DEVELOPMENT OF A PORTABLE REMOTE MONITORING SYSTEM FOR THIRD-PARTY DAMAGE

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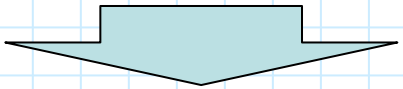
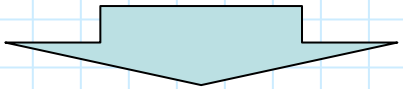
Course of the development

[Present measures for third party-work]

- Coordination with third party contractors
- Patrol inspections to work sites
- PR etc.

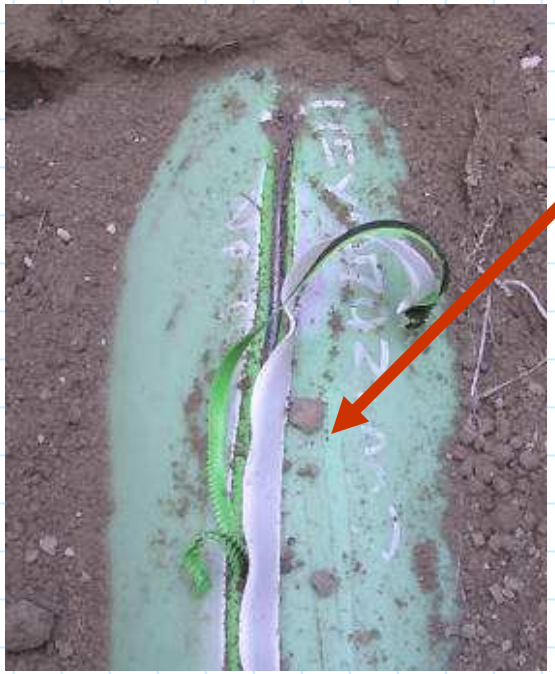


Non-physical measures



Further support by physical measures
= Development of the new system

Development guidelines



Scratching or peeling of the coating

↓

No gas leak

↓

NOT NOTICE!

↓

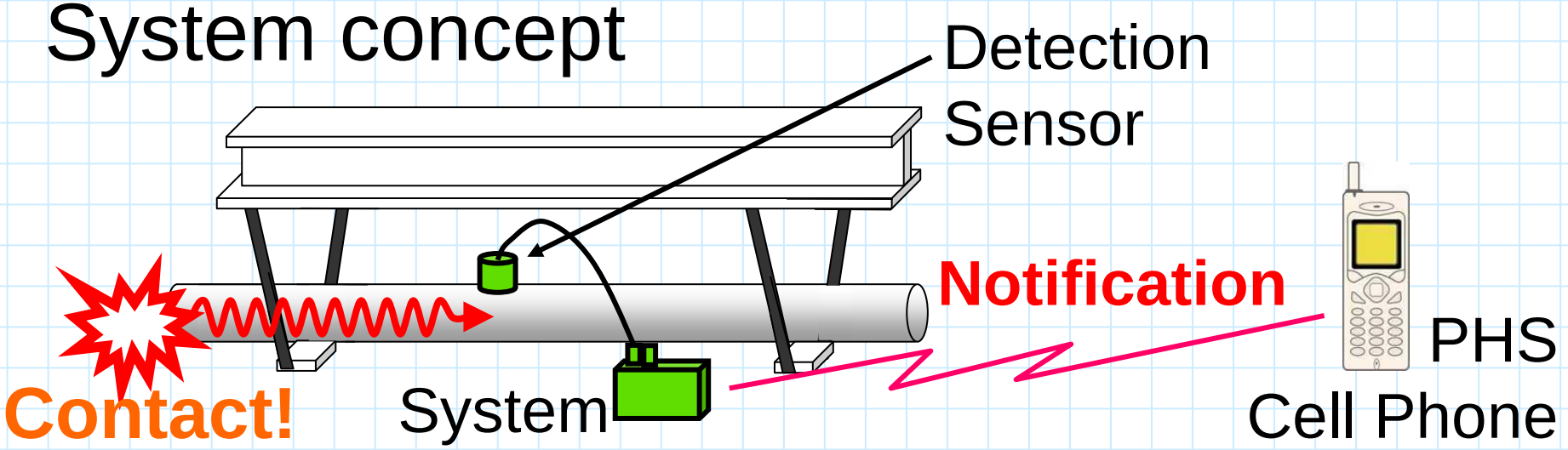
Discover scratches and peelings of the coating.

↓

The Acoustical Detection System

Development history

System concept

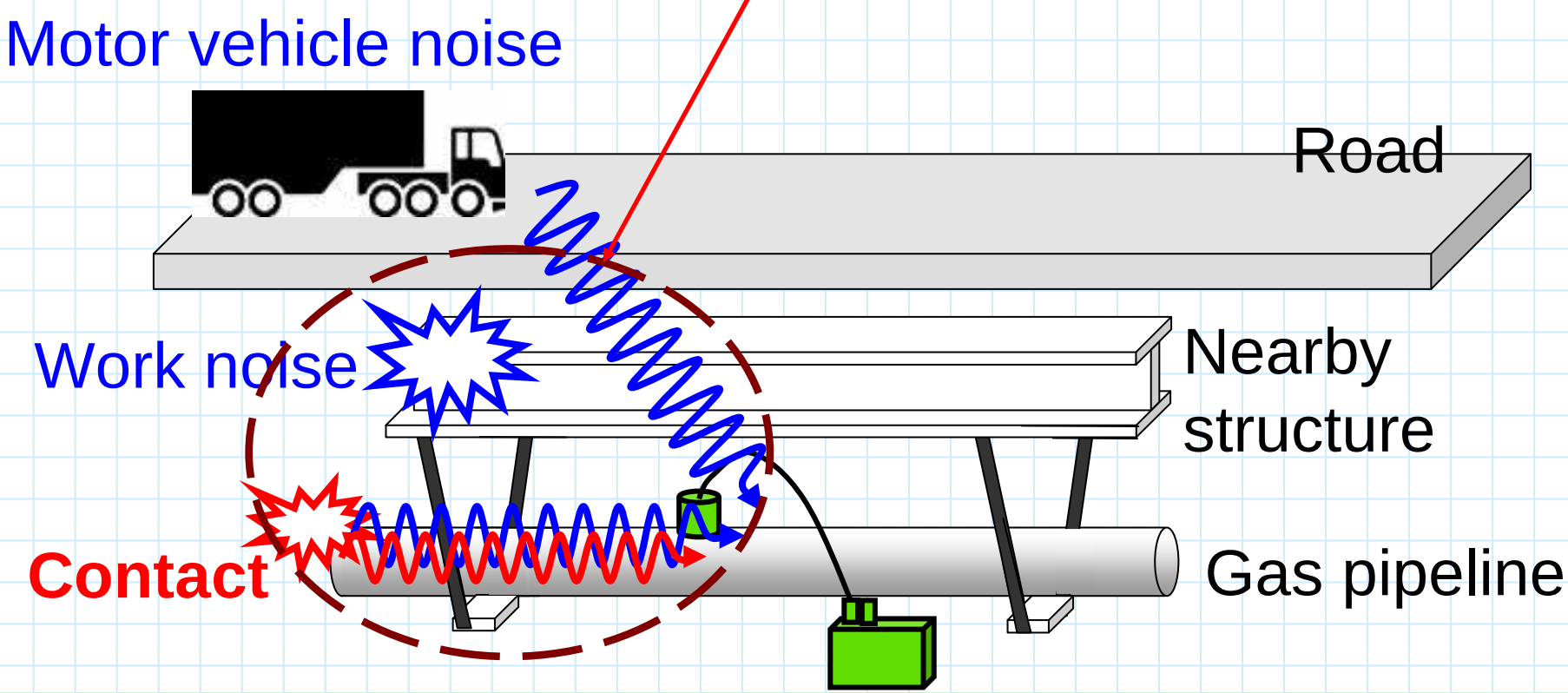


1. Contact vibration in the gas pipeline is detected and recorded in real time.
2. Gas company manager is notified of detection of contact by PHS communication.
3. After completion of work it is reinstalled at another site.

Development history

Development problem

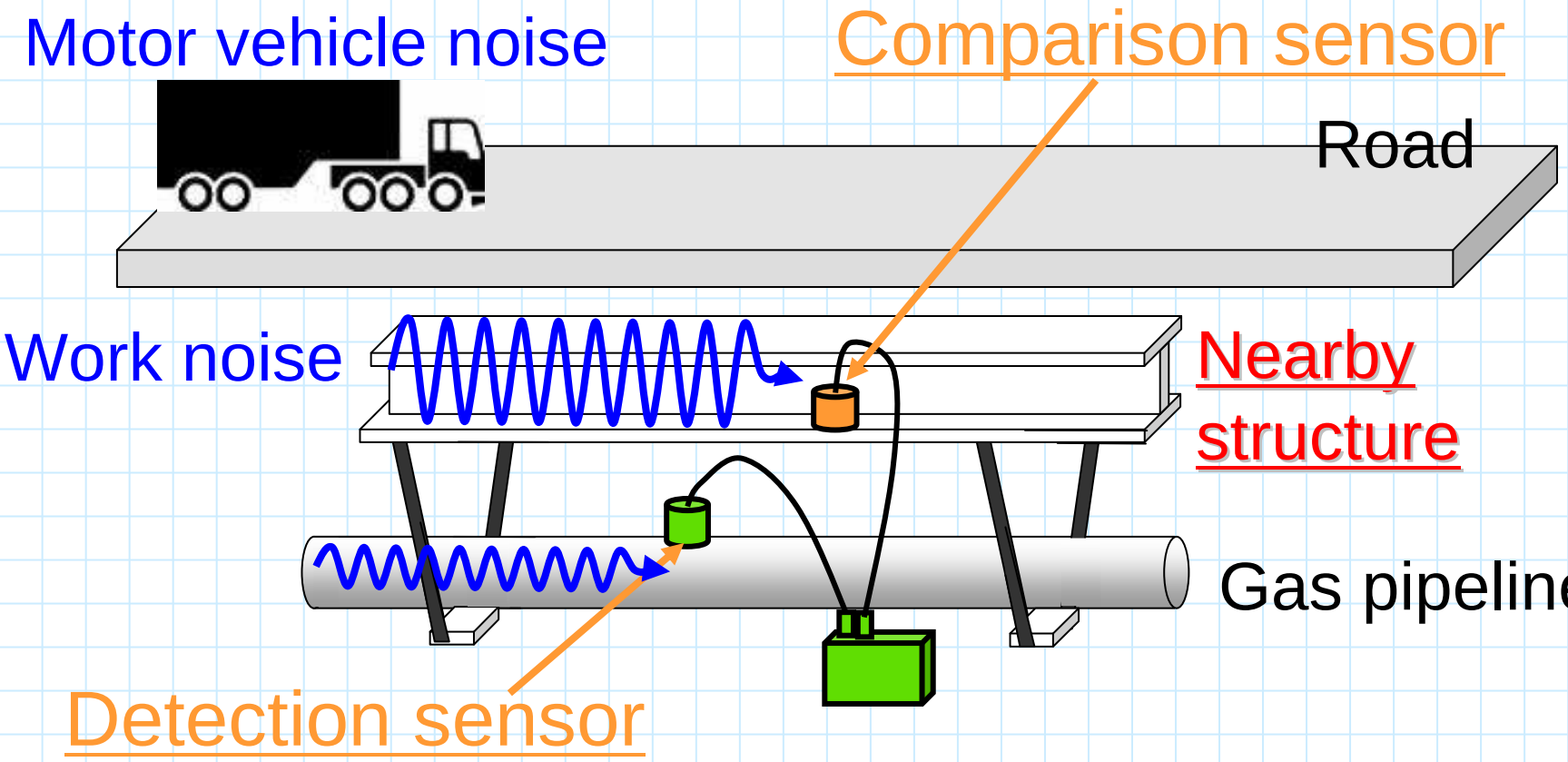
Noise elimination is the major problem



Development history

Problem resolution measure

Attaching two sensors

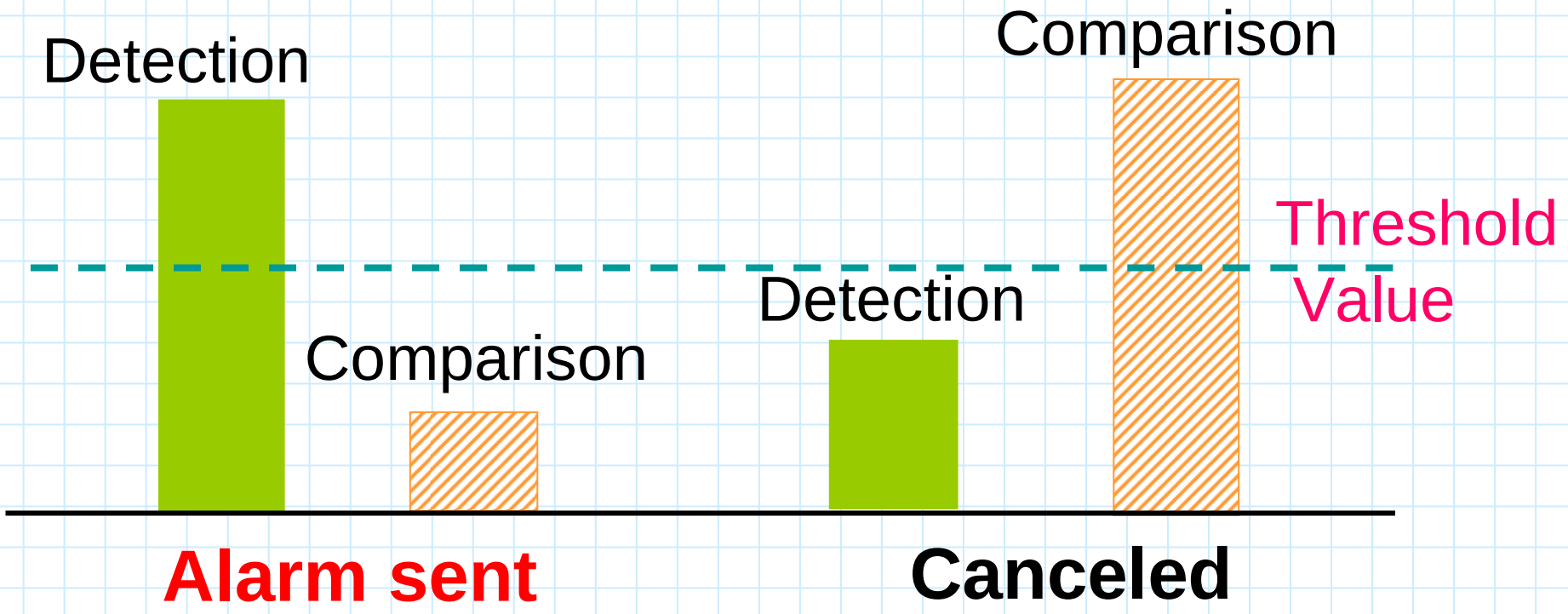


Development history

Noise canceling logic

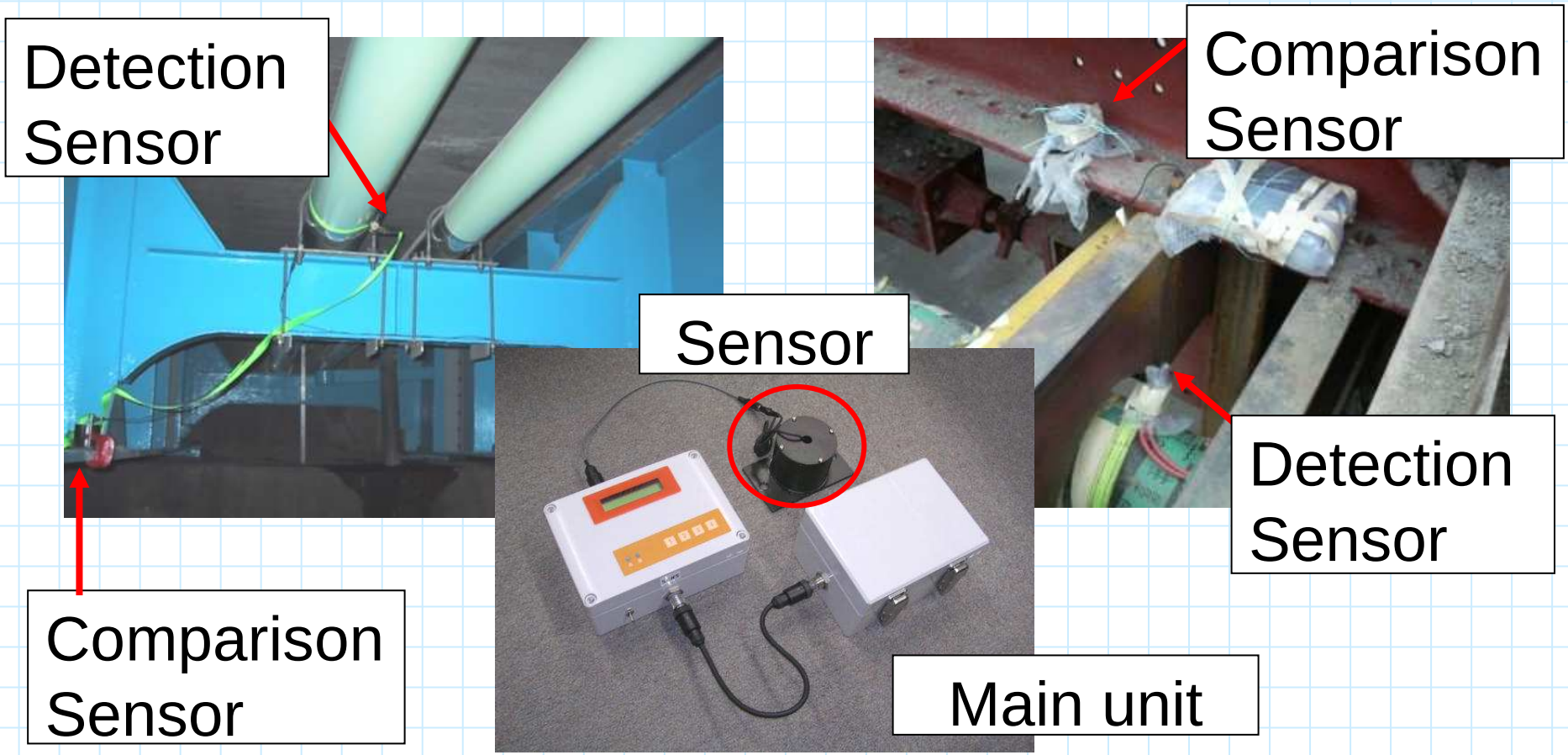
1.Direct Contact

2.Motor Vehicle Vibration
Work Vibration



Development achievements

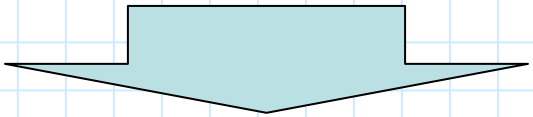
Exposed system Installed in the field



Site monitors (~2005.12) = 7 cases

Summary

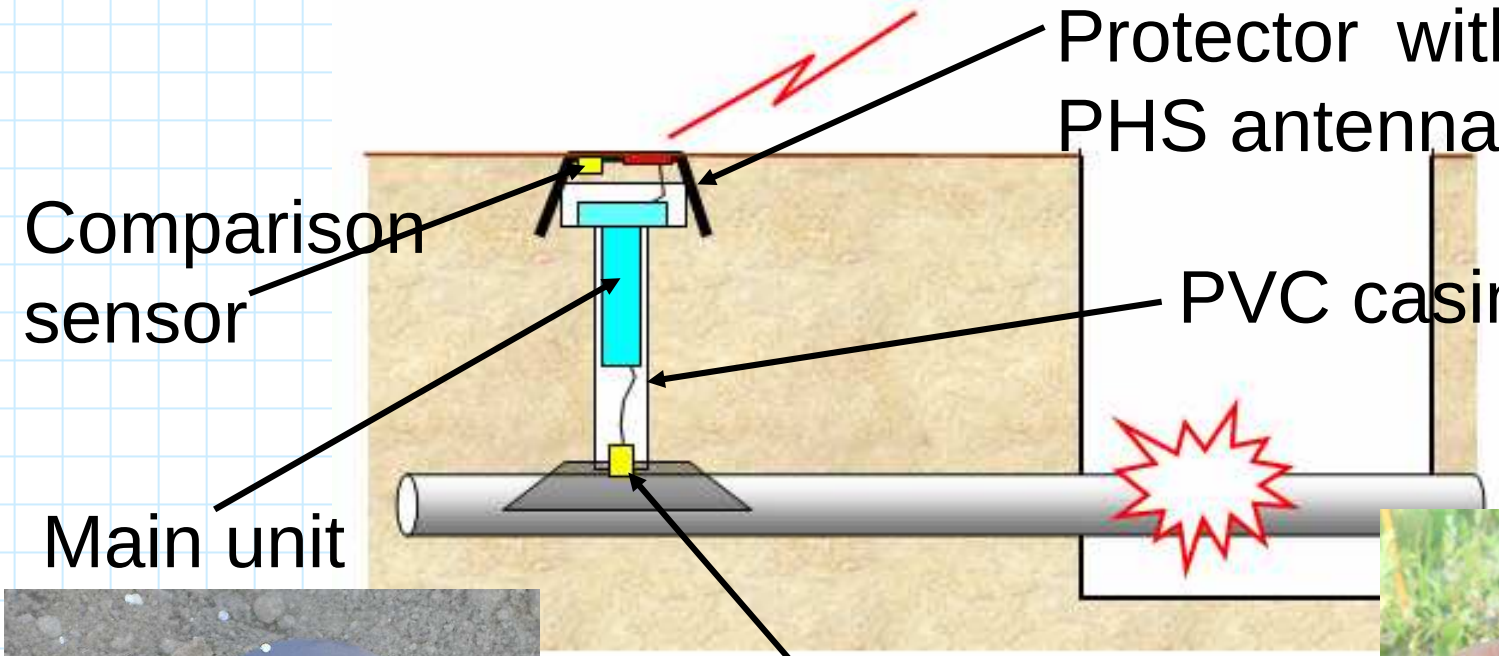
- Using two sensors
  (Detection & Comparison)
- Noise canceling logic (Patent pending)

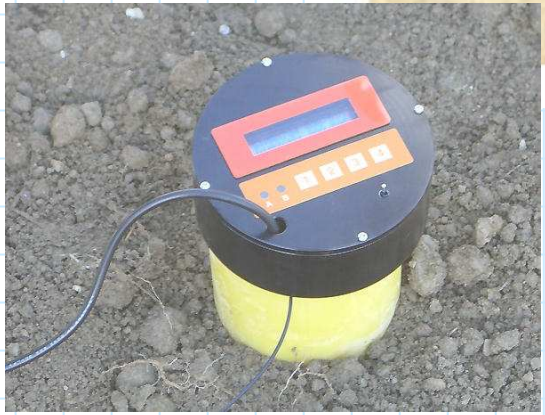


1. Reliable detection
2. No false alarm
3. Simple & portability
4. Inexpensive system

Future challenges

Configuration of the buried system





Thank you all very much for your kind attention !

If you have any questions,
please feel free to send E-mail.

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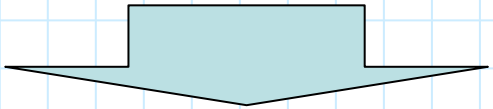
Preliminary materials after this.

Outline

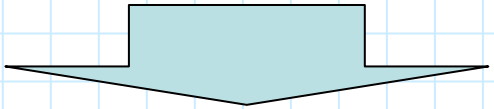
- Course of the development
- Development guidelines
- Development history
- Development achievements
- Summary

Course of the development

[Development of third-party work measure tools]



- Guiding third part work contractors
- Early discovery in real time monitoring



Portable Third-Party Damage Remote Monitoring System

Development guidelines

Objects monitored and challenges

[Buried pipelines]

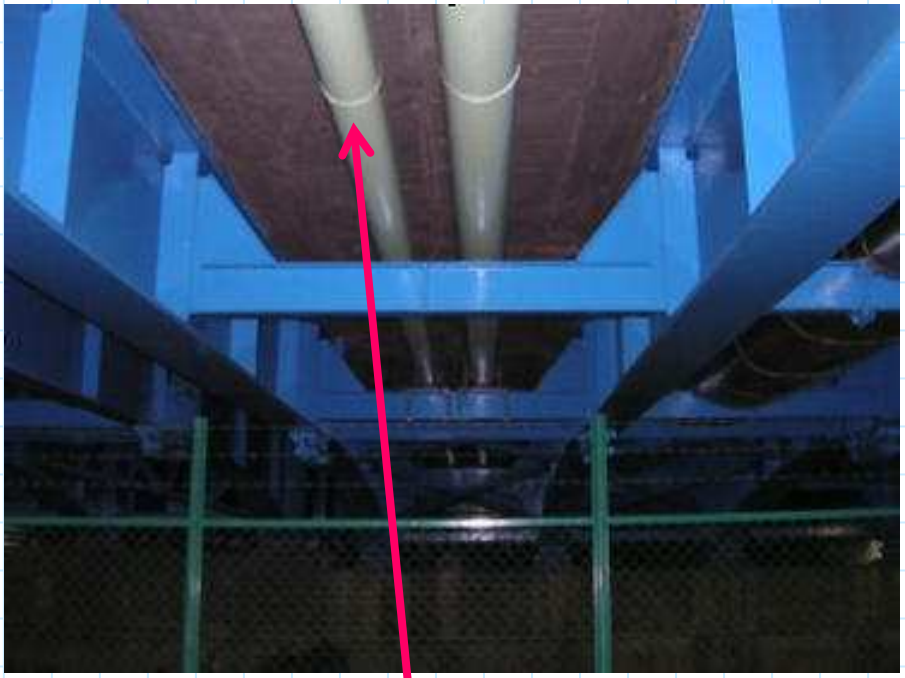
- Damping of vibration caused by the soil
- Installation method for buried pipeline
- Measures against external noise
- Remote monitoring method

[Exposed pipelines] ← Priority

- Measures against external noise
- Remote monitoring method

Development guidelines

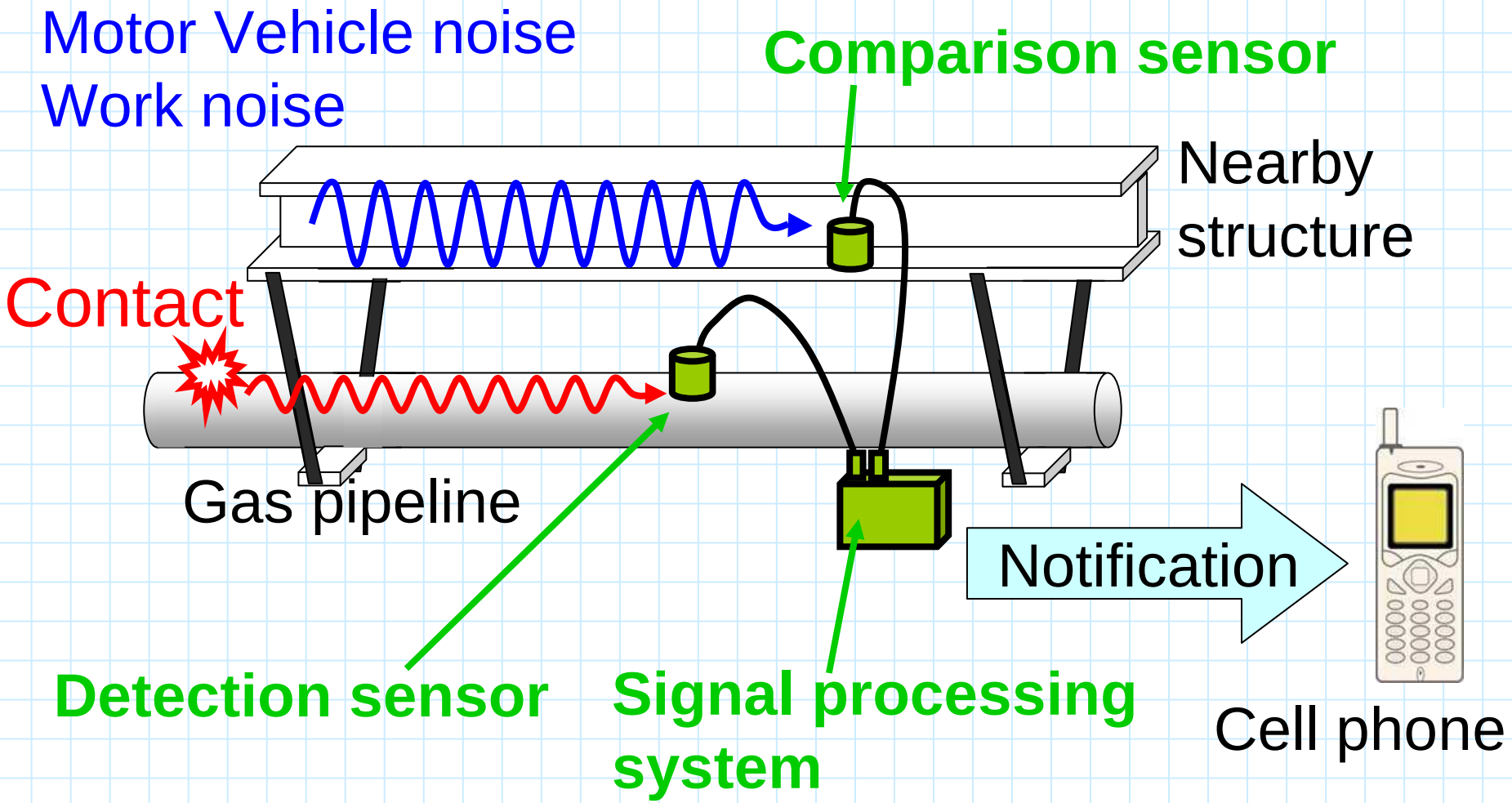
Exposed pipelines



Exposed pipeline

Development History

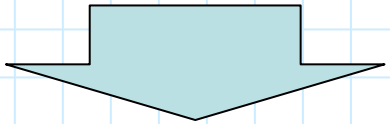
Configuration of the exposed system



Summary

This system has two objectives …….

- Improved guidance of third-party work contractors
- Early discovery in real time monitoring

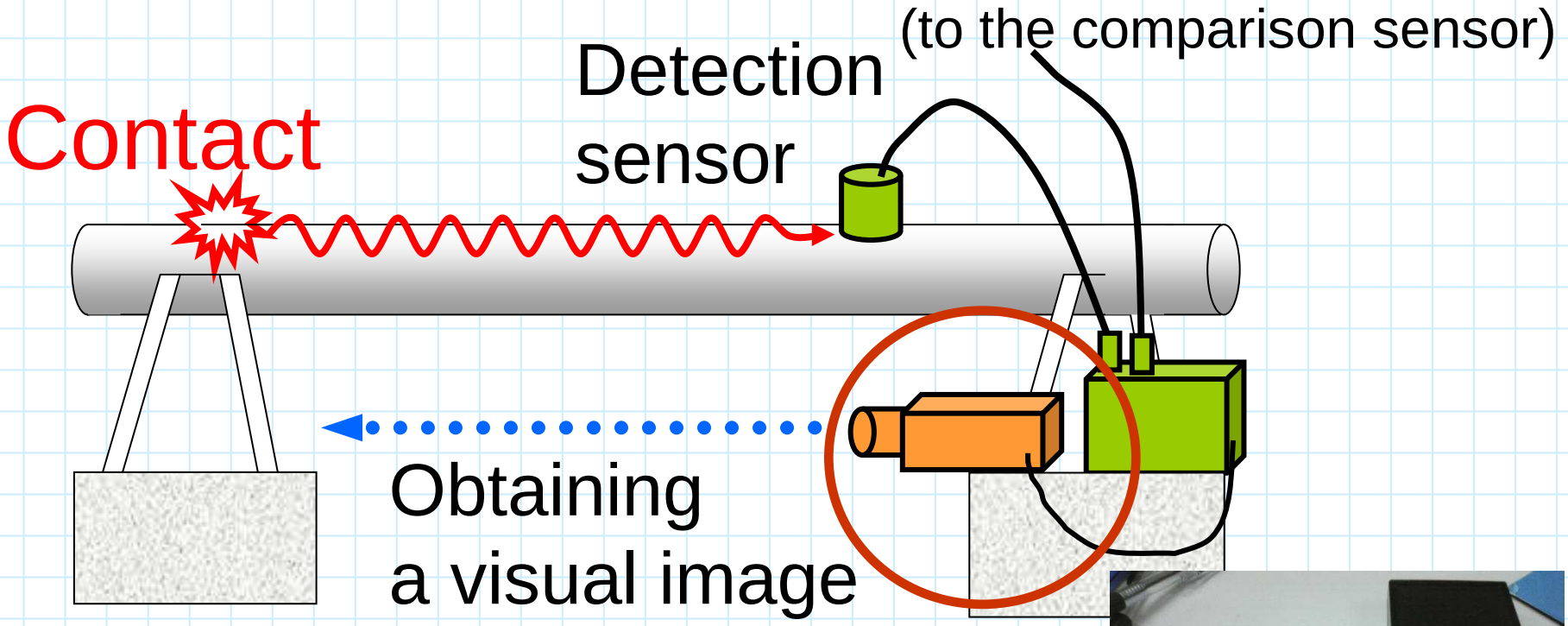


Reduction of third-party work accident risk

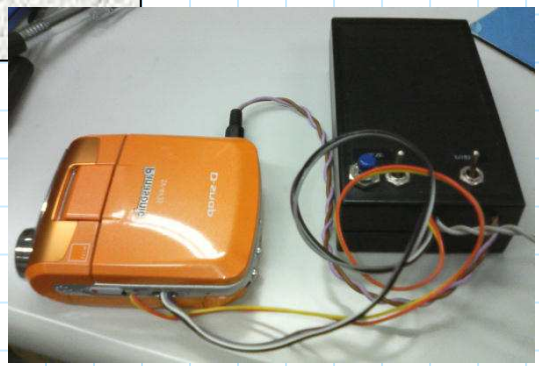
(Further strengthening of guidance of third-party work)

Future challenges

Added functions (obtaining images)



Monitor camera
(Equipped with recording medium)



Development achievements

View of the system installation

Comparison sensor　Main unit & Battery box

Exposed gas pipeline　Detection sensor

Development achievements

Site monitors (~2005.12)

Comparison sensor

Main unit

Exposed gas pipeline

Detection sensor