

Economic Commission for Europe

Inland Transport Committee

Working Party on the Transport of Dangerous Goods

**Joint Meeting of the RID Committee of Experts and the
Working Party on the Transport of Dangerous Goods**

18 February 2019

Bern, 18-22 March 2019

Item 6 of the provisional agenda

Reports of informal working groups

**Report of the Informal Working Group on the reduction of the
risk of a BLEVE**

**Transmitted by the Government of Spain on behalf of the Informal
Working Group**

Annex 6

**Future developments on preventive measures in parking areas
(INERIS, France)**



Automatic Detection and Extinction systems on outdoor parks of dangerous goods transportation (DGT) vehicles



Shihab RAHMAN – Albin TARRISSE
INERIS
Accidental Risk Division

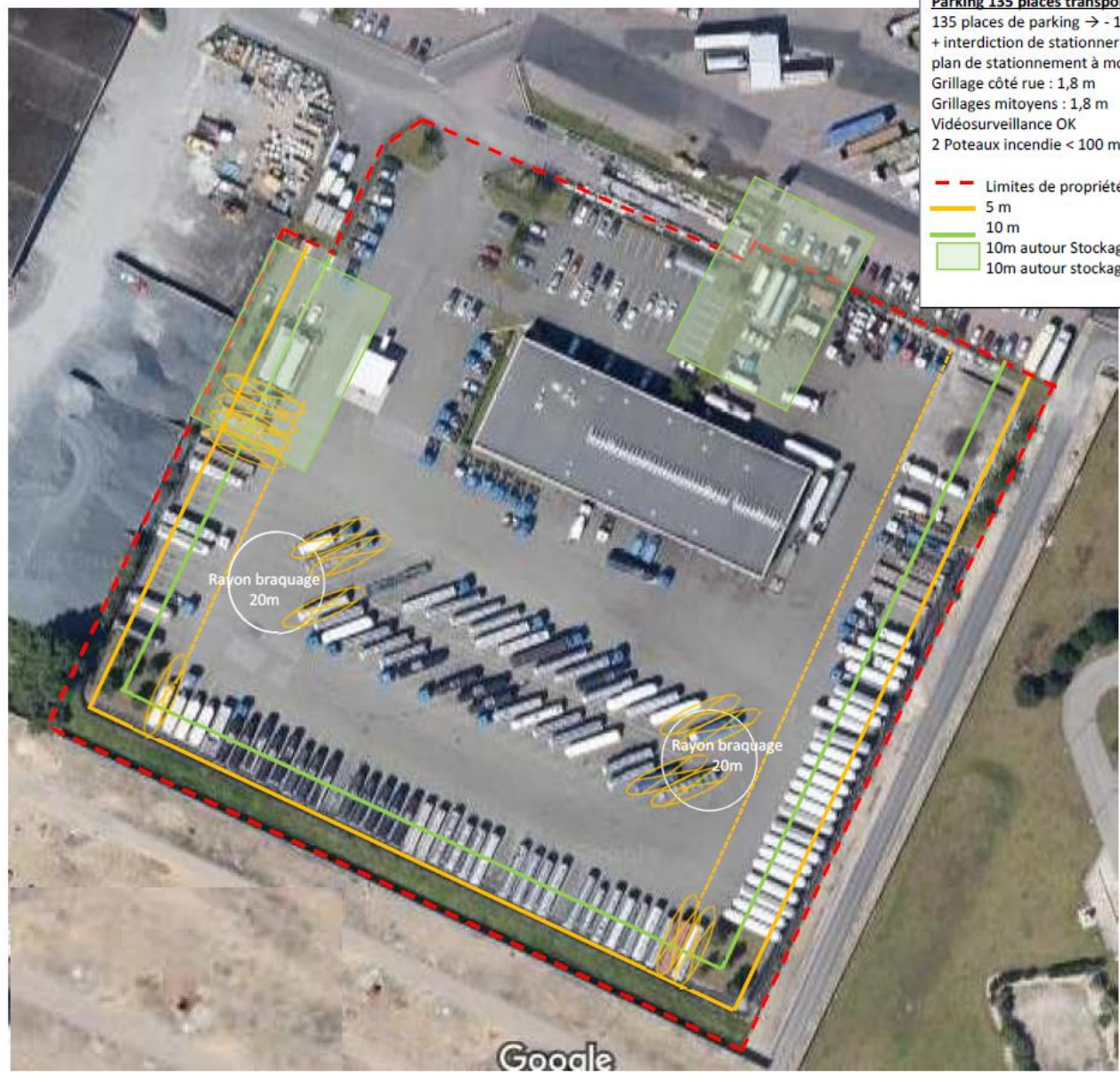


*maîtriser le risque |
pour un développement durable*

- Several accidents (fire + explosion) in outdoor DGT parks occurred in France, tending to prove that fire is of criminal origin
- DGT regulation in France thus requires that such parks are equipped with automatic fire detection systems within the next years, supplemented by automatic extinction/mitigation systems
- INERIS was thus mandated to benchmark existing technologies and consider on-board technologies in order to detect the fire on time (extinction expected before occurrence of BLEVE)

Scenarios of interest

Typical parking configuration



Parking 135 places transporteur :
135 places de parking → - 14 places → -10% de places
+ interdiction de stationner des citernes GPL en bordure de parking = plan de stationnement à modifier.
Grillage côté rue : 1,8 m
Grillages mitoyens : 1,8 m
Vidéosurveillance OK
2 Poteaux incendie < 100 m station GO

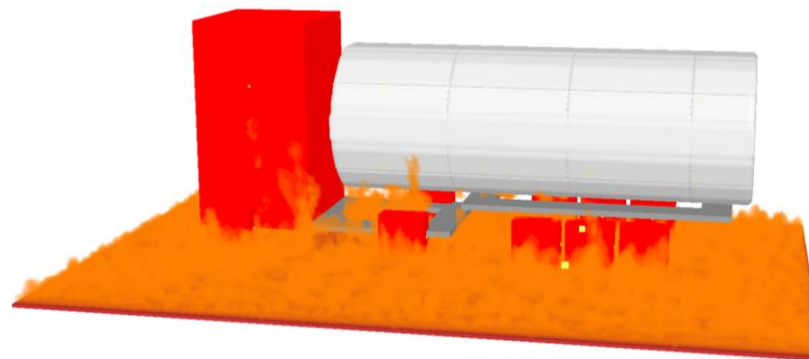
— — Limites de propriété
— 5 m
— 10 m
— 10m autour Stockage GPL vrac aérien <6T
— 10m autour stockage GO aérien 4734

Scenarios of interest

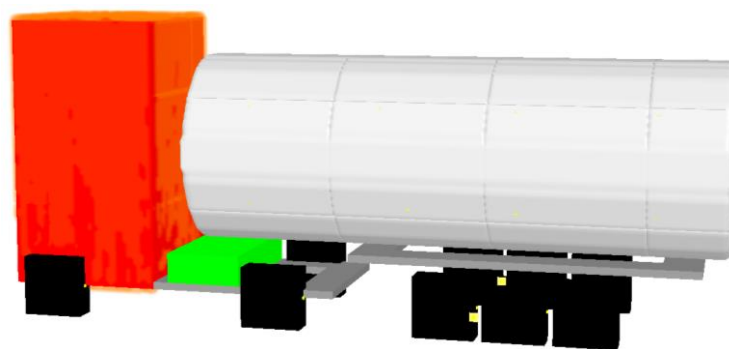
Fire locations of interest



Tyre fire



Pool fire



Cabin fire

Detection

- Effective technologies: IR/UV sensors, thermographic cameras, thermovelocimetric cables
- Identified drawbacks: high cost due to high sampling of space, detection time ...

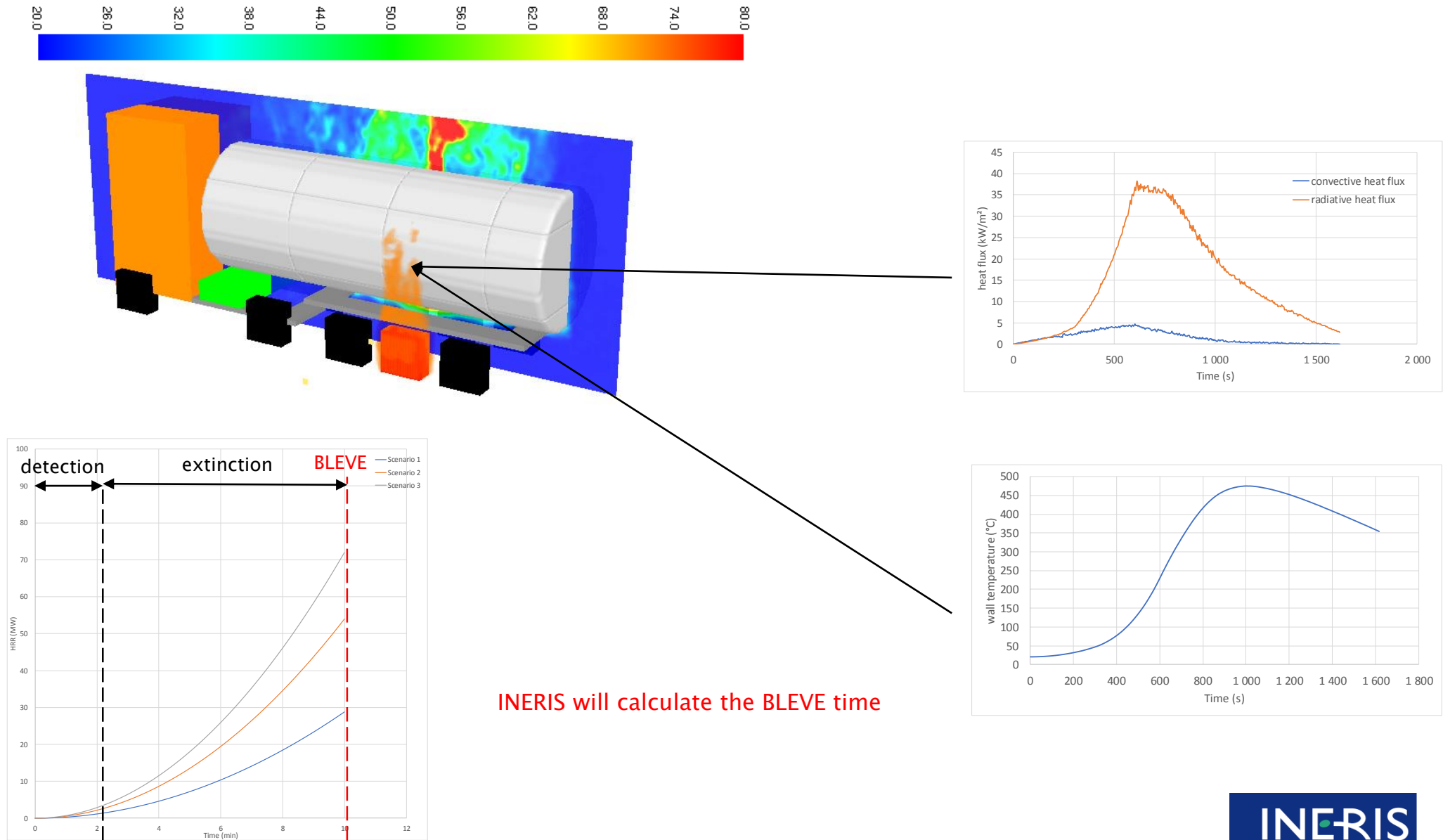
Extinction

- Effective technology : foam cannon
- Identified drawbacks : high cost due to high sampling of space, foam/water quantity ...

➔ Motivation for considering on-board technology detection and extinction/mitigation technologies

On-board technologies

Benefits of numerical simulations



INERIS will calculate the BLEVE time

- INERIS is considering on-board technologies with maximum cost-benefit ratio
- BLEVE time calculations are readily used for guidance