



National Coordinator for
Counterterrorism and Security
Ministry of Security and Justice

The Dutch National Safety & Security Strategy

Consequences of
satellite disruption due
to solar storm

European Space Weather
Week



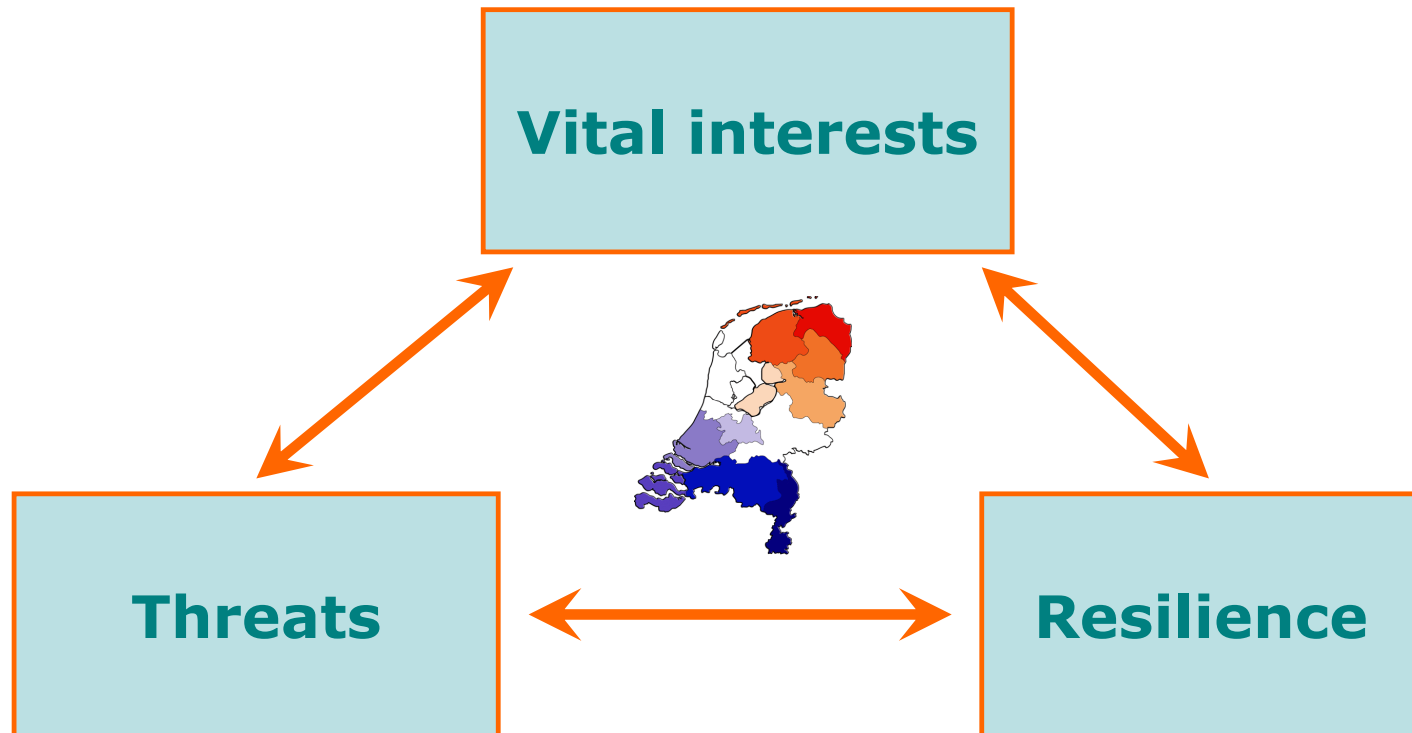
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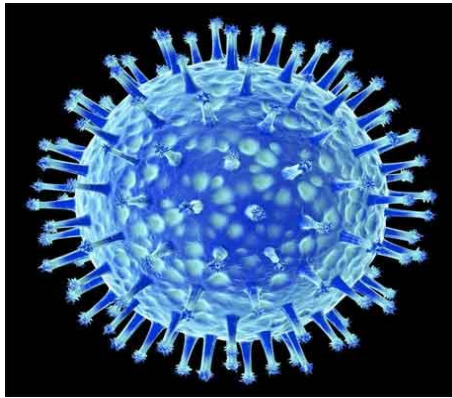
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Introduction to the Dutch S & S Strategy







National Security: 'definition'

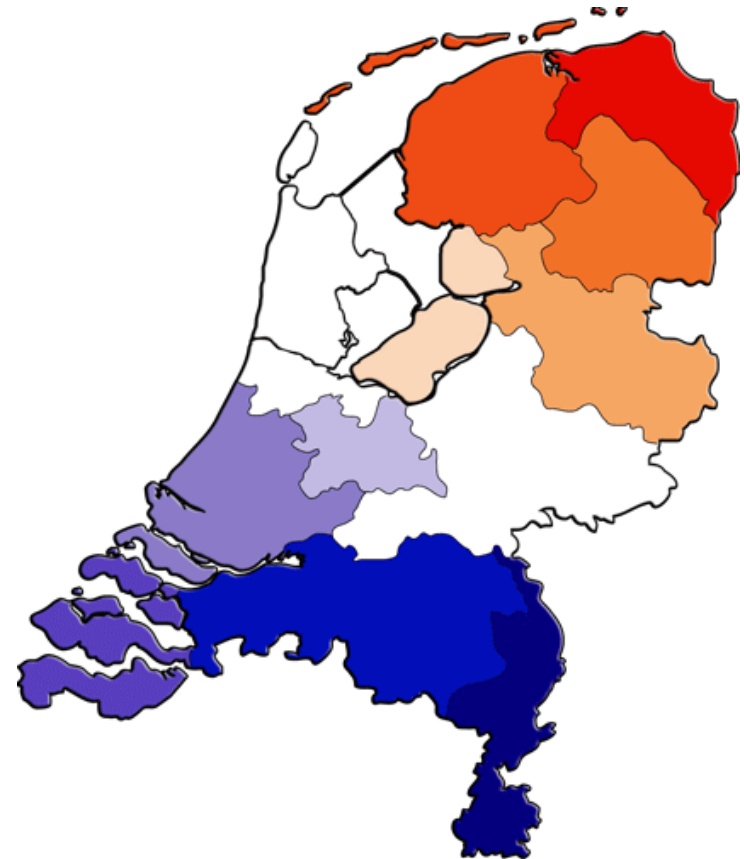
5 vital interests:

- Territorial security
- Physical safety
- Economical security
- Ecological security
- Social and political stability

Societal disruption

All-hazard approach

Safety and security





1. Territorial security

- 1.1** infringement of territorial integrity
- 1.2** infringement of the international position of the Netherlands

2. Physical safety

- 2.1** fatalities
- 2.2** seriously injured or chronically ill
- 2.3** physical suffering (lack of basic necessities)

3. Economical security

- 3.1** costs

4. Ecological security

- 4.1** longterm impact on environment and nature (flora & fauna)

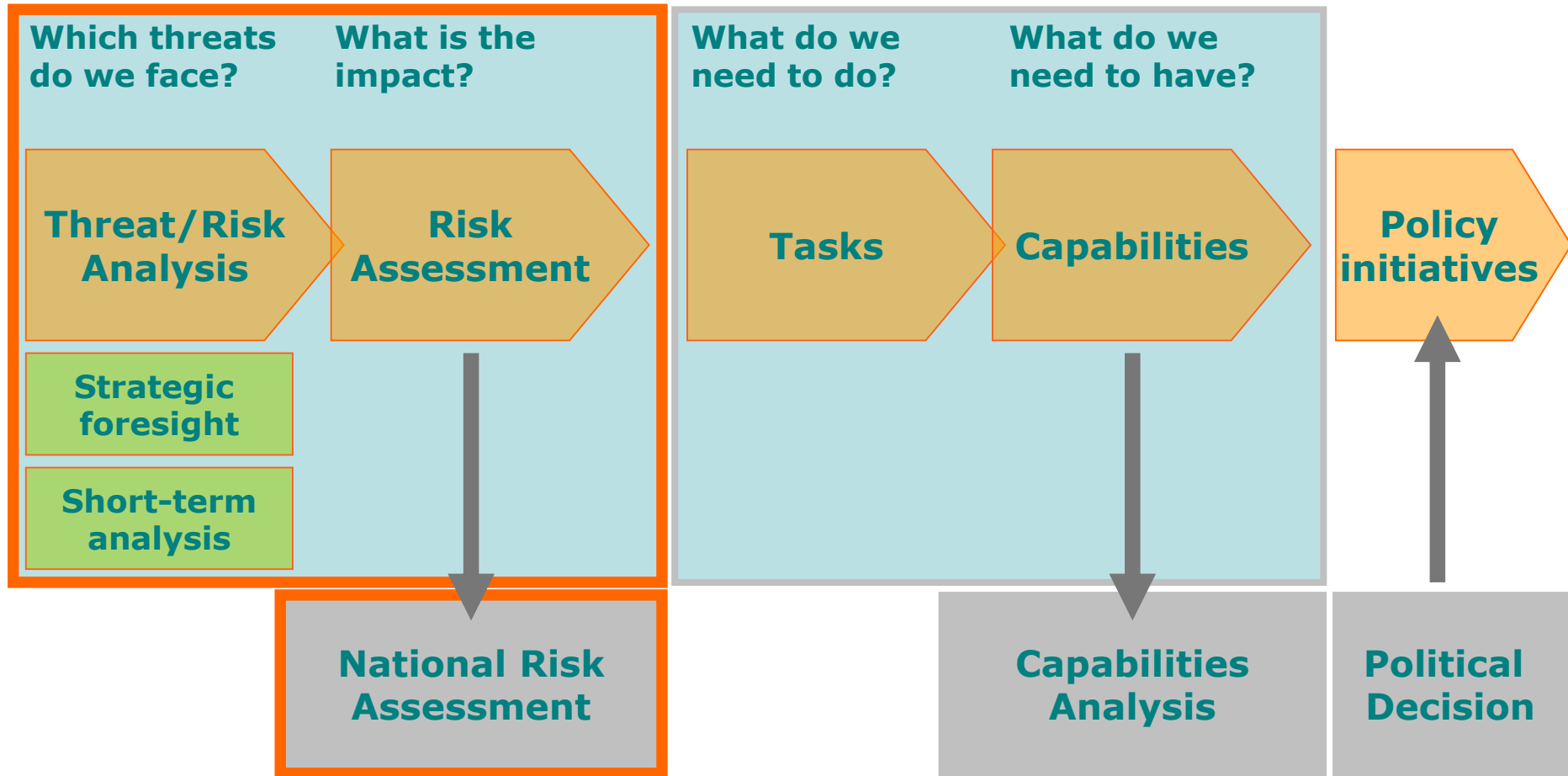
5. Social and political stability

- 5.1** disruption of everyday life
- 5.2** violation of the democratic system
- 5.3** social-psychological impact



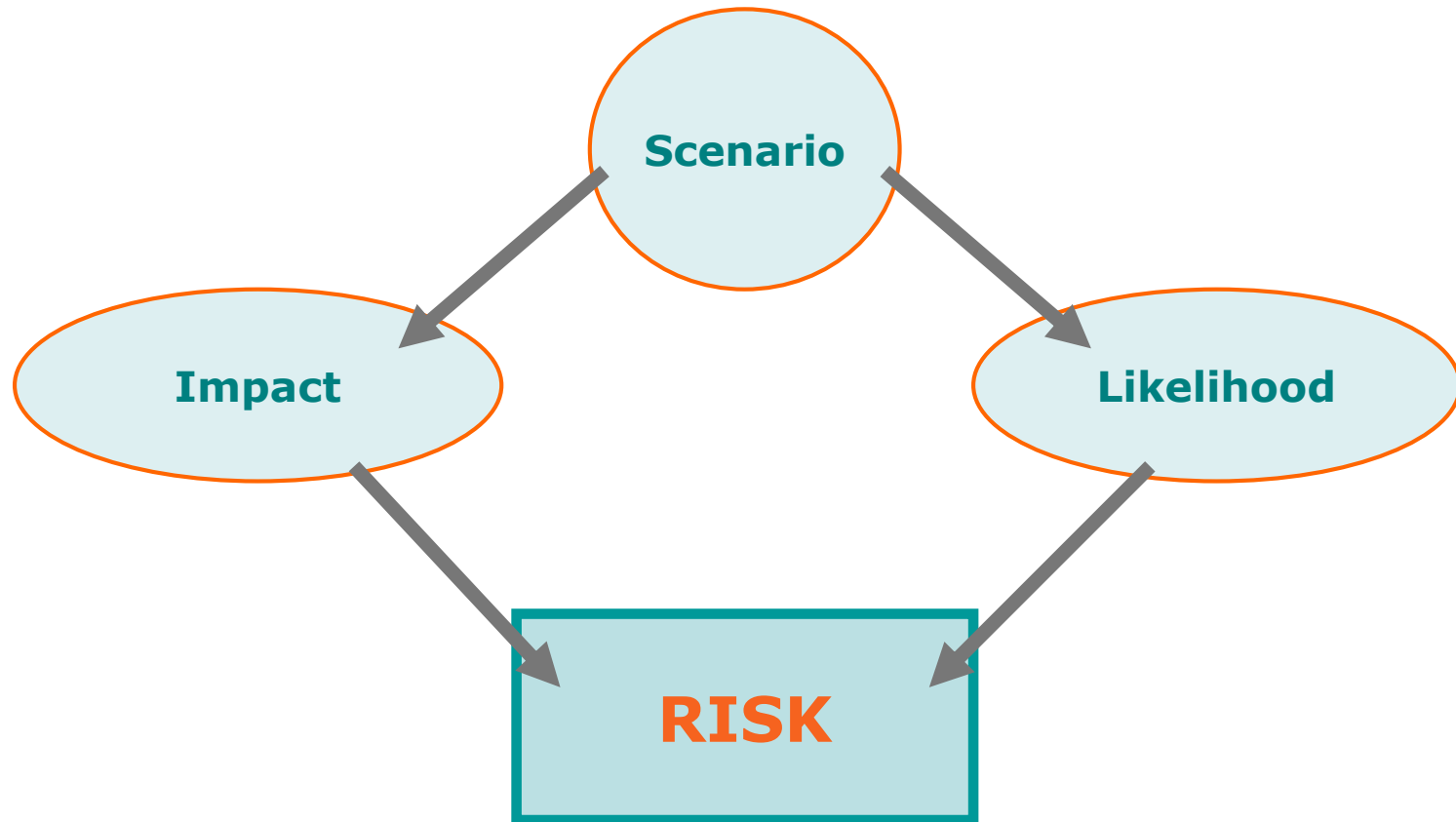
GOAL: To increase our national resilience through insight in threats and capabilities

- Multi-sector approach
- **Ministries remain primarily responsible** – for prevention and preparation and – in cooperation with the ministry of Security and Justice – for response
- **Ministry of Security and Justice is primarily responsible for crisis management**
- Government-wide cooperation based on **equality**
- **Public-private cooperation**





RISK: likelihood and impact





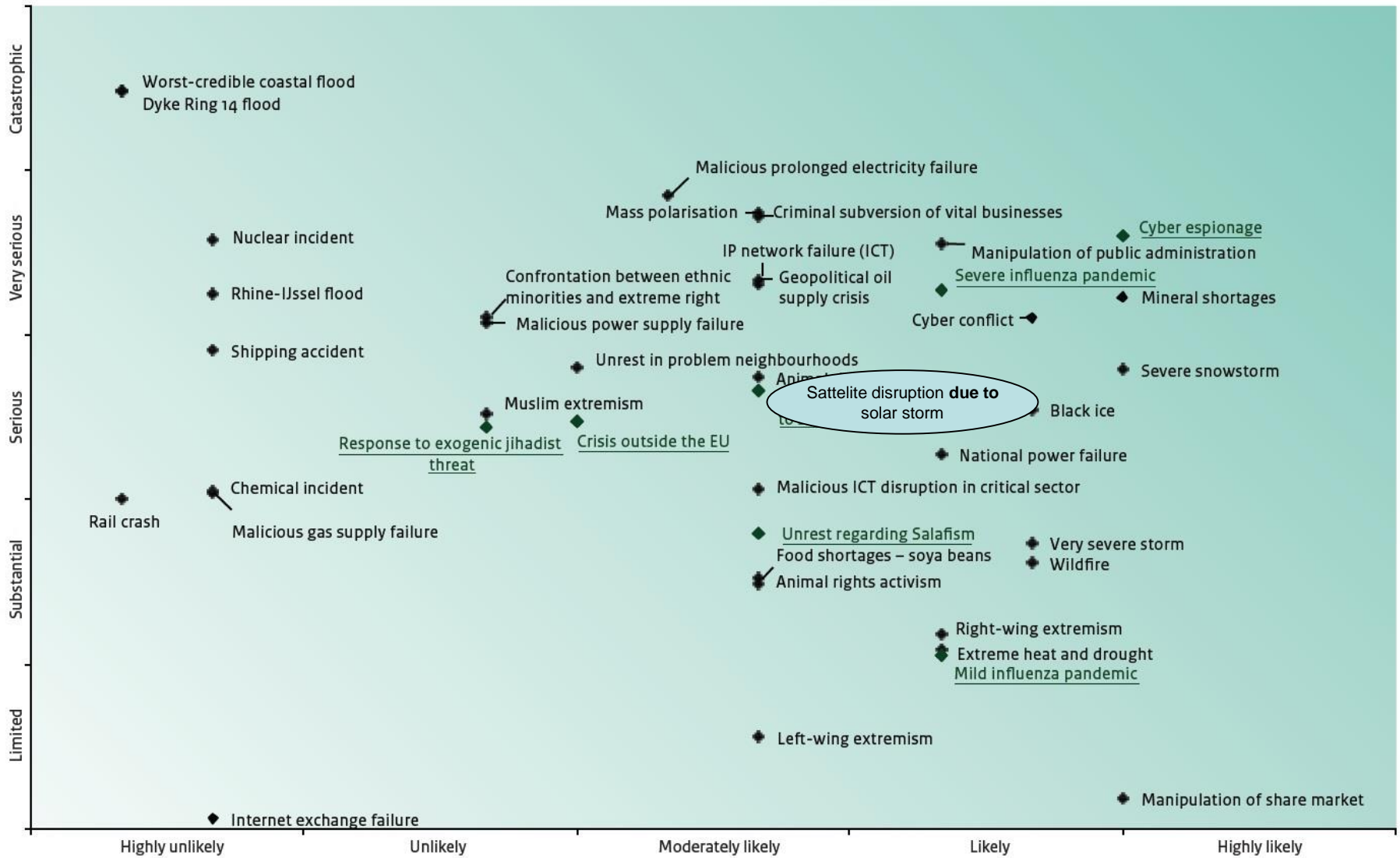
Scenario: Satellite disruption due to solar storm

- No network of 'severe weather experts': expert group built from scratch
- No 'electronic Armageddon' but more plausible event
 - S3(radiation)/R4(radio)/G4(geomagn.) event
 - Satellite: GPS and remote sensing (not: communication)
 - Only secondary effects



Outcome/consequences

- CME event brought to the public by media....
 - No coordinated government response...
- 'Before': hoarding (supermarkets, petrol)
- 'After' (disruption of GPS & remote sensing)
 - Physical safety
 - Fatalities/injured
 - Lack of basic needs
 - Economic losses: mitigation, recovery, replacement
 - Almost every vital economic sector affected (cascading)
 - Disruption of everyday life
 - Socio-psychological impact





What it brought us.....+ 'to do'

- Satellite disruption and solar storms: no SF anymore
- 'Qualified' as a threat to National Security
- Interdependencies (cascading effects), first and secondary order effects
- A network of relevant parties

But.....

- 'Unknowingly incompetent'.....'knowingly incompetent'?
- Upgrade our insights and knowledge (first order effects)
- Establish an alert (communication/warning) system
- Establish guidelines for hardening & procedures?
- Alternatives for satellite signals (time and location)



Follow-up

- Development of a monitoring & alert system
 - One focal point
 - 3 options
 - Use of an existing alarm-structure?
- Research on secondary order effects
 - Ministry of Infrastructure & the Environment
 - Operational effects within vital sectors
 - Started with a brochure (“space weather & impact”) for vital economic sectors
 - Ideas for alternatives (time and GPS)
- Research on first order effects
 - Ministry of Economic Affairs)
 - + relevance remote sensing