



Roadways controls: A new device that guarantees measurements and contamination detection

06/06/2024



Protéger le patrimoine du groupe

Chaque salarié s'engage à traiter de façon responsable les informations qu'il détient dans le cadre de son travail et respecter les règles de sécurité et de confidentialité, en particulier concernant les données sensibles.

Les bons reflexes

- Rester **discret** et vigilant dans les lieux publics
- Pour les documents sensibles, utiliser des **moyens de protection** adaptés (Stormshield Data Security)



Cette réunion aborde des sujets internes



Cette réunion aborde des sujets restreints dont la divulgation peut être préjudiciable à EDF : chacun s'engage à n'en communiquer les supports et à n'en relater les échanges qu'avec discernement et en mentionnant explicitement « à ne pas rediffuser / à ne pas divulguer »



Cette réunion aborde des sujets de nature confidentielle, chacun s'engage à tenir secrètes les informations tant écrites qu'orales qui y sont exposées.

Chaque dépositaire de cette présentation s'interdit de la communiquer à quelque tiers que ce soit sans l'accord du président de séance

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EDF REQUIREMENTS



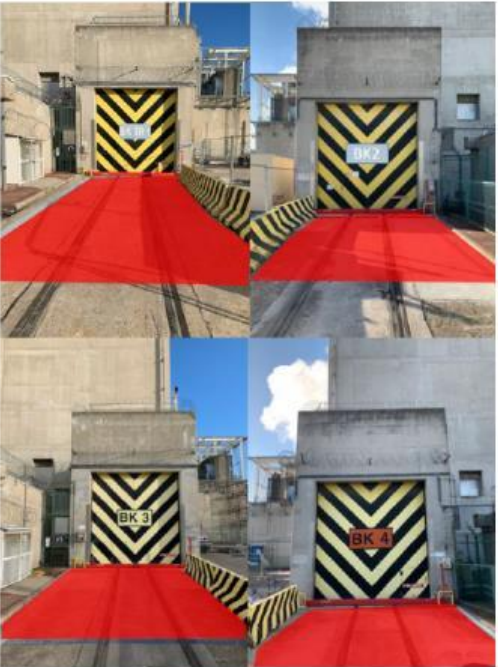
For the Bugey NPP, 4860 m² to be inspected per year, i.e. 96 hours

Roadways are inspected at the exits of RCA : every 10 weeks +/- 1 week



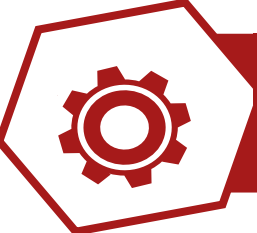
Measurements on NPP's roadways after each shutdown

For Bugey : 58 000 m² per year, i.e. 160 hours



For Bugey : 14 000 m² per year, i.e. 290 hours

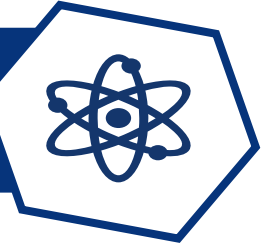
Roadways are inspected following the transfer of big equipment



Measurements on NPP's roadways annually

For Bugey : 130 000 m² per year, i.e. 200 hours

The system must be able to measure a ponctual source of 800 Bq (cobalt 60)



CURRENT EQUIPMENT



Old generation:
Contamination monitors equipped with large-area gas-filled beta detectors



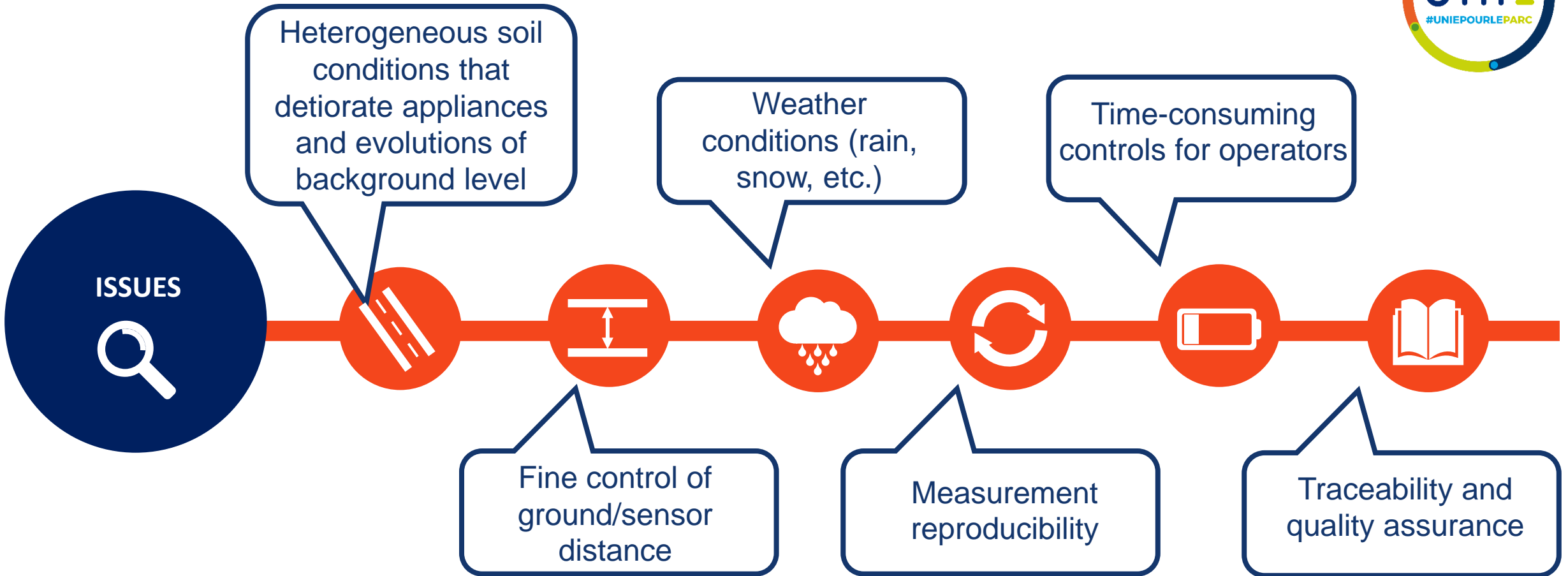
Manual Screening contaminometer

Used to locate and check the soil decontamination process

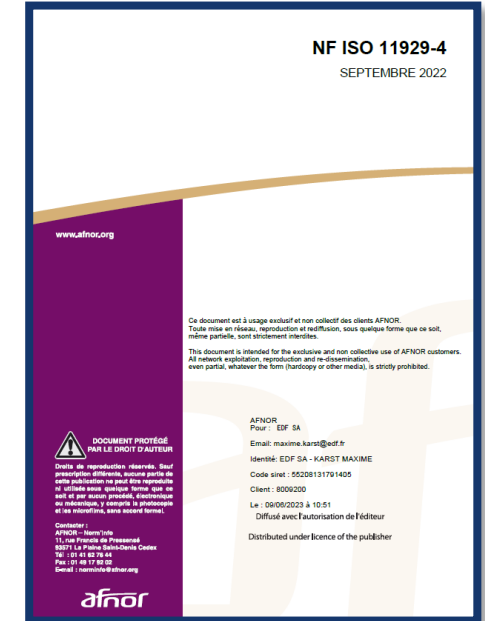
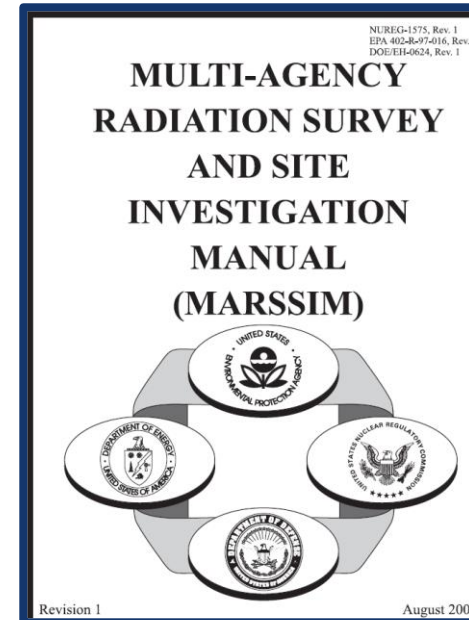


New generation:
Contamination monitors equipped with large area shielded plastic gamma scintillators

WHAT ISSUES ARE THEY FACED WITH?

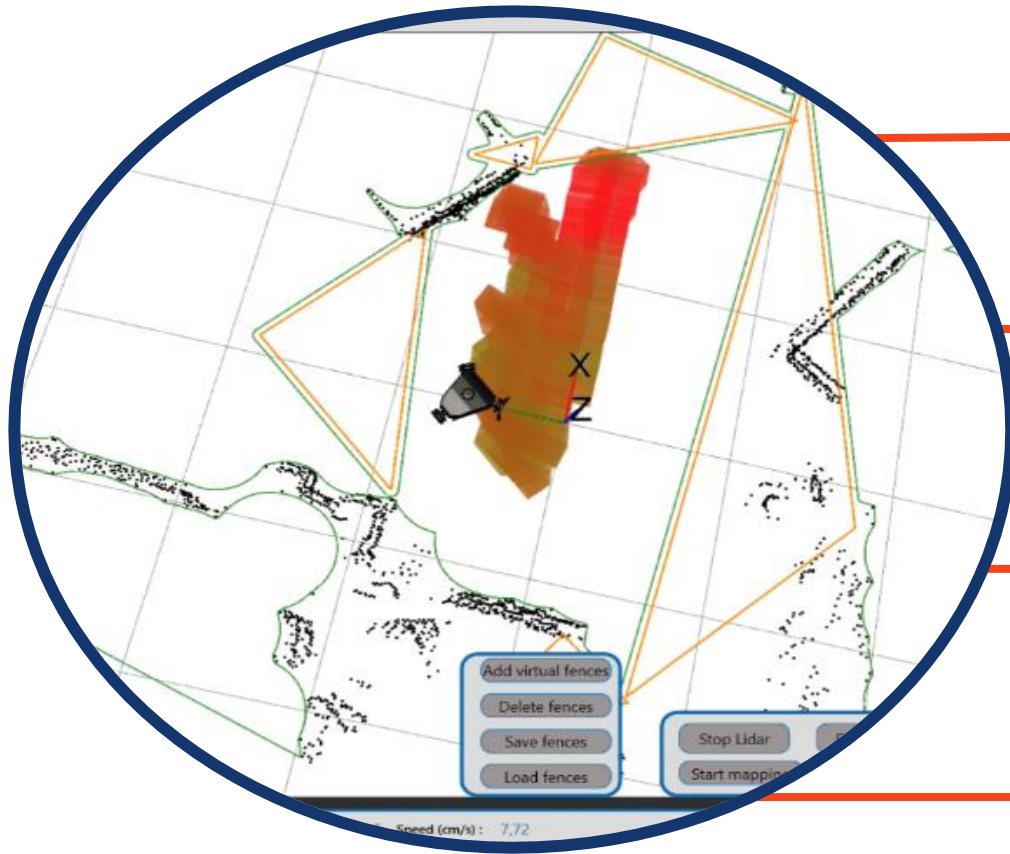


SOLUTION



- Carrier IP67 – manual, autonomous, semi-autonomous driving (LIDAR + GPS)
- 2 NaI(Tl) detectors for on-site gamma-ray spectrometry
- Screening via MARSSIM methodology then switch to ISO11929 mode if alarm

SOLUTION



Detection area 2 x 1250 cm²

A servocontrol system that automatically adapts the carrier's speed to take account of back-ground noise and MDA (Minimum Detectable Activity).

MARSSIM screening at 20 cm/s (20 cm/s, surface : 570 m²/h) with an Alarm Threshold of 635 Bq

Mesure ISO11929 (4 cm/s, 800 Bq)



Integration on an industrial site

- Interactions with other vehicles and construction sites on an industrial site



Autonomous driving

- Reduced workload for technicians
- Improved traceability
- Improved quality

Adaptability

- Resistance to external conditions (soil, rain, wind, etc.)
- Controllable on wet ground

Possibility of pooling requirements

- DeD gamma measurement in certain areas
- Use in crisis situations (DeD measurement, spectrometry, etc.)
- Multi-purpose platform (logistics, various sensors, etc.)

CONCLUSION



A device adapted to field needs



Successful partnership between SOCOTEC - EDF





Thank you