



Comprehensive Video Analytics Solutions

Technical Note: Accessing Statistics Data

savVi 5.4 & 5.5



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1 Overview and Basic Guidelines

Agent Vi's savVi provides the capability to capture statistics data using analytics rules. This statistics data can be later retrieved directly from savVi's database and be used for business intelligence analysis. For clarity, savVi provides statistics reporting capabilities for those relevant analytics rules with statistics capabilities. The use of direct database access described in this document, is optional for cases that the end user or integrator wishes to obtain the raw data and manipulate that in a specific way.

For accessing savVi's statistics data, please refer to the following guidelines:

- savVi's statistics data is stored within the MS SQL database. Any access to this database should be done in compliance to standard SQL data retrieval as well as specific guidelines that are imposed by Microsoft SQL.
- Use the following parameters to access Agent Vi's statistics data in savVi:
 - a. Database Address: <database host>\<database instance name>. In the basic case that savVi installation was done as all-in-one and used the bundled MS SQL Express, then the database host is the same server that runs savVi and the instance name is "VIDATABASE08", For example:
192.168.2.210\VIDATABASE08
 - b. Database User: [V\SystemUser](#)
 - c. Database Password: [V1\\$y\\$t3m2P@\\$w0rd](#)

2 Relevant Database Tables

The main database Table for statistics gathering is StatisticsData_STA. However, you may need to access additional database tables for complementary information. All relevant tables are described in the sub-sections below.

2.1 StatisticsData_STA

Whenever statistics information is saved for a given rule (typically every 5 minutes), a database record is added to this table. The following list describes the database table columns:

Column Name	Data Type	Description
STA_RuleId	Int	Rule unique identifier
STA_Type	int	Statistics entry type enumeration - see the possible values per rule type in the table below
STA_Value	float	Statistics entry value - see the meaning of that per rule type in the table below
STA_StartTime	datetime	Beginning time of this statistics data entry
STA_EndTime	datetime	End time of this statistics data entry

STA_Type and STA_Value per rule type are described in the following:

Rule Type	STA_Type	Meaning of STA_Value
Person Counting	0	Person count
Person Crowding	5	Average area coverage in %
Person Occupancy	4	Average number of people
Vehicle Counting	0	Vehicle count
Vehicle Speed Analysis	2	Average speed in meter/s

Note: Other enumeration values of STA_Type that may appear in some rows of this table are for internal Agent Vi use and should not be used by external applications.

2.2 SensorRule_SRL

The SensorRule_SRL table contains the details for all rules that are configured in the system. The following table attributes could be relevant for statistics applications:

Column Name	Data Type	Description
SRL_Id	int	Rule ID. This is the same rule ID that allows you accessing the statistics table.
SRL_Name	Nvarchar(50)	The rule name as appears to the operator
SRL_RuleGUID	uniqueidentifier	Unique identifier of the rule type. See the table below for the relevant values.

With respect to the SRL_RuleGUID attribute, the following values are relevant for statistics rules:

Rule Type	SRL_RuleGUID
Person Counting	47A5B4A9-9C2F-4a8b-9569-E30D2ABE4F4F
Person Crowding	DC4B67CB-E56B-485e-8859-21A33E58ECB7
Person Occupancy	8762970E-AF7B-4e90-AC22-B4E0C94AFA2F
Vehicle Counting	32B8C867-3AE2-4542-863B-7D960BD435C4
Vehicle Speed Analysis	69317FDF-3DA5-4744-BE63-C6FBF8A005C1

2.3 SensorToRule_SER

The SensorToRule_SER table allows extracting the rule list per sensor:

Column Name	Data Type	Description
SER_SensorId	int	Sensor ID
SER_SensorType	int	Internal sensor type. For statistics rule, make sure that you only refer to table entries for which this type equals to "1".
SER_RuleId	int	Rule ID

2.4 TreeChain_TRE

There are cases that you would like to extract some statistics data in the context of a savVi site. The mapping between site and sensors is implemented using TreeChain_TRE table. The relevant fields are as listed below:

Column Name	Data Type	Description
SensorId_TRE	Int	Sensor ID
SensorType_TRE	int	Internal sensor type. For statistics rule, make sure that you only refer to table entries for which this type equals to "1".
SiteId_TRE	int	Site ID

3 Examples

The examples below illustrate some common use cases.

3.1 Retrieving Statistics for Specific Person Counting Rule

The assumption in this example is that the Person Counting rule ID equals to '15'.

Use the following SQL query:

```
SELECT STA_RuleId, STA_Value, STA_Type, STA_StartTime, STA_EndTime
FROM StatisticsData_STA
WHERE STA_RuleId=15 AND STA_Type=0
```

This may generate a result as follows:

STA RuleId	STA Value	STA Type	STA StartTime	STA EndTime
15	7	0	2013-07-04 13:41:05	2013-07-04 13:46:05
15	12	0	2013-07-04 13:46:05	2013-07-04 13:51:29
15	9	0	2013-07-04 13:51:05	2013-07-04 13:56:29

3.2 Retrieving Statistics for Specific Speed Analysis Rule

The assumption in this example is that the Speed Analysis rule ID equals to '17'.

Use the following SQL query:

```
SELECT STA_RuleId, STA_Value, STA_Type, STA_StartTime, STA_EndTime
FROM StatisticsData_STA
WHERE STA_RuleId=17 AND STA_Type=2
```

This may generate a result as follows:

STA RuleId	STA Value	STA Type	STA StartTime	STA EndTime
17	25.2	2	2013-07-04 13:41:05	2013-07-04 13:46:05
17	20.1	2	2013-07-04 13:46:05	2013-07-04 13:51:29
17	34.67	2	2013-07-04 13:51:05	2013-07-04 13:56:29

3.3 Retrieving Person Counting Statistics for a Specific Sensor

The assumption in this example is that the sensor ID equals to '45'. Also, for this specific sensor there are 2 person counting rules configured.

Use the following SQL query:

```
SELECT SER_SensorId, STA_RuleId, STA_Value, STA_Type, STA_StartTime,
STA_EndTime
FROM StatisticsData_STA
INNER JOIN SensorToRule_SER ON SER_RuleId = STA_RuleId
INNER JOIN SensorRule_SRL ON SER_RuleId = SRL_Id
WHERE SER_SensorId=45 AND SER_SensorType=1 AND STA_Type=0
AND SRL_RuleGUID='47A5B4A9-9C2F-4a8b-9569-E30D2ABE4F4F'
```

This may generate a result as follows:

SER SensorId	STA RuleId	STA Value	STA Type	STA StartTime	STA EndTime
45	9	3	0	2014-01-08 13:05:28	2014-01-08 13:06:03
45	9	5	0	2014-01-08 13:06:07	2014-01-08 13:07:05
45	9	3	0	2014-01-08 13:07:17	2014-01-08 13:08:07
45	10	2	0	2014-01-08 13:05:28	2014-01-08 13:06:03
45	10	2	0	2014-01-08 13:06:07	2014-01-08 13:07:05
45	10	3	0	2014-01-08 13:07:17	2014-01-08 13:08:07

3.4 Retrieving Person Counting Statistics for a Specific Site

The assumption in this example is that the site ID equals to '11'.

Use the following SQL query:

```
SELECT  SER_SensorId,  SiteId_TRE,  STA_RuleId,  STA_Value,  STA_Type,
        STA_StartTime, STA_EndTime
FROM  StatisticsData_STA
INNER JOIN  SensorToRule_SER ON SER_RuleId = STA_RuleId
INNER JOIN  SensorRule_SRL ON SER_RuleId = SRL_Id
INNER JOIN  TreeChain_TRE ON SER_SensorId = SensorId_TRE
WHERE  SiteId_TRE=11 AND SER_SensorType=1 AND STA_Type=0
AND  SRL_RuleGUID= '47A5B4A9-9C2F-4a8b-9569-E30D2ABE4F4F '
```

This may generate a result as follows:

SER SensorId	SiteId TRE	STA RuleId	STA Value	STA Type	StartTime	EndTime
45	11	9	4	0	2014-01-08...	
45	11	9	5	0	2014-01-08...	
45	11	9	5	0	2014-01-08...	
45	11	9	5	0	2014-01-08...	
45	11	10	2	0	2014-01-08...	
45	11	10	2	0	2014-01-08...	
45	11	10	3	0	2014-01-08...	
45	11	10	3	0	2014-01-08...	



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