The Y component of the position in meters.

StageServiceGetSpeedRequest

The StageServiceGetSpeedRequest class.

StageServiceGetSpeedResponse

Speed of the stage.

Field	Type	Label	Description
x	double		The X component of the speed in %.
y	double		The Y component of the speed in %.

StageServiceMoveToRequest

The StageServiceMoveToRequest class.

Field	Type	Label	Description
x	google.protobuf.DoubleValue		Target position x in meters. Leave out if x position should not be changed.
y	google.protobuf.DoubleValue		Target position y in meters. Leave out if y position should not be changed.

StageServiceMoveToResponse

Describes the result of a Stage.MoveTo request.

Field	Type	Label	Description
position_changed	bool		A value indicating whether the position was changed.

StageServiceSetAccelerationRequest

The StageServiceSetAccelerationRequest class.

Field	Type	Label	Description
acceleration_x	google.protobuf.DoubleValue		Acceleration in x direction in percent, i.e. values from range [0;100].
acceleration_y	google.protobuf.DoubleValue		Acceleration in y direction in percent, i.e. values from range [0;100].

StageServiceSetAccelerationResponse

The StageServiceSetAccelerationResponse class.

StageServiceSetSpeedRequest

The StageServiceSetSpeedRequest class.

Field	Type	Label	Description
speed_x	google.protobuf.DoubleValue		Speed in x direction in percent, i.e. values from range [0;100].
speed_y	google.protobuf.DoubleValue		Speed in y direction in percent, i.e. values from range [0;100].

StageServiceSetSpeedResponse

The StageServiceSetSpeedResponse class.

StageServiceStopRequest

The StageServiceStopRequest class.

StageServiceStopResponse

The StageServiceStopResponse class.

StageService

The IStageService interface.

Kind Method Name Request Type Response Type Description

m **Monitoring method:**
Does not change the state of the system and can be executed at any time.

GetAcceleration StageServiceGetAccelerationRequest StageServiceGetAccelerationResponse

Gets the acceleration of the stage.

m **Monitoring method:**
Does not change the state of the system and can be executed at any time.

GetPosition StageServiceGetPositionRequest StageServiceGetPositionResponse

Gets the current stage position.

m **Monitoring method:**
Does not change the state of the system and can be executed at any time.

GetSpeed StageServiceGetSpeedRequest StageServiceGetSpeedResponse

Gets the speed of the stage.

c**Controlling method:**
Changes the state of the system and can only be executed if ZEN is in API mode (explicit or unsupervised) and a control token is provided.

MoveTo StageServiceMoveToRequest StageServiceMoveToResponse

Moves the stage to the given position. Is a value for a dimension is no supplied, the position in that dimension it is kept as is.

c**Controlling method:**
Changes the state of the system and can only be executed if ZEN is in API mode (explicit or unsupervised) and a control token is provided.

SetAcceleration StageServiceSetAccelerationRequest StageServiceSetAccelerationResponse

Sets the acceleration of the stage in percent.

c**Controlling method:**
Changes the state of the system and can only be executed if ZEN is in API mode (explicit or unsupervised) and a control token is provided.

SetSpeed StageServiceSetSpeedRequest StageServiceSetSpeedResponse

Sets the speed of the stage in percent.

c**Controlling method:**
Changes the state of the system and can only be executed if ZEN is in API mode (explicit or unsupervised) and a control token is provided.

Stop StageServiceStopRequest StageServiceStopResponse

Stops the stage if it is moving.

zen_api/lm/slide_scan/v1/channel_settings.proto

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ChannelSettings

Settings for a channel.

Field	Type	Label	Description
channel_identifier	string		The identifier for the master channel.
channel_name	string		The name for the channel.
channel_description	string		The description for the channel.
dye_name	string		The fluorescence dye.
intensity	double		The lamp intensity that should be used for a channel. The intensity is set in percent. (Values ranging from 0 to 100).
exposure_time	double		The exposure time that should be used for a channel. The exposure time is set in milliseconds. (Values ranging from 0.1 to 2000ms).

zen_api/lm/slide_scan/v1/information_base.proto

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InformationBase

Base class for all information types.

Field	Type	Label	Description
SimpleInformation	SimpleInformation		
SlideScanSystemInformation	SlideScanSystemInformation		
MagazineInformation	MagazineInformation		

MagazineInformation

Data container for inforamtion about the magazine state.

Field	Type	Label	Description
is_door_closed	bool		A value indicating whether the Axioscan tray door is closed.
trays	TrayInformation	repeated	The magazine state by providing the list of available trays.

SimpleInformation

Data container for a simple message inforamtion.

Field	Type	Label	Description
message	string		The simple string message.

SlideScanSystemInformation

Data container for information about the hardware state.

Field	Type	Label	Description
is_idle	bool		A value indicating whether an Axioscan system is idle.
is_scan_running	bool		A value indicating whether a scan is running.
is_preview_scan_running	bool		A value indicating whether a preview scan is running.
is_tray_initializing	bool		A value indicating whether a tray is being initialized.

zen_api/lm/slide_scan/v1/profile_information.proto

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ProfileInformation

ProfileInformation contains information about the scan profile associated with a specific slide.

Field	Type	Label	Description
profile_name	string		The profile name associated with the slides acquisition.

zen_api/lm/slide_scan/v1/response_code.proto

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ResponseCode

Numerical result code.

Name	Number	Description
RESPONSE_CODE_UNSPECIFIED	0	Default value if the status is not specified.
RESPONSE_CODE_INVALID_ARGUMENT	1	The required parameter is missing.
RESPONSE_CODE_NOT_FOUND	2	The requested resource could not be found.
RESPONSE_CODE_NOT_ALLOWED	3	The operation is not allowed.

zen_api/lm/slide_scan/v1/response_type.proto

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ResponseType

Kind of failure with implication to error recovery.

Name	Number	Description
RESPONSE_TYPE_UNSPECIFIED	0	Default value if the ResponseType is not specified.
RESPONSE_TYPE_SUCCESS	1	The API call is accepted and will be processed. In this case the response code can be unspecified.
RESPONSE_TYPE_WARNING	2	The API call is accepted and will be processed. In this case, the response contains an indication of possible problem settings.
RESPONSE_TYPE_FAILED	3	Something went wrong. This is the usual error type.
RESPONSE_TYPE_EXCEPTION	4	The call threw an exeption.

zen_api/lm/slide_scan/v1/slide_information.proto

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SlideInformation

SlideInformation holds information about an Axioscan slide.

Field	Type	Label	Description
slide_on_frame_position	int32		The slide position on the frame - range [1, 4]. The maximum value depending on frame type.
state	SlideState		The ZenApi.LM.SlideScan.V1.SlideState of the slide.
profile_information	ProfileInformation		The corresponding ZenApi.LM.SlideScan.V1.SlideInformation.ProfileInformation of the slide.
is_selected_for_processing	bool		A value indicating whether this slide is selected for processing.
barcode	string		The barcode of the slide.

Field	Type	Label	Description
label_image_path	string		The path to the label image.
preview_image_path	string		The path to the preview image.
scan_image_path	string		The path to the scan image.

zen_api/lm/slide_scan/v1/slide_position_information.proto

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SlidePositionInformation

SlidePositionInformation holds information about an AxioScan slide position.

Field	Type	Label	Description
slide_on_frame_position	int32		The slide position on the frame - range [1, 4]. The maximum value depending on frame type.
tray_position	int32		The position of the tray inside the Axioscan magazine in the range of [1, 26].
image_name	string		The image name for the slide.

zen_api/lm/slide_scan/v1/slide_scan_service.proto

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GeneralResponse

A general response for all asynchronous requests that do not return any results or data.

Field	Type	Label	Description
type	ResponseType		The type of resonse message.
code	ResponseCode		The code of resonse message.
description	string		A description. Explanation text, for developers only.
user_message	string		A message suitable to be shown in user interfaces, will be translated by Api.

SlideScanServiceGetChannelSettingsRequest

Describes the input parameters for retrieving the configured channels.

Field	Type	Label	Description
scan_profile_path	string		The path of the specified scan profile.

SlideScanServiceGetChannelSettingsResponse

Lists the configured channel settings in the specified scan profile.

Field	Type	Label	Description
channel_setting_list	ChannelSettings	repeated	The configured channel settings.

SlideScanServiceGetMagazineStateRequest

Describes the input parameters for a call to retrieve the magazine state.

SlideScanServiceGetMagazineStateResponse

Lists the populated slides of each tray.

Field	Type	Label	Description
trays	TrayInformation	repeated	The loaded slides per tray.

SlideScanServiceObserveRequest

Describes the input parameters for a call to observe the events and progress

that happen either during acquisition or while the microscope is idling.

SlideScanServiceObserveResponse

Describes the output parameters for a call to observe the events, progress

and additional information like warnings and errors of a running scan profile acquisition.

The response might be a stream of different information types (e.g. Progress, Error, Hardware State, ...).

Field	Type	Label	Description
information	InformationBase		The flexible, variable information.

SlideScanServiceResetSlideStatesRequest

Describes the input parameters for resetting the state of specified slides to new.

Field	Type	Label	Description
slide_position_list	SlidePositionInformation	repeated	The position of the slide list to be reset.

SlideScanServiceResetSlideStatesResponse

Describes the output parameters for resetting the state of specified slides.

Field	Type	Label	Description
response	GeneralResponse		A general response about the success/error state of the request.

SlideScanServiceStartScanPreviewRequest

Describes the input parameters for the preview start.

Field	Type	Label	Description
scan_profile_name	string		The name of the scan profile that should be started.
slide_position_list	SlidePositionInformation	repeated	The list of tray/slides to be processed.

SlideScanServiceStartScanPreviewResponse

Response of starting a preview in the slide scan service.

Field	Type	Label	Description
response	GeneralResponse		A general response to inform about the requests success/error state.

SlideScanServiceStartScanProfileRequest

Describes the input parameters for the scan profile start.

Field	Type	Label	Description
scan_profile_name	string		The name of the scan profile that should be started.
slide_position_list	SlidePositionInformation	repeated	The list of tray/slides to be processed.
channel_settings	ChannelSettings	repeated	The list of changed channel settings.

SlideScanServiceStartScanProfileResponse

Describes the output parameters for a call to start the scan profile.

Field	Type	Label	Description
response	GeneralResponse		A general response to inform about the requests success/error state.

SlideScanServiceStopScanPreviewRequest

Represents a request to stop the preview in the SlideScan service.

SlideScanServiceStopScanPreviewResponse

Represents the response for stopping the preview in the slide scan service.

Field	Type	Label	Description
response	GeneralResponse		A general response to inform about the requests success/error state.

SlideScanServiceStopScanProfileRequest

Describes the input parameters for stopping the scan profile.

SlideScanServiceStopScanProfileResponse

Describes the output parameters for a call to stop the scan profile.

Field	Type	Label	Description
response	GeneralResponse		A general response to inform about the requests success/error state.

SlideScanService

The ISlideScanService interface.

KindMethod NameRequest TypeResponse TypeDescription

m**Monitoring method:**
Does not change the state of the system and can be executed at any time.

GetChannelSettings SlideScanServiceGetChannelSettingsRequest SlideScanServiceGetChannelSettingsResponse

Gets a list of configured channel settings of a scan profile.

m**Monitoring method:**
Does not change the state of the system and can be executed at any time.

GetMagazineState SlideScanServiceGetMagazineStateRequest SlideScanServiceGetMagazineStateResponse

Gets the magazine state.

m**Monitoring method:**
Does not change the state of the system and can be executed at any time.

Observe SlideScanServiceObserveRequest SlideScanServiceObserveResponse stream

Monitors anything that happens within ZEN or the microscope. The main purpose is to observe the scan profile acquisition progress.

c**Controlling method:**
Changes the state of the system and can only be executed if ZEN is in API mode (explicit or unsupervised) and a control token is provided.

ResetSlideStates SlideScanServiceResetSlideStatesRequest SlideScanServiceResetSlideStatesResponse

Resets the specified slides to new.

c**Controlling method:**
Changes the state of the system and can only be executed if ZEN is in API mode (explicit or unsupervised) and a control token is provided.

StartScanPreview SlideScanServiceStartScanPreviewRequest SlideScanServiceStartScanPreviewResponse

Starts the preview with the specified input.

c**Controlling method:**
Changes the state of the system and can only be executed if ZEN is in API mode (explicit or unsupervised) and a control token is provided.

StartScanProfile SlideScanServiceStartScanProfileRequest SlideScanServiceStartScanProfileResponse

Starts the scan profile with the specified input.

c**Controlling method:**
Changes the state of the system and can only be executed if ZEN is in API mode (explicit or unsupervised) and a control token is provided.

StopScanPreview SlideScanServiceStopScanPreviewRequest SlideScanServiceStopScanPreviewResponse

Stops the preview execution.

c**Controlling method:**
Changes the state of the system and can only be executed if ZEN is in API mode (explicit or unsupervised) and a control token is provided.

StopScanProfile SlideScanServiceStopScanProfileRequest SlideScanServiceStopScanProfileResponse

Stops the scan profile execution.

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SlideState

This enumeration names all possible slide processing states.

Name	Number	Description
SLIDE_STATE_UNSPECIFIED	0	Default value if status is not specified.
SLIDE_STATE_STOPPED	1	Processing was stopped.
SLIDE_STATE_NEW	2	New (not processed).
SLIDE_STATE_PREVIEW_IN_PROGRESS	3	Preview currently in work.
SLIDE_STATE_INPUT_REQUIRED	4	Preview processing finished, but input required.
SLIDE_STATE_PREVIEWED	5	Preview processing finished.
SLIDE_STATE_SCAN_IN_PROGRESS	6	Scan currently in work.
SLIDE_STATE_FINISHED	7	Processing finished.
SLIDE_STATE_ERROR	8	Processing error occurred.
SLIDE_STATE_SKIPPED	9	Slide was skipped by user.

zen_api/lm/slide_scan/v1/tray_information.proto

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TrayInformation

TrayInformation contains information about an Axioscan tray.

Field	Type	Label	Description
position	int32		The position of the tray inside the Axioscan magazine in the range of [1, 26].
type	TrayType		The ZenApi.LM.SlideScan.V1.TrayType of the tray. The type determines the number of possible slides on the tray.
working_state	TrayWorkingState		The ZenApi.LM.SlideScan.V1.TrayWorkingState of the tray. The working state of the entire tray.
slot_state	TraySlotState		The ZenApi.LM.SlideScan.V1.TraySlotState of the tray. The status of the tray slot (open/closed statuses).
slides	SlideInformation	repeated	ZenApi.LM.SlideScan.V1.SlideInformation of the slides.

zen_api/lm/slide_scan/v1/tray_slot_state.proto

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TraySlotState

Enum defining the states of slide scanner slot LEDs.

Name	Number	Description
TRAY_SLOT_STATE_UNSPECIFIED	0	Default value if status is not specified.

Name	Number	Description
TRAY_SLOT_STATE_SLOT_OPEN_SYSTEM_PAUSED	1	Slot swiveled out for assembling.
TRAY_SLOT_STATE_SLOT_OPEN_TRAY_LOADED	2	Slot swiveled out for assembling but Tray is on stage.
TRAY_SLOT_STATE_SLOT_CLOSED_TRAY_NOT_PROCESSED	3	Slot swiveled in with tray containing unprocessed slides.
TRAY_SLOT_STATE_SLOT_CLOSED_TRAY_PROCESSED	4	Slot swiveled in with tray containing processed slides.
TRAY_SLOT_STATE_SLOT_CLOSED_PROCESS_ERROR	5	Slot swiveled in with tray but an processing error was occurred.
TRAY_SLOT_STATE_SLOT_CLOSED_TRAY_PRESCANNED	6	Slot swiveled in with tray containing pre-scanned slides.
TRAY_SLOT_STATE_SLOT_CLOSED_TRAY_LOADED	7	Slot swiveled in and tray is on stage.
TRAY_SLOT_STATE_SLOT_CLOSED_NO_TRAY	8	Slot swiveled in without tray.
TRAY_SLOT_STATE_SLOT_CLOSED_TRAY_IN_SYSTEM_AND_SLOT	9	Slot swiveled in with tray and a tray on the stage (Error case).
TRAY_SLOT_STATE_SLOT_CLOSED_UNKNOWN_TRAY	10	Slot swiveled in with an unknown tray type.
TRAY_SLOT_STATE_SLOT_CLOSED_NO_SLIDES	11	Slot swiveled in with an empty tray.
TRAY_SLOT_STATE_SLOT_CLOSED_TRAY_PARTLY_PROCESSED_WITH_ERRORS	12	Slot swiveled in with tray containing processed slides.
TRAY_SLOT_STATE_UNKNOWN	255	Unknown type (tray is inserted but could not be determined).

zen_api/lm/slide_scan/v1/tray_type.proto

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TrayType

Enum defining the types of slide scanner trays.

Name	Number	Description
TRAY_TYPE_UNSPECIFIED	0	Default value if status is not specified.
TRAY_TYPE_NONE	1	No tray.

Name	Number	Description
TRAY_TYPE_SCAN1X3	2	Scan tray for 4 slides of size 1'x3'.
TRAY_TYPE_SCAN2X3	3	Scan tray for 2 slides of size 2'x3'.
TRAY_TYPE_SCAN1X3_2X3	4	Scan tray for 2 slides, one of size 1'x3', one of size 2'x3'.
TRAY_TYPE_CALIBRATION_STAGE	5	Stage calibration slide holder tray.
TRAY_TYPE_SCAN1X3_BASIC	6	Scan tray for 4 slides of size 1'x3', basic design.
TRAY_TYPE_SCAN4X3	7	Scan tray for 1 slide of size 4'x3' or a combination of slides of unknown size.
TRAY_TYPE_PARKING	152	Arbitrary tray type to indicate the parking position. Is only available at parking position of the magazine changer.
TRAY_TYPE_UNKNOWN	153	Unknown type (tray is inserted but could not be determined).

zen_api/lm/slide_scan/v1/tray_working_state.proto

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TrayWorkingState

Enum defining the types of slide scanner trays working state.

Name	Number	Description
TRAY_WORKING_STATE_UNSPECIFIED	0	Default value if status is not specified.
TRAY_WORKING_STATE_NOT_SCANNED	1	The tray is not scanned.
TRAY_WORKING_STATE_PRESCANNED	2	The tray was pre scanned.
TRAY_WORKING_STATE_SCANNED	3	The tray was successfully scanned.
TRAY_WORKING_STATE_ERROR	4	There occurred an error while scanning or pre scanning the tray.
TRAY_WORKING_STATE_NOT_AVAILABLE	5	There is no tray available at this position.

Scalar Value Types

.proto Type	Notes	C++	Java	Python	Go	C#	PHP	Ruby
double		double	double	float	float64	double	float	Float
float		float	float	float	float32	float	float	Float

.proto Type	Notes	C++	Java	Python	Go	C#	PHP	Ruby
int32	Uses variable-length encoding. Inefficient for encoding negative numbers – if your field is likely to have negative values, use sint32 instead.	int32	int	int	int32	int	integer	Bignum or Fixnum (as required)
int64	Uses variable-length encoding. Inefficient for encoding negative numbers – if your field is likely to have negative values, use sint64 instead.	int64	long	int/long	int64	long	integer/string	Bignum
uint32	Uses variable-length encoding.	uint32	int	int/long	uint32	uint	integer	Bignum or Fixnum (as required)
uint64	Uses variable-length encoding.	uint64	long	int/long	uint64	ulong	integer/string	Bignum or Fixnum (as required)

.proto Type	Notes	C++	Java	Python	Go	C#	PHP	Ruby
sint32	Uses variable-length encoding. Signed int value. These more efficiently encode negative numbers than regular int32s.	int32	int	int	int32	int	integer	Bignum or Fixnum (as required)
sint64	Uses variable-length encoding. Signed int value. These more efficiently encode negative numbers than regular int64s.	int64	long	int/long	int64	long	integer/string	Bignum
fixed32	Always four bytes. More efficient than uint32 if values are often greater than 2^28.	uint32	int	int	uint32	uint	integer	Bignum or Fixnum (as required)

.proto Type	Notes	C++	Java	Python	Go	C#	PHP	Ruby
fixed64	Always eight bytes. More efficient than uint64 if values are often greater than 2^56.	uint64	long	int/long	uint64	ulong	integer/string	Bignum
sfixed32	Always four bytes.	int32	int	int	int32	int	integer	Bignum or Fixnum (as required)
sfixed64	Always eight bytes.	int64	long	int/long	int64	long	integer/string	Bignum
bool		bool	boolean	boolean	bool	bool	boolean	TrueClass/FalseClass
string	A string must always contain UTF-8 encoded or 7-bit ASCII text.	string	String	str/unicode	string	string	string	String (UTF-8)
bytes	May contain any arbitrary sequence of bytes.	string	ByteString	str	[]byte	ByteString	string	String (ASCII-8BIT)