OIL AND DIESEL SPILL DETECTION
NNTC is a UAE-based IT consultancy, software development, and training company. We focus on innovations and digital transformation projects.

NNTC’s strategic alliances with the two international systems integrators – NGN and CROC – are aimed at competence exchange, IT solution portfolio expansion, and implementation of joint projects to reduce costs of customers operating across different regions of the Middle East.
INNOVATIVE OIL AND DIESEL SPILL DETECTION

Detects both oil and diesel

Oil can be detected on the water and on the beaches

Day and night detection in real time

Rough and calm waters

Lightweight sensors (from 300 grams only)

Stationary, drone and handheld options
PODS

Continuous monitoring system for stationary applications

- Scalable system for multiple sensors
- Monitors defined areas 24x7
- Detects, alerts and tracks oil spills
- Estimates spill areas

When oil is detected within a zone, the user is alerted
DRONE-BASED OIL-SPILL DETECTION

- Real-time Video/Data Streaming
- Autonomous Flights with area scans
- One-Click Reporting of Detected oil spills
- Single Person Operation

OSCAR Report
Drone Serial Number: 122
Date and Time: August 20, 2019 - 1:15 PM
GPS Location: 34.70° N 86.58° W
Altitude: 47m MSL
Heading: E

Notes:

Pylos Image
Visible Image

INNOVATIVE TECHNOLOGY COMPANY
Regular thermal (LWIR) cameras can see only the light intensity.

Polarization is another property of light.

Different materials reflect and emit the light with different polarization – this is especially visible for films on the surfaces, like oil and diesel on water.

So, we can differentiate clear water from the oil spills on the water by measuring the polarization of the light.

**BUT HOW?**
Pixys Polarimeter uses traditional LWIR microbolometer sensor

Coupled with pixelated filter with pixels filtering four unique polarizations

Such 2x2 super pixels capture all polarization and intensity information at the same time and in real-time, like traditional camera

Special software can then build both thermal and polarization images, as well as combined eTherm enhanced image
SO, HOW IS OIL SEEN WITH PYXIS?

- Natural oil seep
- Sun glint
- Surface wellings
- Kelp forest
- Oil spill

Aerial Image
Santa Barbara, CA, USA
Natural oil seep
SO, HOW IS OIL SEEN WITH PYXIS?

DIESEL IN A TECHNICAL POOL
SO, HOW IS OIL SEEN WITH PYXIS?

BOTH DIESEL AND OIL IN A TECHNICAL POOL

Crude oil 1
Crude oil 2
Diesel

VISIBLE  THERMAL

POLARIZATION  eTHERM
SO, HOW IS OIL SEEN WITH PYXIS?

EMULSIFIED OIL IN WATER

Visible
Thermal
Polarization
eTherm
SO, HOW IS OIL SEEN WITH PYXIS?

BEACH TEST

Oiled rock
Oil on water
Oiled sand
Clean water

VISIBLE

THERMAL

POLARIZATION
eTHERM
SO, HOW IS OIL SEEN WITH PYXIS?

Boat berth disaster and sunken boat location
SO, HOW IS OIL SEEN WITH PYXIS?

DAY AND NIGHT DETECTION

<table>
<thead>
<tr>
<th>Day</th>
<th>Visible</th>
<th>Thermal</th>
<th>Polarization</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thick Oil</td>
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<td></td>
<td></td>
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<tr>
<td>Thin Oil</td>
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<table>
<thead>
<tr>
<th>Night</th>
<th>Visible</th>
<th>Thermal</th>
<th>Polarization</th>
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THANK YOU