

# **LINKING INSPECTION DATA TO GIS: WHAT IS THE EXPERIENCE ?**

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CEPMA**

## **CONTENTS:**

**INTRODUCTION TO THE CEPS**

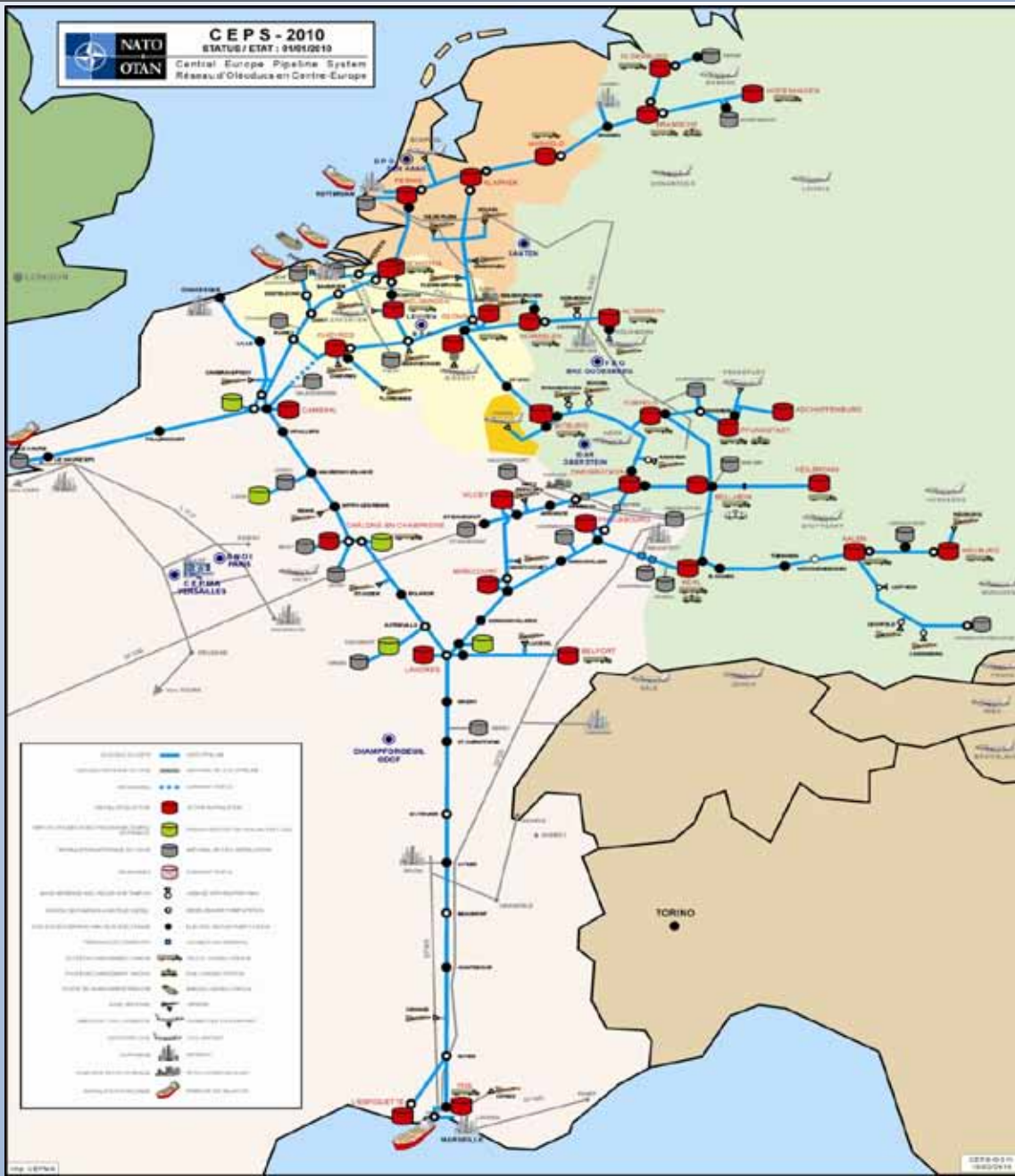
**HISTORIC REVIEW**

**SUPPORTING IT PLATFORM AND  
COMMUNICATION LINKS**

**EXAMPLES OF LINKING INSPECTION DATA TO  
GEOGRAPHIC INFORMATION**

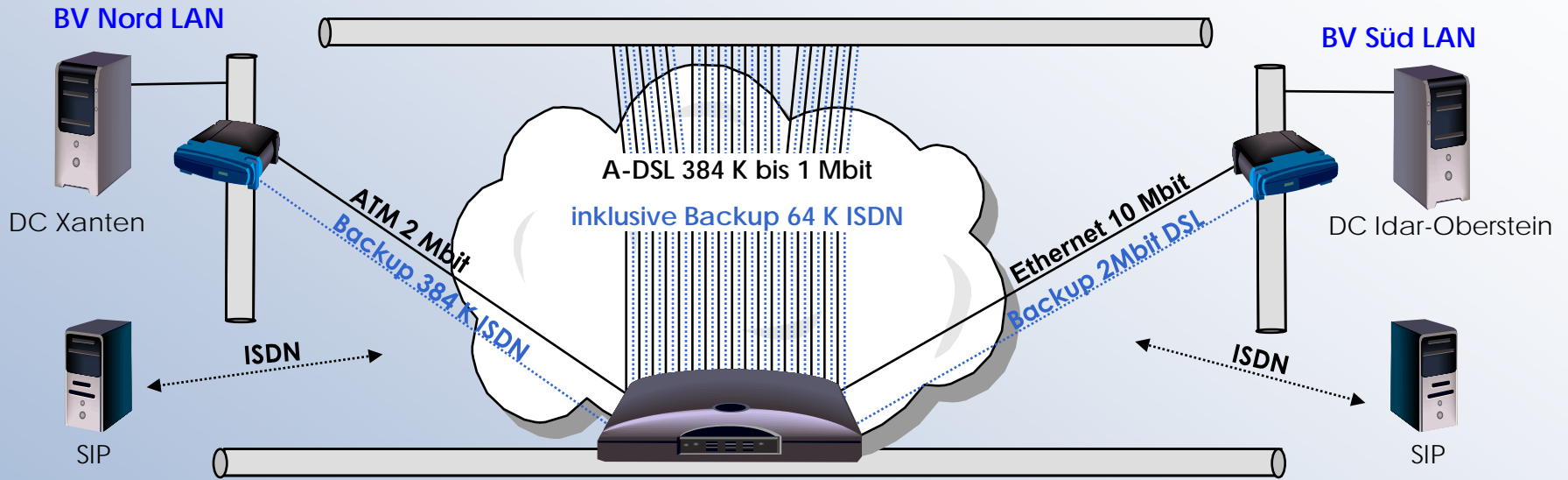
**SUMMARY OF EXPERIENCE**

## CENTRAL EUROPE PIPELINE SYSTEM



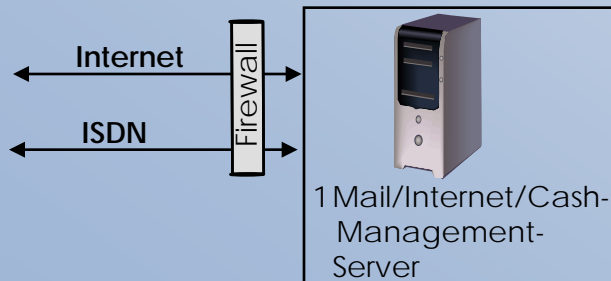
# IT - Infrastruktur

17 Tanklagerstandorte



Hauptverwaltung (34 MBit Hauptknoten)

Zentrale Serverfarm FBG



- VM-Ware
- 1 Test/ Failover Server
- 3 VM Anwendungsserver
- OCS/CC48-Ersatz/ GIS/Divpas

- 1 DC Bonn
- 4 Applikationsserver Windows
- 1 Print Server



SAN  
Datenspeicher

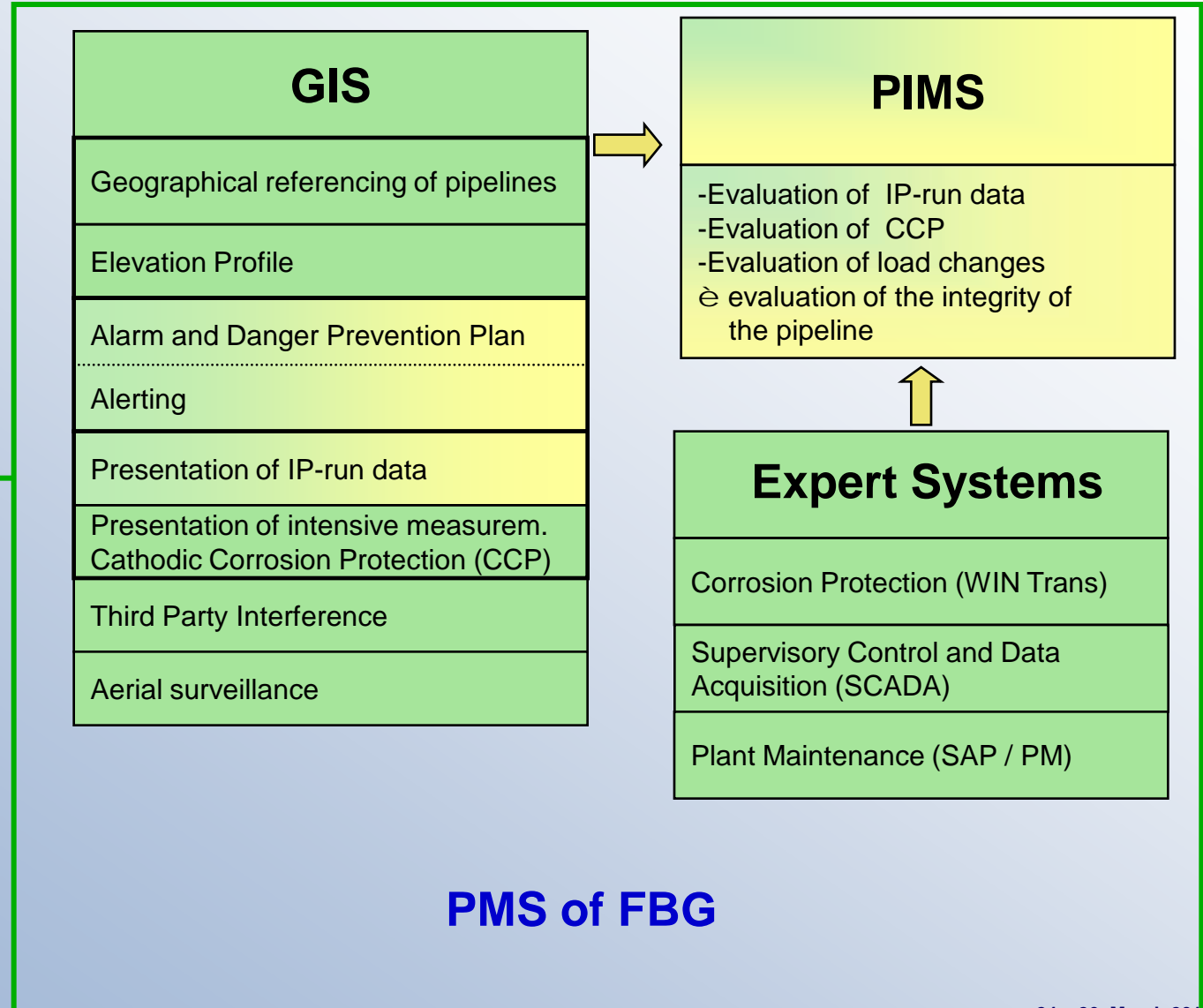
- DB Oracle
- DB GIS
- File Content



1 Backup/Restore  
(Server vorhanden)

# STRUCTURE UMS AT FBG

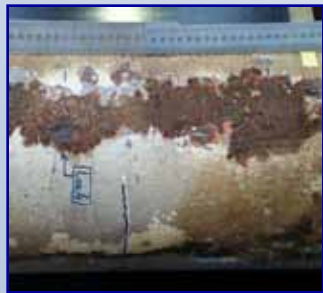
Obligation formulated in Pipeline Regulation („RFV



GIS Geo Informations System  
PIMS Pipeline Integrity Management System  
UMS Unternehmens Management System

**PMS of FBG**

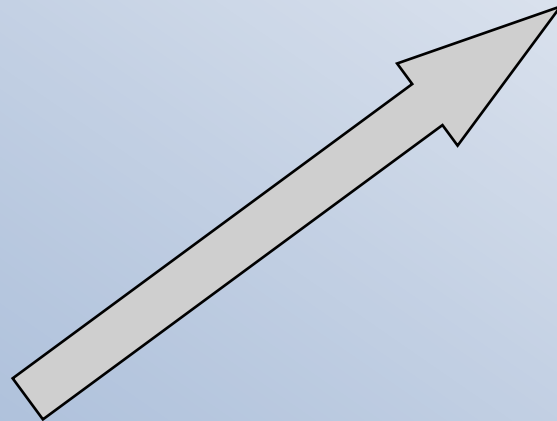
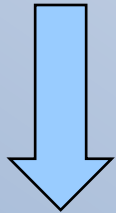
# ALERTING & ALARM AND DANGER PREVENTION PLAN



DAMAGE



BEGINNING OF THE  
FIGHTING  
MEASURES



FAST ROUTE TO THE  
ACCIDENT SITE VIA PDA  
NAVIGATION AND  
**GERMANY PLUS** CARD  
SHOWING SMALL  
TRACKS



CO-ORDINATION  
OF ACTIONS IN  
THE CONTROL  
CENTRE



# ALARM AND DANGER PREVENTION PLAN

Standard Filter

Suche auswählen OK Regler: OK Antragsnr.: OK

Dokumente zum Vorgang 2009\_00077 generieren

Anschreiben erstellen

Empfangsbestätigung generieren

2 Dokumente gefunden, alle Dokumente anzeigen 1

| Regler     | Alt./Leck   | Typ | Schreiben  | Antragsteller                          | Status               | Postfach | PL, KM | PL, KM, Die | NFS |
|------------|-------------|-----|------------|--|----------------------|----------|--------|-------------|-----|
| 2009_00077 | 73a9a73309  | 0   | 11.09.2009 | Heuber                                 | Tanklager Hohenstein | ---      | 10,0   |             |     |
| 2009_00078 | 73a94773a08 | 0   | 10.09.2009 | Gemeinde<br>Coblenz-Aepeln             |                      |          |        |             |     |
| 2009_00079 | 73a94e11269 | 0   | 23.08.2009 | Helmkamp Strömberg                     |                      |          |        |             |     |
| 2009_00072 | 73021375a03 | 0   | 23.08.2009 | OLL Wessau                             | Pumpstation Ergelen  | 7-02     | 97,970 | 92,890      |     |
| 2009_00073 | 6933150a09  | 0   | 22.08.2009 | Netzecon GmbH                          | Tanklager Höhe       | 0-02     | 74,700 |             |     |
| 2009_00071 | 73a94847026 | 0   | 22.08.2009 | Galman<br>Brauereibau<br>GmbH & Co. KG |                      |          |        |             |     |
| 2009_00070 | 73a9406a09  | 0   | 22.08.2009 | Galman<br>Brauereibau<br>GmbH & Co. KG |                      |          |        |             |     |
| 2009_00069 | 73a9405a04  | 0   | 22.08.2009 | STRADAM AG<br>Brauereibau              |                      |          |        |             |     |
| 2009_00068 | 73a9400408  | 0   | 22.08.2009 | STRADAM AG<br>Brauereibau              |                      |          |        |             |     |
| 2009_00067 | 73a9403a09  | 0   | 22.08.2009 | Blattfort Tief u.<br>Brauereibau       |                      |          |        |             |     |
| 2009_00066 | 73a9402a08  | 0   | 19.08.2009 | Willy Dohmen GmbH<br>& Co. KG          |                      |          |        |             |     |
| 2009_00065 | 73a9401a09  | 0   | 18.08.2009 | Planungsstelle<br>Landbach             |                      |          |        |             |     |
| 2009_00064 | 73a9400a08  | 0   | 18.08.2009 | Gilge Consult GmbH                     |                      |          |        |             |     |
| 2009_00063 | 73a9400a09  | 0   | 18.08.2009 | Gilge Consult GmbH                     |                      |          |        |             |     |
| 2009_00062 | 6023195a09  | 0   | 09.08.2009 | Müller und Mithras                     | Tanklager Höhe       | 0-02     | 80,7   | 71,2        |     |

## E.5.1 Ölsperrenmerkblätter Pipeline Kehl - Tübingen, (6-39) 10''

Ölsperre Nr. 6-39-3a, zu Pipeline-km 0-300 - 0-800

### Gewässername und Verlauf:

Der Rinnbach und ein Seitenarm kreuzen bei PL-km 0+500 und 0+335. (Parallelverlauf von km 0+500 bis 0+700). Der Rinnbach mündet bei Linx in den Mühlabach, der eine Verbindung zum Gieselbach hat.

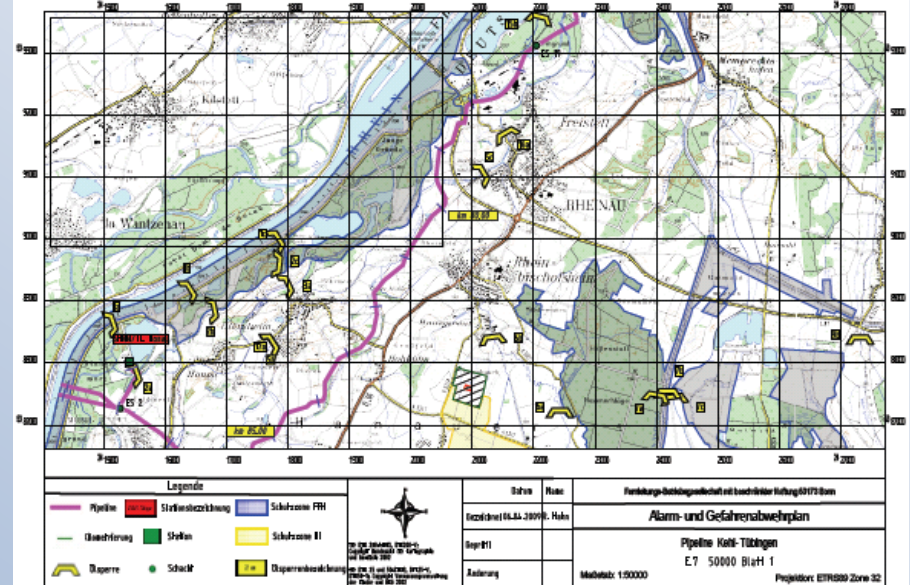
### Bemerkungen:

Sperrenstandort für Pipeline – Nr. 6-39, 6-43 und 6-86

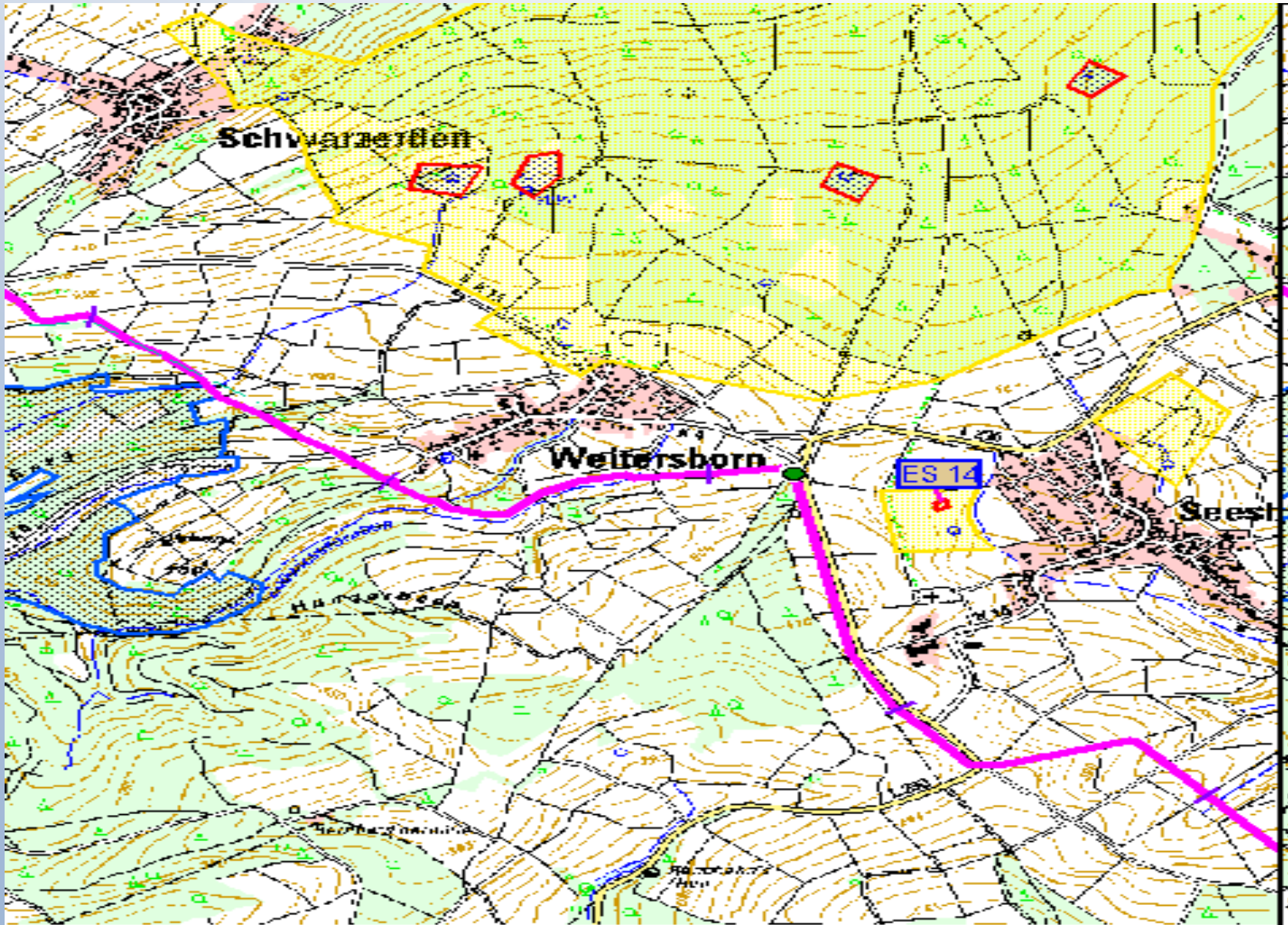
| a) Gieselbach                | Stand:  |
|------------------------------|---|
| Sperrentyp                   | Schwimmsperre   |
| Gaus-Krüger Koord. RW/HHW    | 3418128/5350996   |
| UTM-Koordinaten RW/HHW       | 418089/5350277 Zone 32 Nord   |
| Blatt-Nr.                    | 1 von 9   |
| Anfahrt zum Sperrentyp:      | In Diersheim die Rheinwaldstraße in Richtung Rheinklösswerk, ca. 200m nach der Ortsausfahrt, links von der Brücke |
| Gewässerbreite [m]           | 4,00  |
| Gewässertiefe [m]            | über 1,00   |
| Fließgeschwindigkeit [km/h]  | 2,00  |
| Lagerung von Sperrenmaterial | FF Rheinau-Freistett / FF Rheinau-Diersheim   |
| Einbau der Sperre durch:     | FF Rheinau-Freistett / FF Rheinau-Diersheim   |
| Schadensanhänger von:        | FF Rheinau-Freistett  |
| Lage-skizze                  | Foto  |



## E.7 Karten (1:50000)

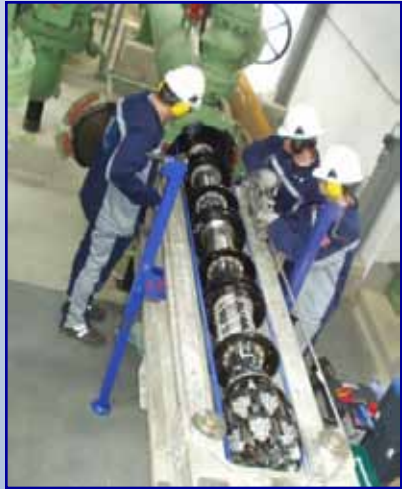


# IMPORT OF INFORMATION





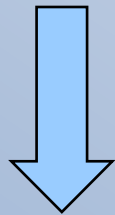
# IP-RUNS



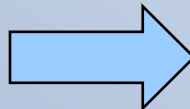
**INSTR. PIG RUN**



**LOCALIZATION OF  
POTENTIAL DEFECTS  
ON GIS CO-ORDINATES  
AND  
EXPOSURE OF THE LINE**



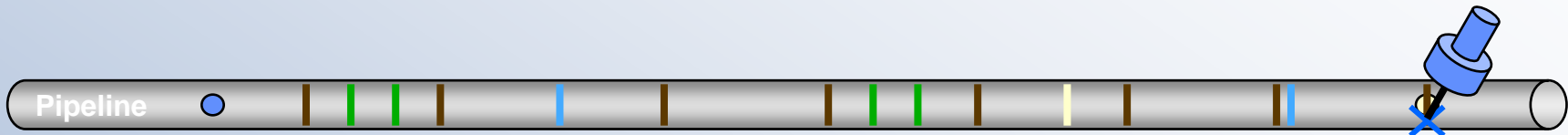
**IMPORT OF  
IP-RUN DATA  
INTO GIS**



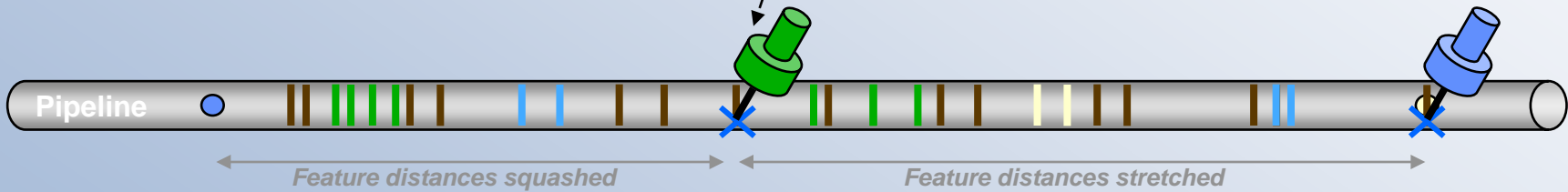
**ADJUSTMENT OF THE PIG  
RUN FEATURES IN GIS  
AND  
PRESENTATION OF  
FEATURES WITH  
SELECTION OPTIONS**



## Instrumented Pig-runs: adjustment



### Refine the adjustment:



- Start of pig run
- End of pig run
- | Feature position
- × Known point

# COPEX 2010

## IP-RUNS

FBG SWAF

Datei Bearbeiten Ansicht Hilfslinienzug Werkzeuge Fenster Hilfe FBG

1:1783 1:2000 DeGK3(cm) Tabulatoren

Objektklassen Editor

• [Geoil] ILI Feature

| Feldname                   | Wert                             | Δ | * |
|----------------------------|----------------------------------|---|---|
| Molchlaufdaten             | Inspektionsbericht PL Heide-     |   | * |
| <i>fx</i> Molchlauf        | Inspektionsbericht PL Heide-H... |   | • |
| <i>fx</i> Bezeichnung      | 3987.8 / Marker                  |   | • |
| Vorheriges Feature         | 3987.2 / Rundnaht                |   |   |
| Nächstes Feature           | 3988.8 / Materialverlust         |   |   |
| <i>α</i> Schweißnaht Nr.   |                                  |   |   |
| Typ                        | Marker                           |   | * |
| Subtyp                     | Marker                           |   | * |
| Substylecode               | 1                                |   | * |
| <i>α</i> Bemerkung Feat... | Marker Nr. 65                    |   |   |
| <i>α</i> Absolute Distanz  | 3987.84                          |   | * |
| <i>α</i> Relative Distanz  |                                  |   |   |
| <i>α</i> Darstellen?       | Ja                               |   | * |
| <i>α</i> Bemerkung         |                                  |   |   |
| Justage Segment            |                                  |   |   |
| Objekt-Info                |                                  |   |   |
| Geometrie                  |                                  |   |   |
| Featureattribute           |                                  |   |   |

Gis Entwurfs-Style Text eingeben Oben Links Standardorientierung Gis

20.038 m 87° 40' 38.6" 3,509,226.642 6,004,222.513 20.038 m Hilfslinienfläche

Zum Hinzufügen eines Hilfspunktes klicken oder ziehen | ILI Feature| 522062 unset 3.988e+003 unset Marker Marker Nr. 65 unset unset | Zentrum: 3,509,211.600, 6,004,234.877 m

Start 2 Microsoft Offic... Emacs-21.1@PMS 3 sw\_magik\_wi... PMS

# CATHODIC PROTECTION

## ACCESS TO INSPECTION DATA VIA DIAGRAM OR MAP RELATION TO OTHER DATA

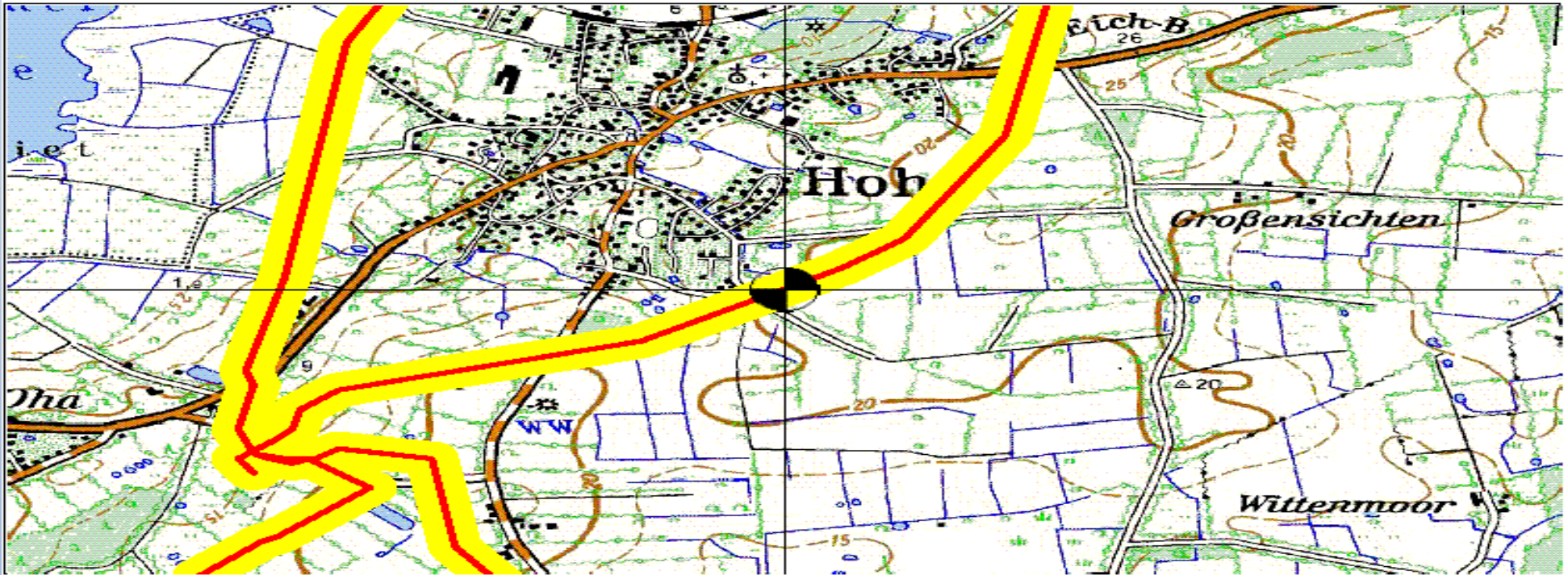
The screenshot displays the GeoCP software interface, which is used for managing cathodic protection data. It is divided into several main sections:

- Map View (Top Right):** Shows a site plan with various structures and measurement points. A red line indicates a measurement path, and a red box highlights a specific measurement point. The text "km 50.50" is visible on the map.
- Diagram View (Bottom Left):** Shows a graph of potential (mV) versus distance (m). The y-axis ranges from 200 mV to -1800 mV. Three data series are plotted: a yellow line (top), a red line (middle), and a blue line (bottom). The x-axis shows a distance of 1235.00 m.
- Measurement List (Bottom Right):** A table listing various measurement parameters and their values.
 

| CP Intensivmesswert   | Wert                         |
|-----------------------|------------------------------|
| Inspektion            | Nachmessung 2007_2           |
| Intensivm...          | GM Test - Nachmessung 2007_2 |
| Inspektionsdatum      |                              |
| Distenz               | 10.00                        |
| oden-Pote...          | -1.830 V                     |
| oden-Pote...          | -1.160 V                     |
| frei)                 |                              |
| (ein) links           | -8.000 mV                    |
| (aus) links           | -11.000 mV                   |
| potential...          | 3.000 mV                     |
| (ein) rec...          |                              |
| Potential (aus) re... |                              |
| Differenzpotential... |                              |
| Potential (DC)        |                              |
| Beschreibung          |                              |
| Kommentare            |                              |
| Position              | ✓                            |
| Kennzeichen           |                              |
| Position (aus Ver...  | ✓                            |
| Breite                | 51.54                        |
| Länge                 | 13.68                        |
| Höhe                  |                              |
| Vorheriger Intensi... | 5.000                        |
| Nächster Intensi...   | 15.00                        |
| Justageempfehlung     |                              |
- Control Panels (Top Left and Middle Left):** Contain settings for inspection selection, measurement series, and display options (e.g., "Messerle: Diagramm", "Stat. abs. Distanz [m]: 0.00", "Ende abs. Distanz [m]: 1235.00").

## AERIAL SURVEY

Beobachtung  
Grabung - 11:25:32



GK 3.533.172 6.018.560, UTMREF 32UNF 33161615

Beschreibung

|          |                       |             |                     |           |                |
|----------|-----------------------|-------------|---------------------|-----------|----------------|
| Lat/Lon: | 54°17.53 N 09°30.57 E | GK:         | 3.533.172 6.018.560 | UTMREF:   | 32UNF 33161615 |
| Trasse:  |                       | Kilometer:  |                     |           |                |
| Datum:   | 22.06.04 11:25        | Beobachter: | JDammes             | Geändert: | JDammes        |
| Landung: | Nein                  | Telefonat:  | Nein                | Wdh:      | Neu            |

Bemerkung:  
Grabung, Leitung freigelegt

**EXPERIENCE - ADVANTAGES:**

**INTEGRATED SYSTEM FOR DATA STORAGE:  
AVAILABILITY AND TRANSPARENCY OF INFORMATION.**

**SHARING OF INFORMATION WITHIN THE  
ORGANISATION: ENHANCES EFFICIENCY.**

**PROVIDES PROCEDURES FOR VALIDATION OF NEW  
OR REVISED DATA:  
ATTRIBUTES TO INFORMATION MANAGEMENT.**

**FACILITATES COMMUNICATION,  
INCLUDING DISTRIBUTION OF INFORMATION.**