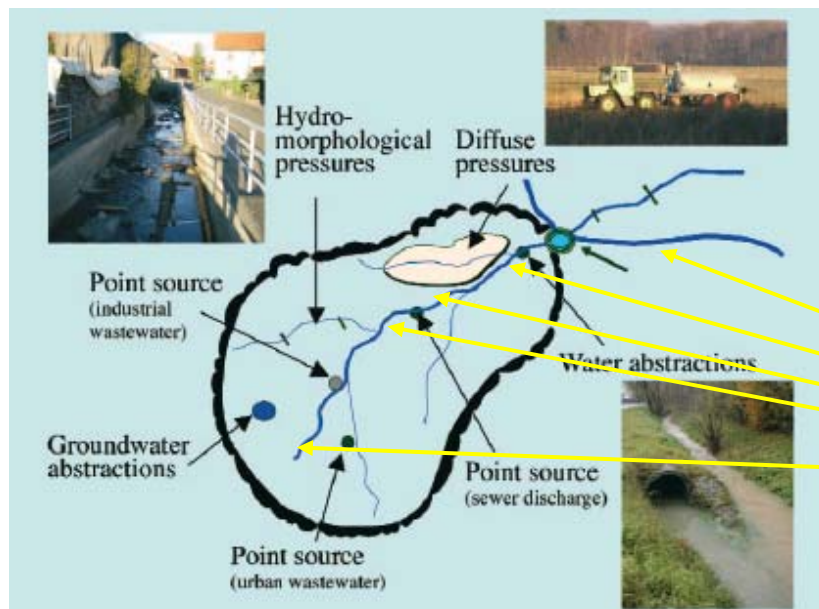


**Training on**  
**Automated Monitoring Stations and Networks**  
**in Surface Waters**  
**(for Environmental Survey and Pollution Control)**  
Part III - Equipment and maintenance in monitoring stations



# Where to put an automated monitoring station?

- The results of the analysis will be used in targeting the monitoring programs, so that they provide suitable information or validating the analyses and assessing the effectiveness of the programs of measures



The Report for Activity 2.1.3 describes the „**General aspects of the location and tasks of automated surface water measuring stations**”

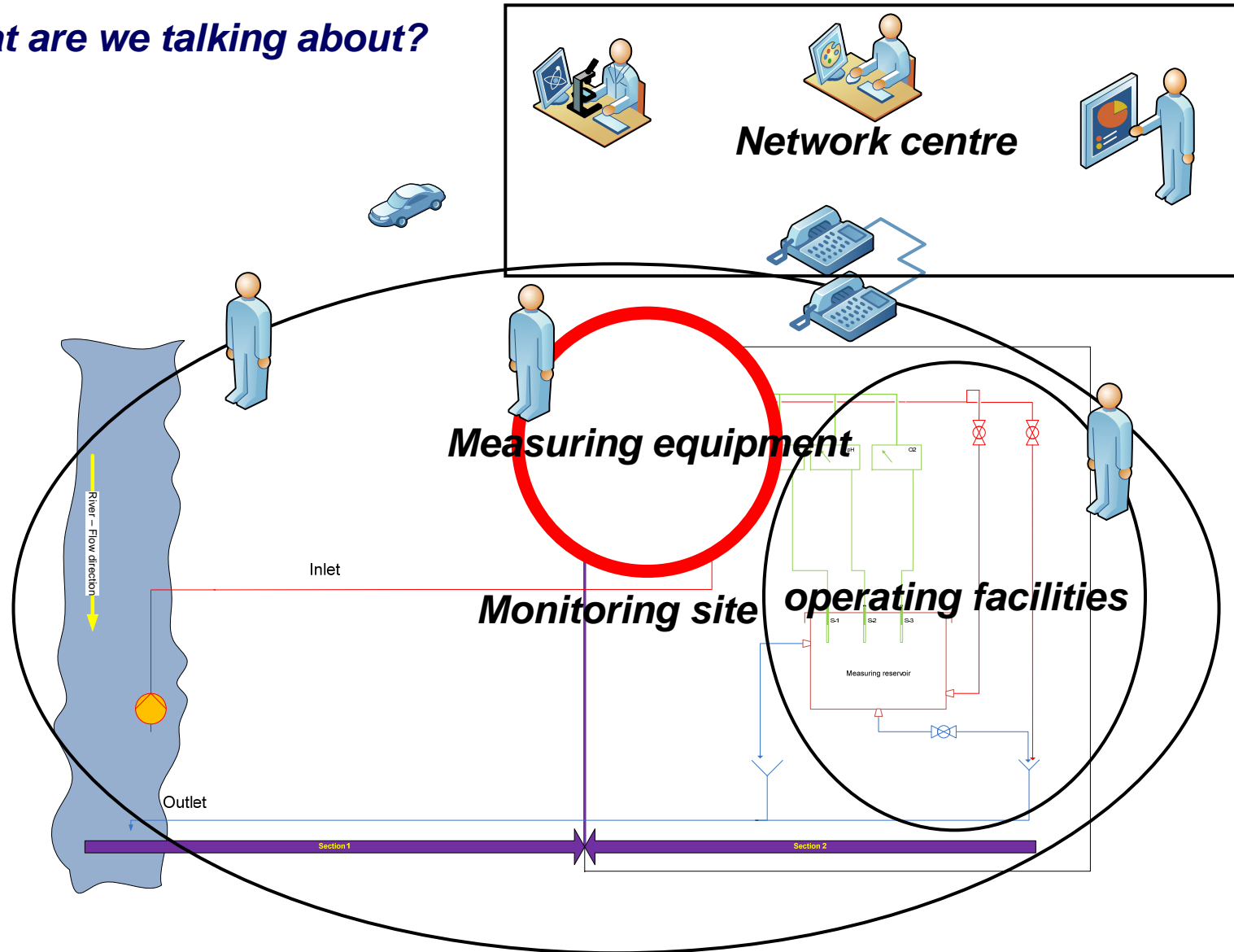
- Possible/suitable locations
- Tasks of measuring programs





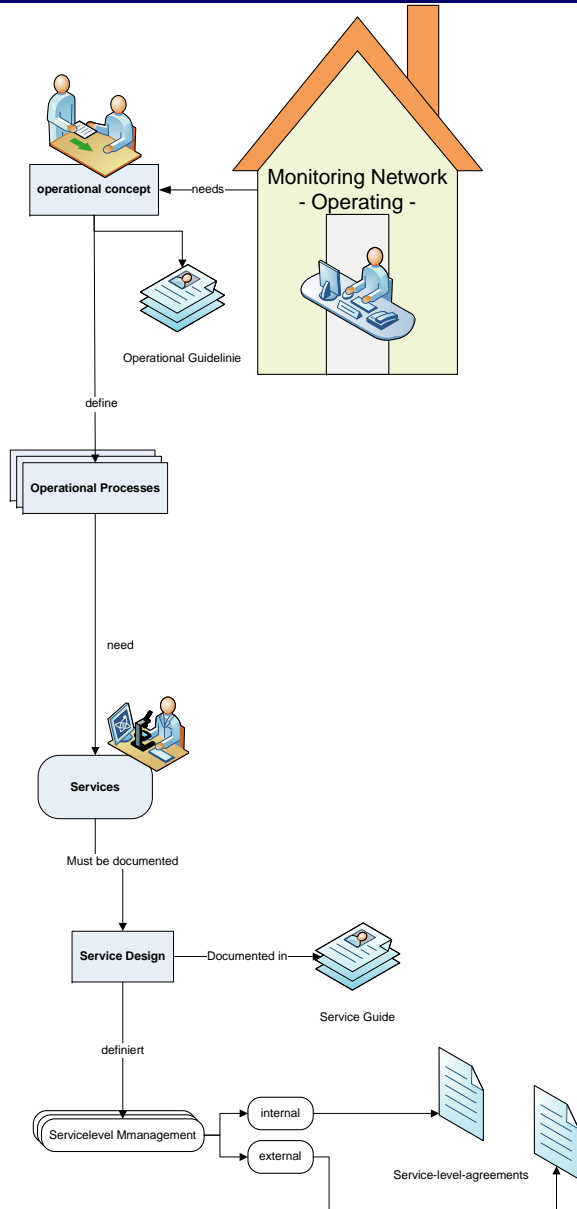
# Monitoring Programme Automated Monitoring Station

*What are we talking about?*





# Part III organizing maintenance



- **Operational Concept**  
-> *Operational Processes and Guidline*
- **Service Concept**  
-> *Service Management and Guideline*



## Part III

# organizing maintenance

### ***What is necessary on Service / Maintenance?***

#### ***Care of the Systems***

- *Cleaning*
- *Function check – mechanical wear – operational supplements*
- *Calibration – adjusting - setting*
- *Care for the operating ability up to the next maintenance is care for life time of the systems*

#### ***Quality assurance***

- *Operating ability of all measuring systems*
- *Safeguarding the data communication*

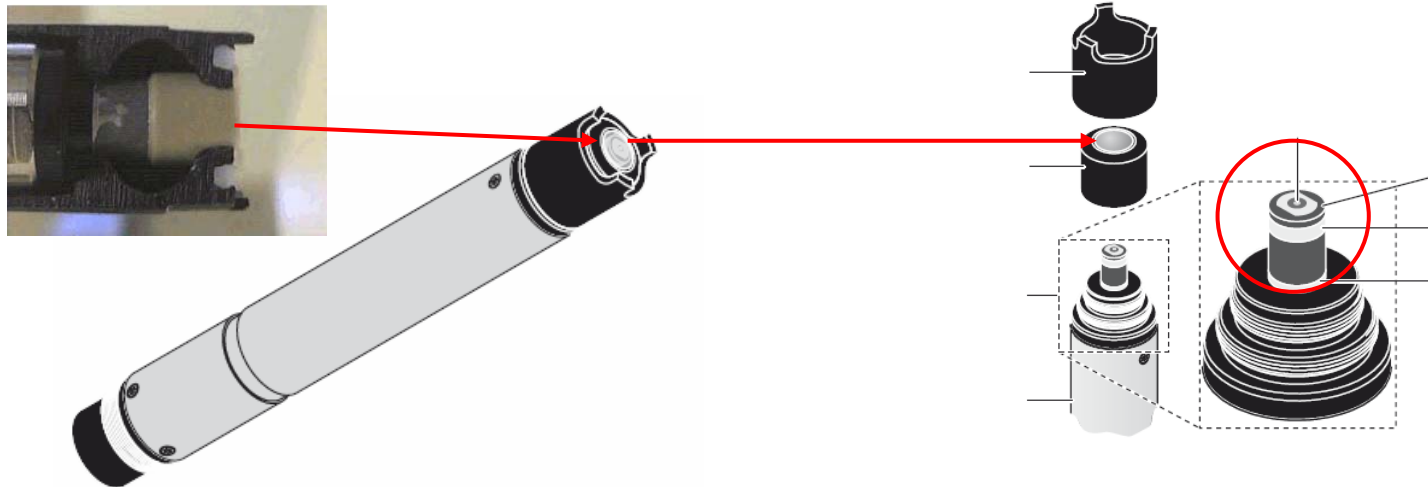


## Part III organizing maintenance

### ***What is necessary on Service?***

#### ***Care of the Systems:***

- *The traditional sensors (e.g. for dissolved oxygen) are based on polarographic measuring cells. Characteristical for these type of sensors is the usage of electrolyt and corrosion of electrodes during operation. From both results a zero drift of the measuring signal. Only regulary cleaning and calibration or adjusting assures the correctness of the measurements.*
- *It is a main duty for the operational personal to care for the operating ability from maintenance to maintenance all time.*





# Part III organizing maintenance

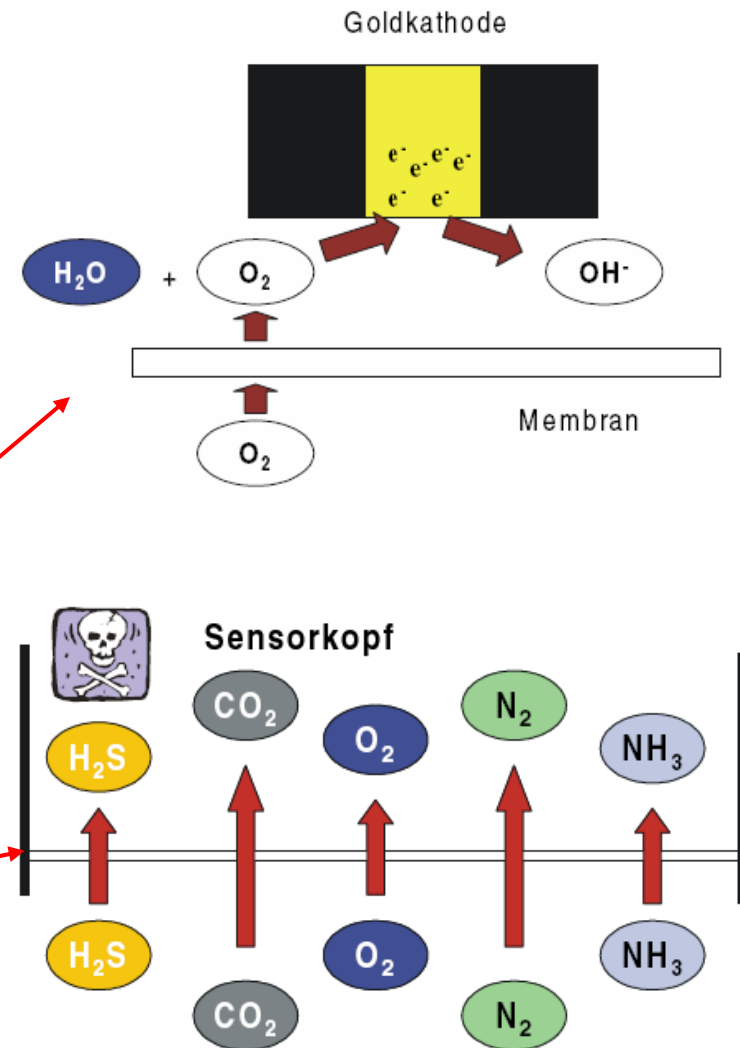
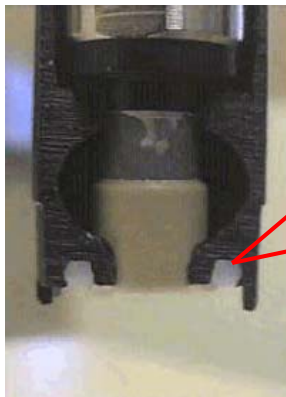
## What is necessary on service / maintenance?

### Care of the Systems:

The traditional sensors are also vulnerable for different effects. It is another duty for the operational personal to protect the sensors against these effects (see example).

Remaining dirt on the surface of the sensors are the most important source of malfunction. Caused by this, cleaning and a documented check measurement is most important during regular maintenance.

More complex measuring systems need additional fill up of consumables and replacement of consumable spare parts.





## Part III Close to the end!

**Training on  
Automated Monitoring Stations and Networks  
in Surface Waters  
for Environmental Survey and Pollution Control**

**Missing anything?**

**Oh yes:**

**Is automated monitoring  
affordable and profitable?**



# Part I to III

## Conclusion

### Conclusion:

- The rationale behind automated surface water measuring stations
- Integrated River Basin Management
- Water Framework Directive and other International Regulations
- Pressures and impacts analysis for surface water bodies – the DSPIR principle
- The principal aim of Automated monitoring stations
- The best location for an automated monitoring station
- Parts of monitoring sites – measuring equipment, operating facilities, network centres
- Phased concept for equipment of measuring stations (project EASE)
- Company Concept: Quality Concept, Operational Concept and Service Concept
- Management Methods, Six Sigma and Circle of D – M – A – I – C
- Organizing maintenance

***O.K. that's it for today! Thank you for you attention!***