

# Integrated system for the determination of the geogenic Radon potential

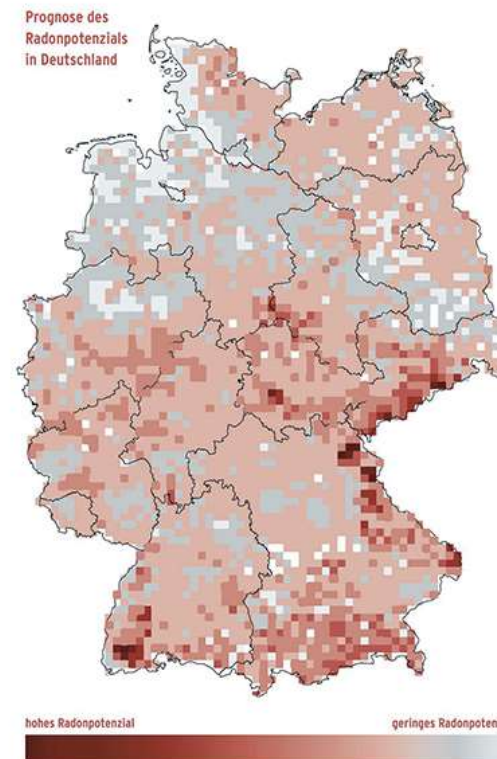
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## Measurement campaign in the federal state of Hesse

- Implementation of the new Radiation Protection Act
- Designation of radon priority areas
- Designation of 750 Measurement sites



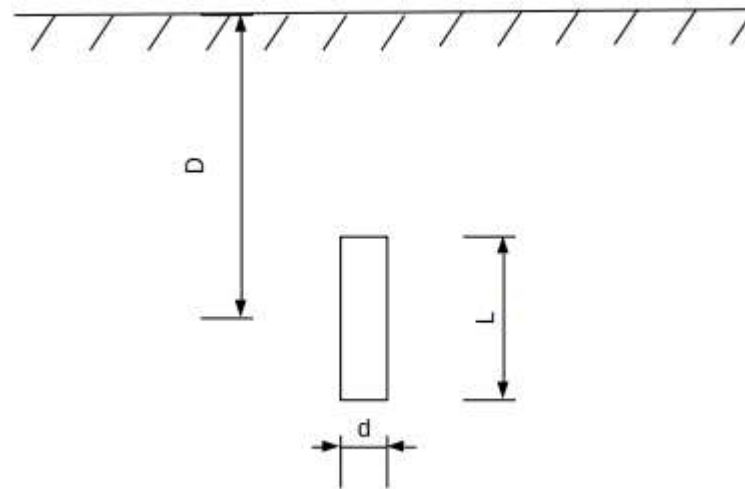
Source: BfS

## Background

- Geogenic Radon potential
- Radon activity concentration
- Permeability

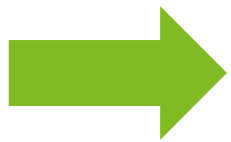
$$RP := \frac{C}{-\log_{10}k - 10}$$

Neznal 2004, Bossew &  
Hoffmann 2018



## Challenges during the campaign proceeding

- High influence of the operators
- Deficiencies in traceability and transparency
- Manual protocol



Development of an integrated measurement system to increase the quality of the data through a higher standardization of the whole measurement process

## Current state



## Components of the integrated system



Source: Bertin



Source: Vögtlin



Source: PCE

## Components of the integrated system



Source: Gas sensing solutions

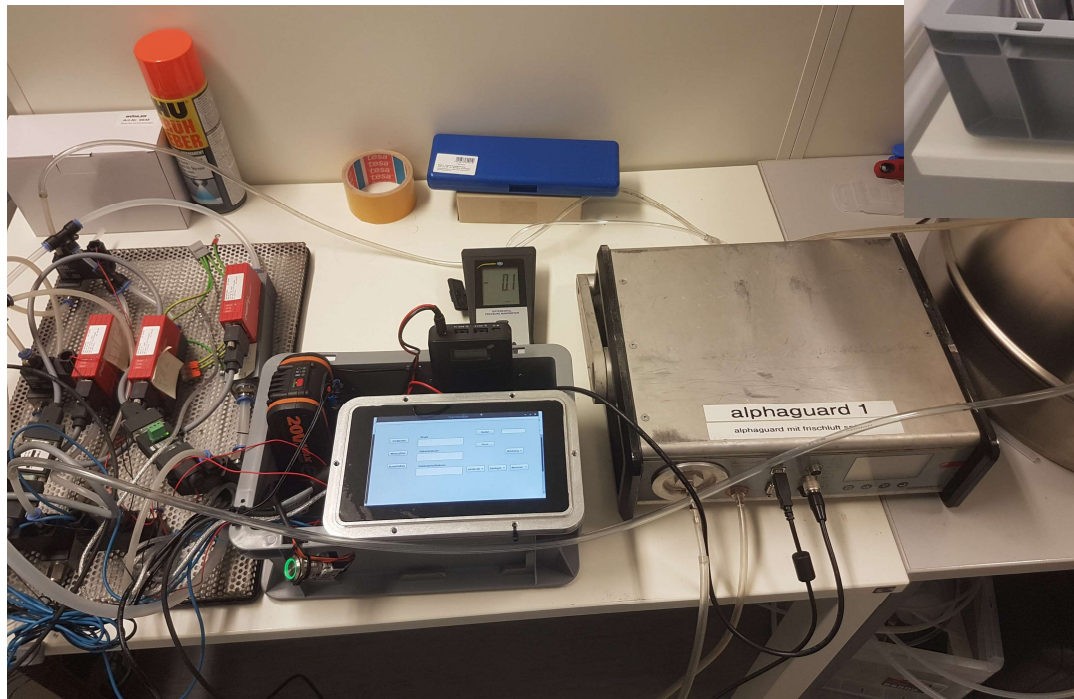
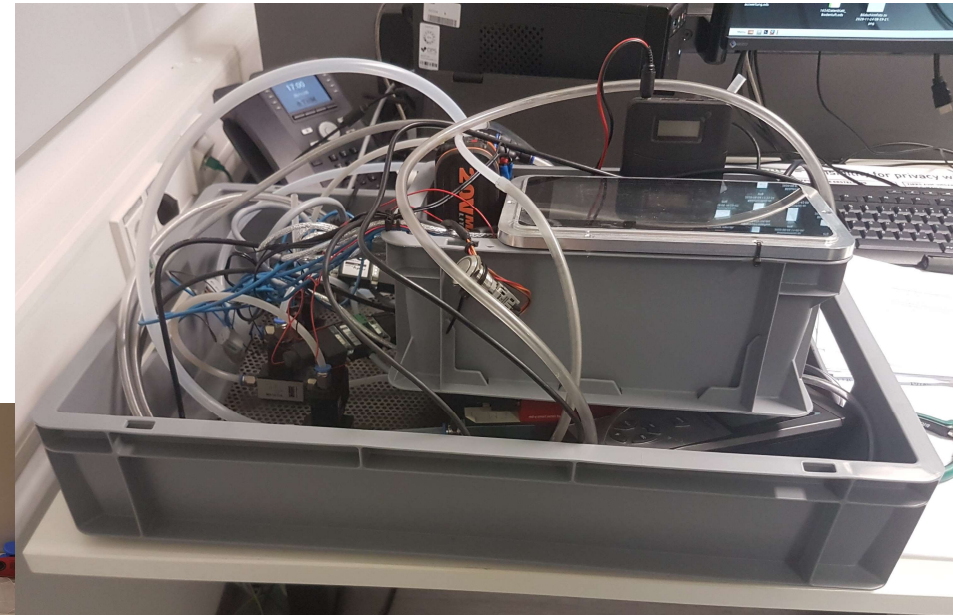


Source: Kendau



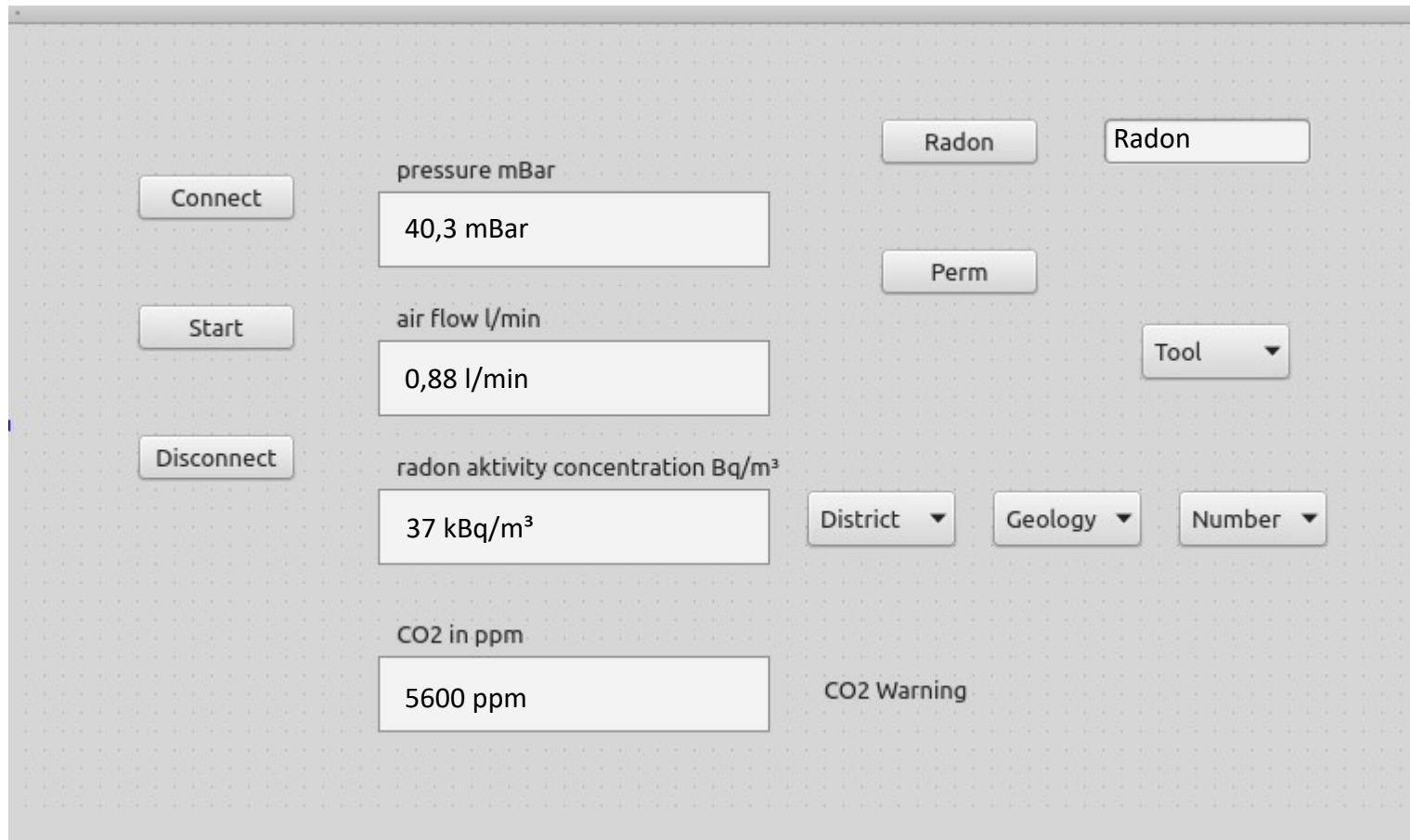
Source: Raspberry

## Integrated measurement system

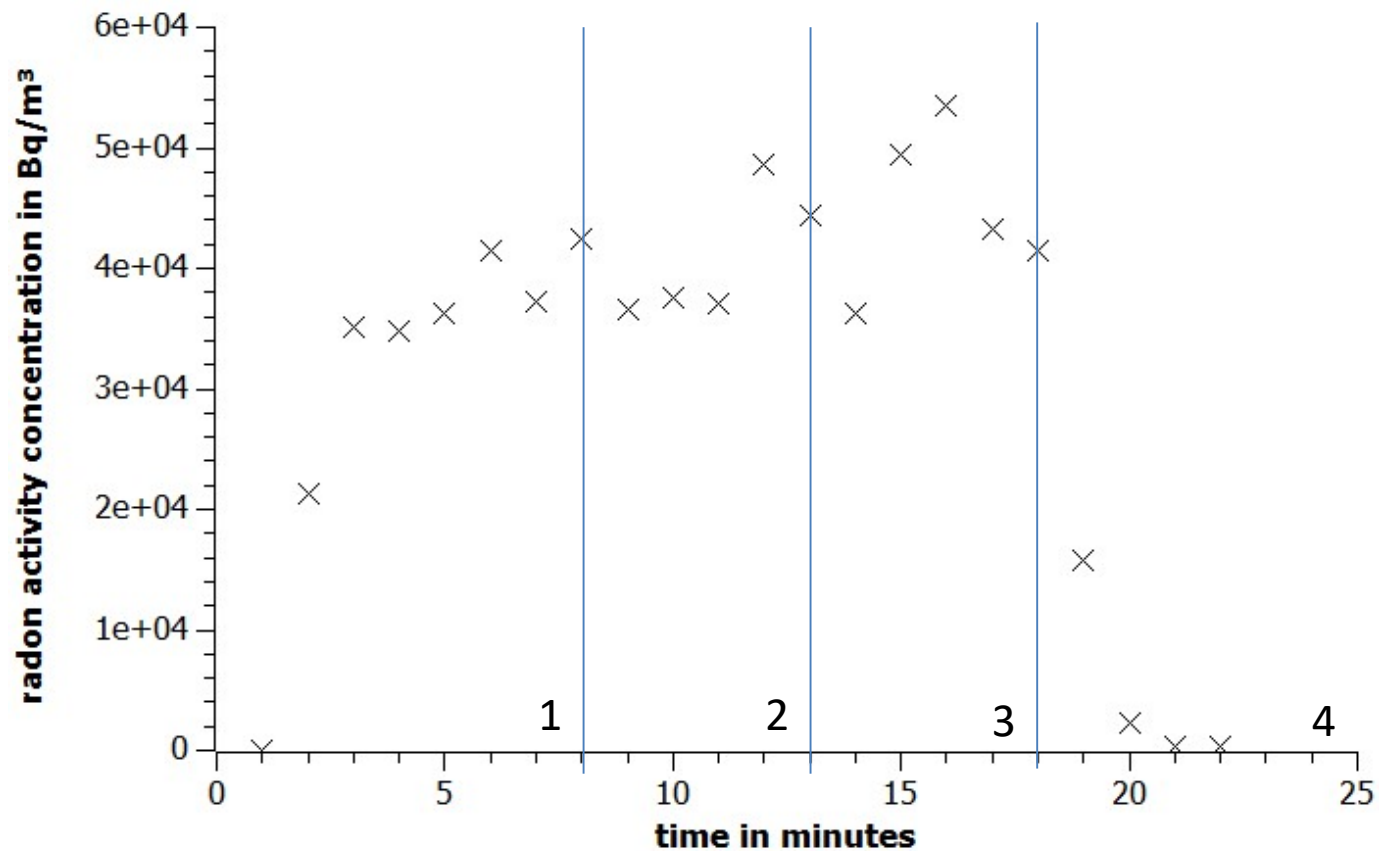




## User interface



## Automatization during measurement



## Conclusion

- The approach of developing an integrated measurement system succeeded
- Digital protocols for smoother data evaluation
- Further field experience is needed

## Outlook

- More extensive field use
- Evaluation of the whole system and process
- Improvement in terms of transport and roughness



## Sources

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Thank you for your attention!