Identifying the benefits of Earth observation and application of the data in preparing for and responding to oil spills
Surveillance Tools

Figure 1: Examples of surveillance tools that may be used in a response operation

- Satellite
- Helicopter
- Rotary UAV
- Fixed-wing UAV
- Aircraft
- Onshore observers
- Wave glider
- Manned surface vessel
- Buoy
- Tethered balloon system (aerostat)
- UUV/AUV
- ROV
Why use satellite imagery in a response?

- Accepted and integral component of effective oil spill response (JIP)
- Provides strategic information
- ‘Another tool in the tool box’
  - Different scales
  - Complementary role
- Wide Coverage
- Guides aerial surveillance
- Validates trajectory oil spill modelling
- Keeps field team out of harm
- Capabilities developed significantly = technology now meeting industry needs i.e. timely response
- Weather Independent

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How radar satellite imagery detects oil on the sea surface

- **SLICK**: Oil slicks cause the ocean surface to be smooth, which reduces the radar return.
- **WAVES**: The ocean surface roughness depends on wind speed and waves; generally, returns are brighter than oil slicks.
- **PLATFORM**: Platforms and ships produce strong radar returns.
- **Bright Targets**:
Key features:

- Outlined/digitized oil slick features
- Estimations of oil slick areas
- Identification of assets and/or response operations
- Identification of false alarms.
Oil Spill Detection / Monitoring Programme

- Monitor area at risk
- Monitor during specific time periods
- Provide initial alert of possible oil spill
IPIECA-IOGP Good Practice Guides
(oilspillresponseproject.org and on the IPIECA website)

THANK YOU