Beamline Alarm Info Display

(Visualisiation of Hasylabalarms with TINE Software)

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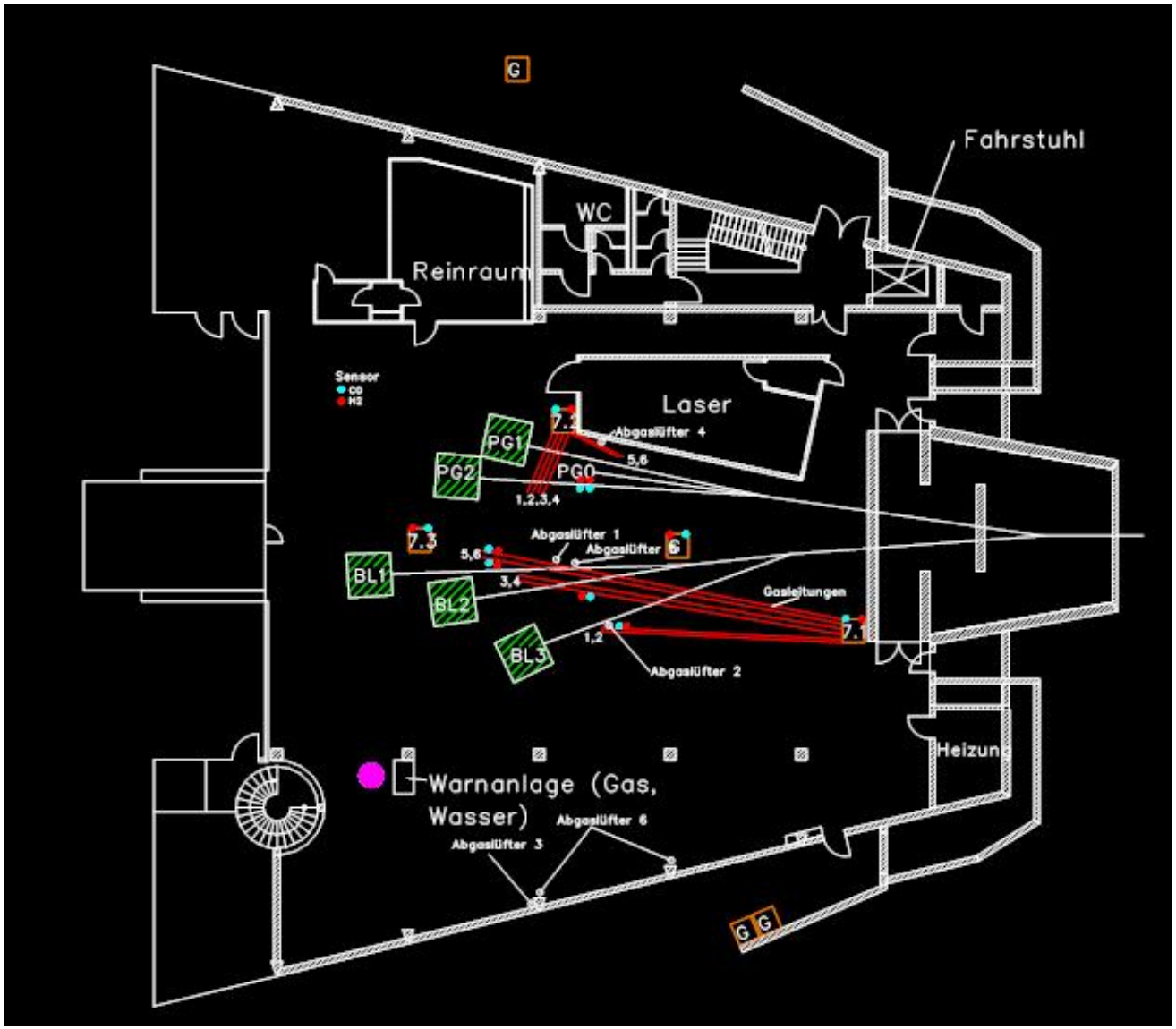
MCS-1

Flash Experiment Hall: Gas sensors



Motivation

- The following alarms are to be visualize (in sum ~ 100):

  - Gasalarms (CO, H_2, NO, H_2S) – 24
  - Wateralarms – 13
  - Firealarms – 15
  - Gaspumps - 6
  - Commonalarms (Airpumpbreaks, Airpumps of Chemiecalscases,…, etc) - 28
  - Urgent- Personnel Call
  - Urgent- Power Off

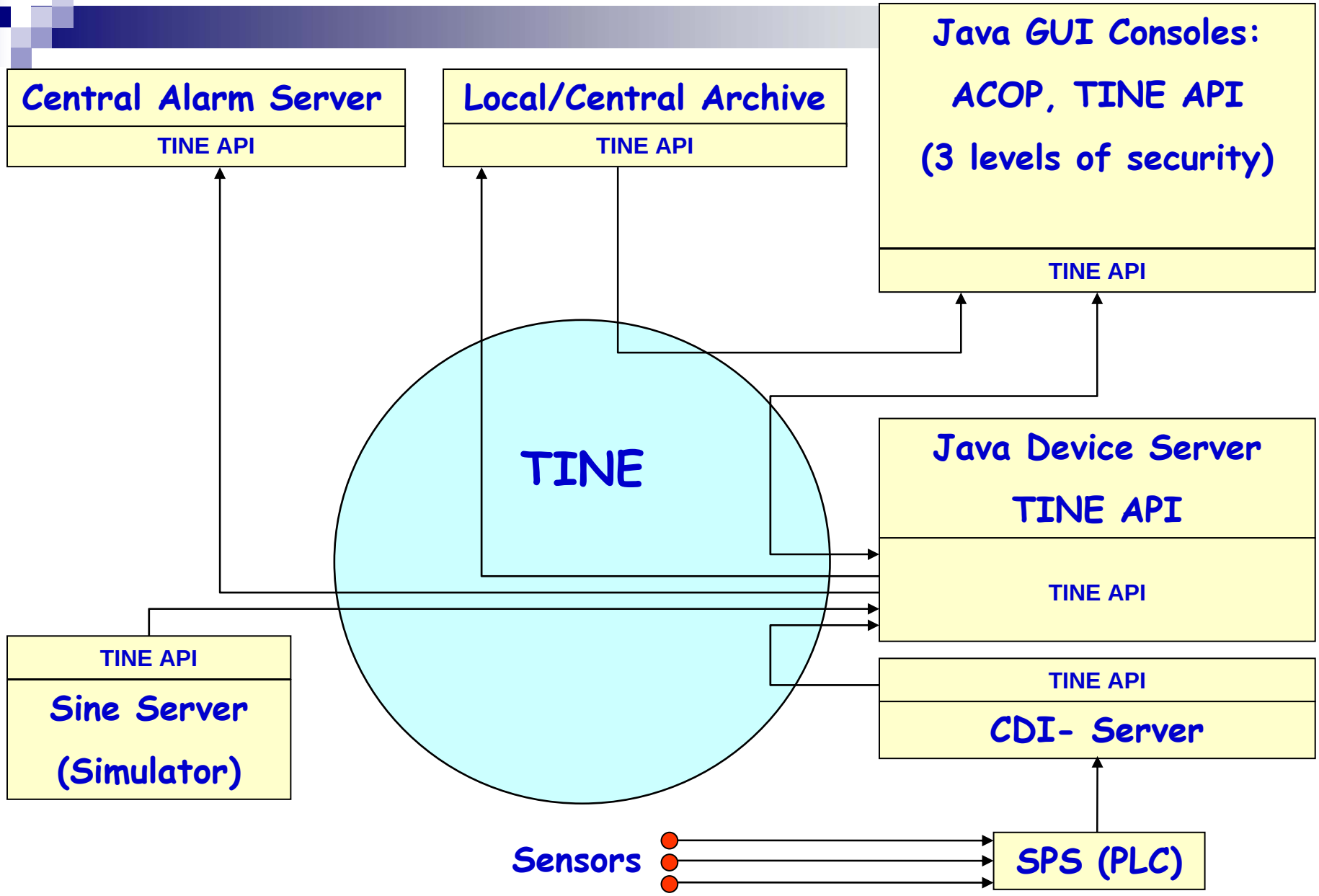
Security demands:

- 3 Security levels:

  - Common User (View-only mode): Needs no Password. The user can see all forms and accept Alarms.

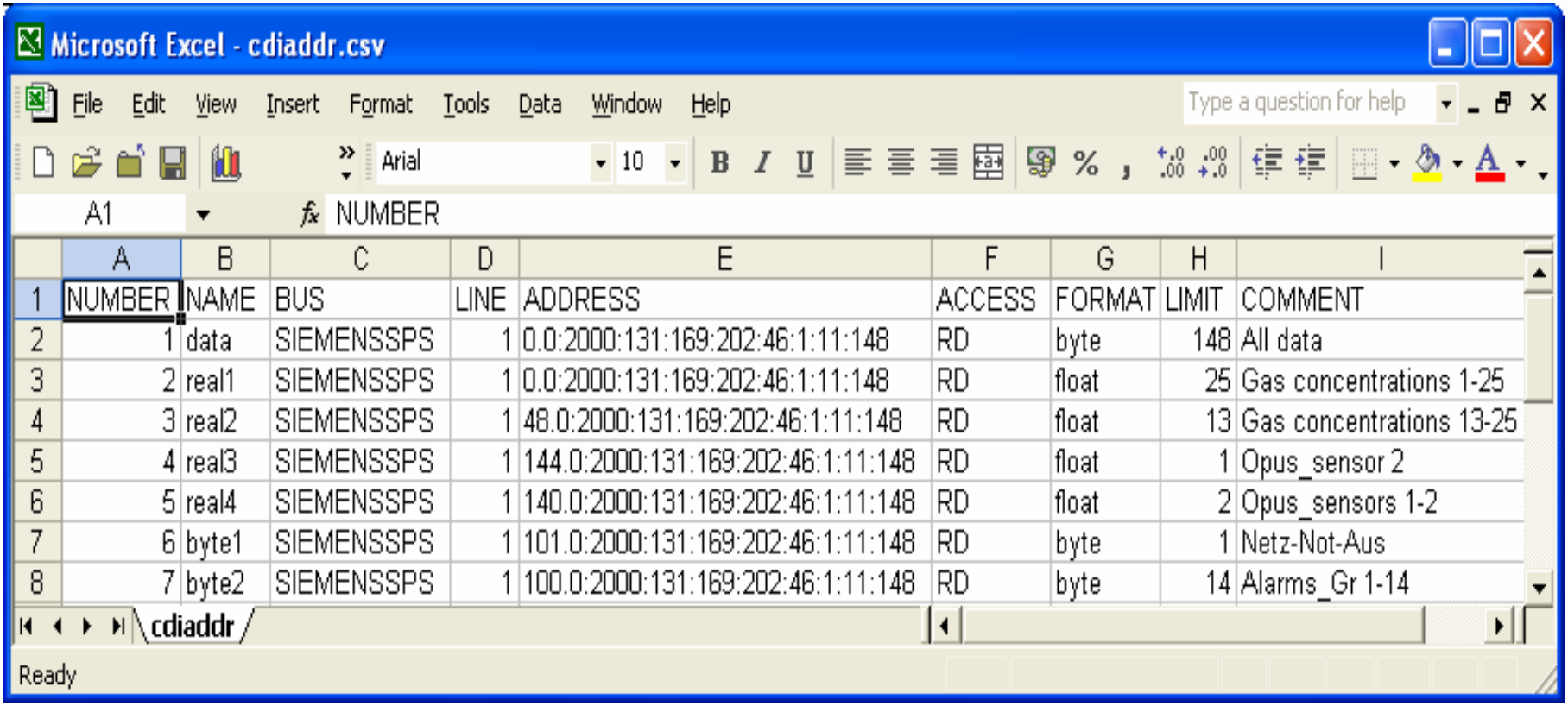
  - Shift Personnel & Technical Service (operating mode): received a Password. He can see all forms, accept Alarms and reset them, if the value of signal becomes below the Alarmlevel or if the reason of Alarm was removed.

  - Administrator (Expert mode): He has in addition the full access rights to the software, e.g. sensors positions and Alarmlevels can be changed and/or new sensors can be added/removed.



SPS (Speicherprogrammierbare Steuerung) = PLC (Programmable Logic Controller)

cdiaddr.csv



Microsoft Excel - cdiaddr.csv

File Edit View Insert Format Tools Data Window Help

Type a question for help

Arial 10

A1 NUMBER

	A	B	C	D	E	F	G	H	I
1	NUMBER	NAME	BUS	LINE	ADDRESS	ACCESS	FORMAT	LIMIT	COMMENT
2	1	data	SIEMENSSPS	1	0.0:2000:131:169:202:46:1:11:148	RD	byte	148	All data
3	2	real1	SIEMENSSPS	1	0.0:2000:131:169:202:46:1:11:148	RD	float	25	Gas concentrations 1-25
4	3	real2	SIEMENSSPS	1	48.0:2000:131:169:202:46:1:11:148	RD	float	13	Gas concentrations 13-25
5	4	real3	SIEMENSSPS	1	144.0:2000:131:169:202:46:1:11:148	RD	float	1	Opus_sensor 2
6	5	real4	SIEMENSSPS	1	140.0:2000:131:169:202:46:1:11:148	RD	float	2	Opus_sensors 1-2
7	6	byte1	SIEMENSSPS	1	101.0:2000:131:169:202:46:1:11:148	RD	byte	1	Netz-Not-Aus
8	7	byte2	SIEMENSSPS	1	100.0:2000:131:169:202:46:1:11:148	RD	byte	14	Alarms_Gr 1-14

cdiaddr

Ready

TINE Device Server (Java)

- Created with using the Deviceserver Wizard
- There is no need in GUI in this case (TINE API to communicate with the Client and CDI Server)
- Reads all initial data (Alarmlevels, sensors coordinates,…) from an ini-file
- Reads data from SPS via CDI-Interface (at the moment data are simulated by a Sine Server)
- Local Archiving & Central Alarm Service
- Generates Alarms for the Client Programs

Exported Properties (27)

File Edit View Insert Format Tools Table Window Help

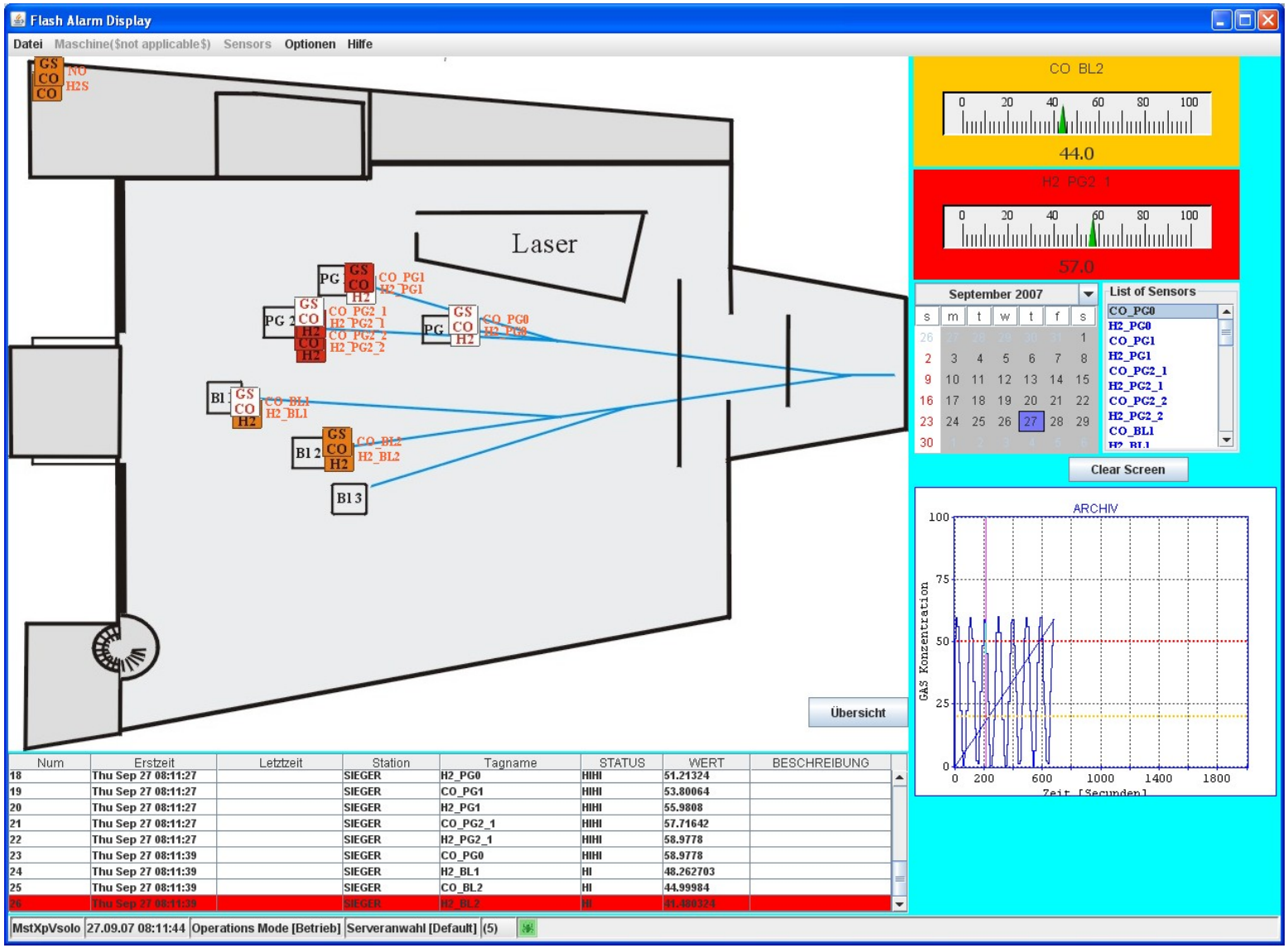
Name	Data Type	Size	Read/Write	Remarks
GasConcentr	float	24	Read	Gas concentrations
VorLevels	float	24	Read	VorAlarms levels
HauptLevels	float	24	Read	HauptAlarms Levels
SetVorlevel	float	2	Write	1 – AlarmNb, 2 - Level
SetHauptLevel	float	2	Write	1 – AlarmNb, 2 - Level
AlarmsGr	int	172	Read	Alarms (Graphic): 0 – no change 1 – begin of VorAlarm 2 – begin of HauptAlarm 3 – Vor => Haupt 4 – Haupt => Vor 5 – End of alarm
AlarmsBm	int	172	Read	Alarms (Betriebsmeldung)
AlarmNames	NAME32	86	Read	Names of alarms
CurAlarmsList	int	172	Read	2*86: 1 – Current severity, 2 – Timestamp (begin) Current severity: 0 – OK 1 – VorAlarm 2 – HauptAlarm
SetBadSensors	int	2	Write	Exclude sensor: 1 – SensorNb 2 – 1 to exclude, 0 - OK
AllData	byte	148	Read	Data from SPS (CDI)
ReadSensorPos	int	2	Read	Read sensor position: 0 – Group number 1 – Button Nb in the group
SetSensorPos	int	2	Write	Set sensor position: 0 – Group number 1 – Button Nb in the group
ReadSensorX	int	12	Read	X-Coordinates of sensors
ReadSensorY	int	12	Read	Y-Coordinates of sensors
GetControlled	int	86	Read	1, if the sensor is controlled 0, otherwise
SetControlled	int	86	Write	Set sensors to be controlled
GasNames	NAME32	24	Read	Names of gas sensors
WasserNames	NAME32	16	Read	Names of wasser sensors
GasX	int	24	Read	X-Coordinates of gas sensors
GasY	Int	24	Read	Y-Coordinates of gas sensors
WasserX	int	16	Read	X-Coordinates of wasser sensors
WasserY	int	16	Read	Y-Coordinates of wasser sensors

Page 1 Sec 1 1/3 At 4 cm Ln 7 Col 8 REC TRK EXT OVR English (U.S

Java GUI Client

- Uses TINE API to receive data from Device Server and from the local/central archive
- Uses ACOP for graphical representation of:
  - Active alarms (blinking and/or coloring labels)
  - Accepted alarms
  - Table of active alarms
  - Current gas concentration for a given gas alarm
  - History data for a given gas for a given time period
- In operating/expert mode enables to accept or reset alarms
- In expert mode enables to change:
  - Alarmlevels
  - Coordinates of sensors

Alarm Info: Overview Display



Resume

• This project uses many of powerful possibilities which TINE gives and about which many of you have spoken during these 2 days.

• Based on TINE, the project allows to hope, that it can be used for other alarm/info systems without significant changes.

- Thank you for attention-