

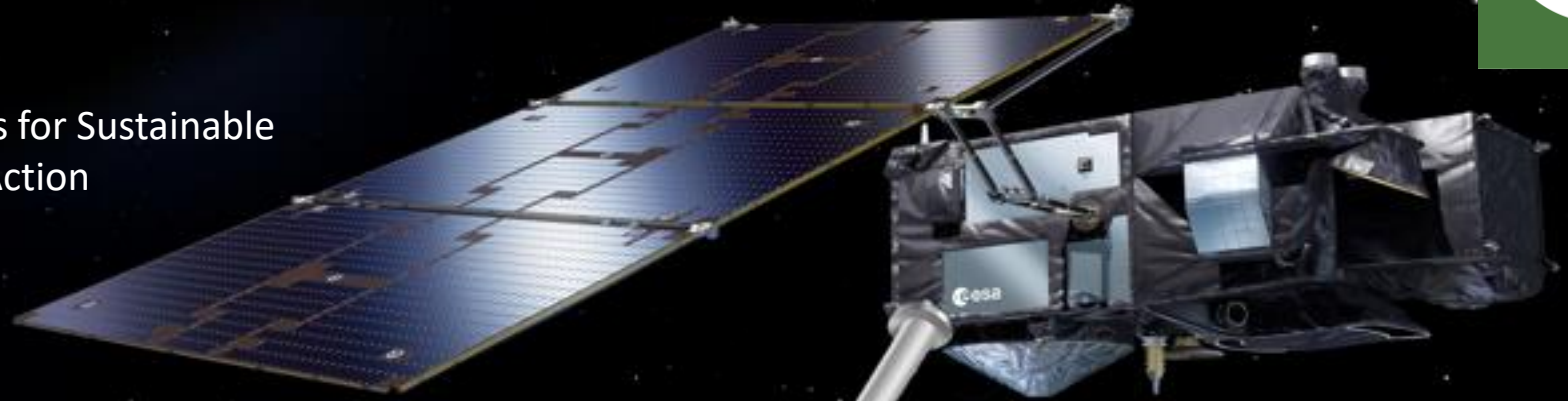
# DEVELOPING A DENGUE OUTBREAK PREDICTION MODEL IN A SMART CITY PLATFORM

13 CLIMATE  
ACTION



UN/Austria Symposium "Space Applications for Sustainable  
Development Goal 13: Climate Action  
1st September 2020

*Ana Cristina Galhego Rosa*  
DIPTERON UG Founder & CEO



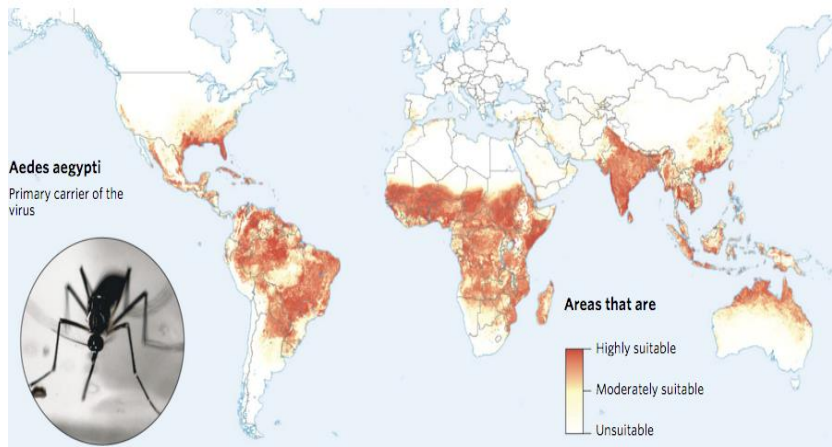
Certificate of Achievement  
First Place  
Business Innovation and IT  
SAP® Mobile App Competition



# PROBLEM

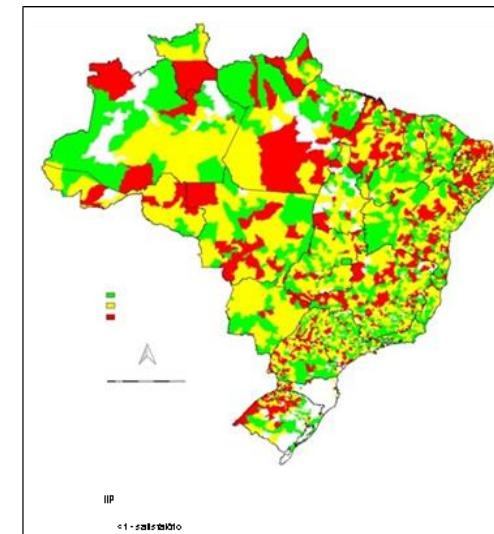
## CLIMATE IS ONE IMPORTANT DRIVER OF THE CURRENT DISTRIBUTION AND INCIDENCE OF DENGUE

### THE GLOBE



- 40% of diseases
- 50 million/year people infected
- 148 countries at risk
- US\$ 39.3 billion (annual global cost)

### BRAZIL (2019)



1.4 million dengue cases  
500 million costs

### CITIES

- 5.214: in monitoring
- 2.160: alert
- 994: high infestation i

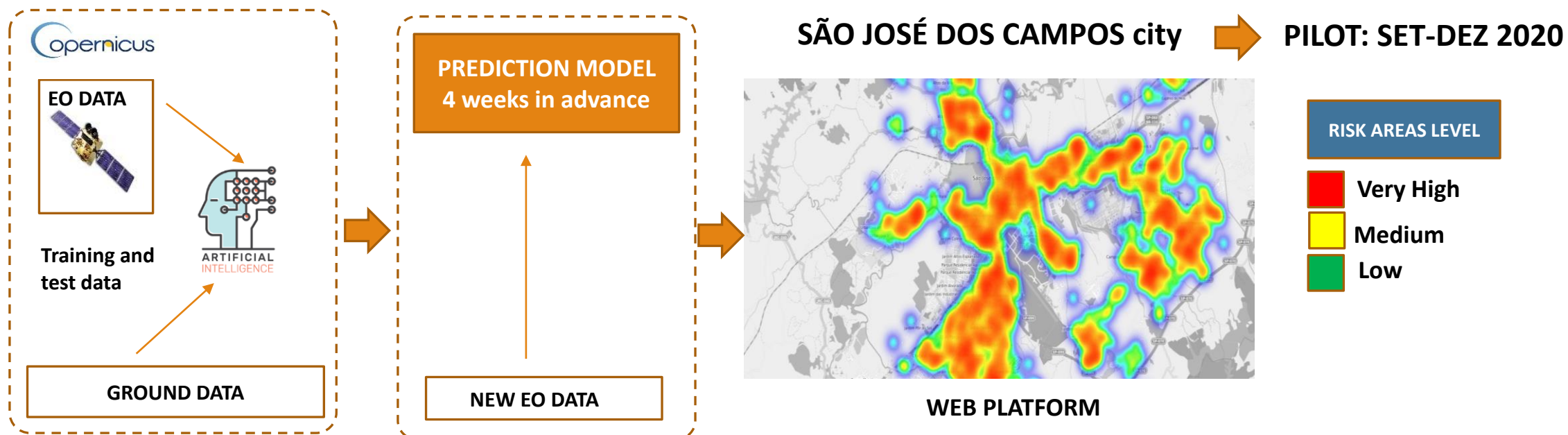
↑ 339,3%



# SOLUTION: DIPTERON PLATFORM



## EARLY WARNING SYSTEM FOR DENGUE OUTBREAKS



## MITIGATION ACTIONS FOR GOVERNMENTAL & NON-GOVERNMENTAL ORGANIZATIONS



# DIPTERON AT SMART CITY WebVis PLATFORM

## SATELLITES AVAILIABLE



**FULLY PROCESSED IMAGES**  
(accurated, mosaized, balance color, etc.)  
media, high & very high spatial resolution imagens



**OPEN GEOSPATIAL CONSORTIUM (OGC)**  
FORMAT THROUGH CLOUD SERVICES



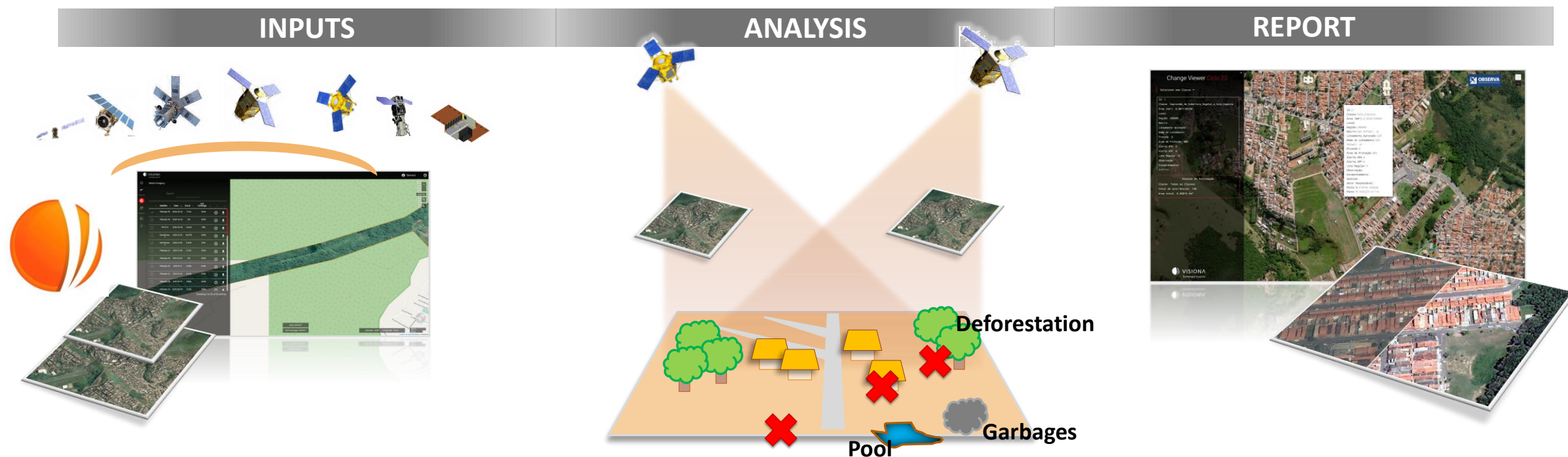
**100% CLOUD**  
**INFRASTRUCTURE**

**AIRBUS**

**MAXAR**



# SMART CITY WebVis PLATFORM



## WebVis Platform:

- Basemaps: OpenSreetMap, Sentinel-2Cloudless, etc
- Streaming: New & previous images before downloading
- Download options: JPEG2000, GeoTIFF, etc.

## Analysis:

- Semi automatic
- Validation of Changes
- Analysis within 48 hours

## Reports:

- Email alerts (*shapefile* and *kml*)
- VISIONA *Change Viewer*
- Monthly consolidated in PDF



# DIPTERON SERVICES AT SMART CITY WebVis PLATFORM

## Colônia Paraíso Cemetery (Morumbi) – São José dos Campos, Brazil

Pléiades 1B Image in 31.10.2016



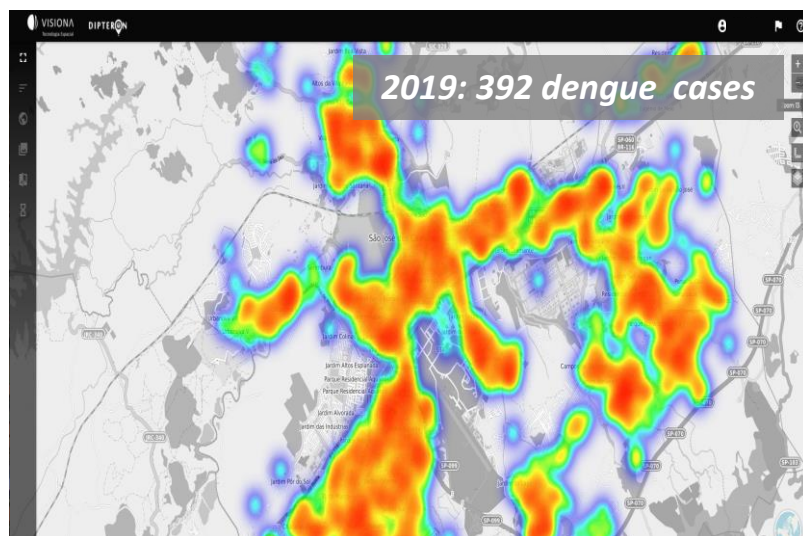
Pléiades 1B Image in 21.07.2020



### Comparative Analysis of Years

**ADVANTAGES:** more accurate results, saves times and public resources

**OVERVIEW:** [https://youtu.be/5T\\_39DYjO4Y](https://youtu.be/5T_39DYjO4Y)



### SERVICE INFORMATION:

- Advance localization of outbreaks
- Visualization of potential breeding sites
- Access number of cases in areas
- Yearly comparative analysis

# THANK YOU!



## DIPTERON UG

Robert-Bosch-Str. 7  
64293 Darmstadt  
GERMANY

[www.dipteron.com](http://www.dipteron.com)

[info@dipteron.com](mailto:info@dipteron.com)

+49 151 57481664



## VISIONA SPACE TECHNOLOGY

Estrada Dr. Altino Bondensan, 500  
Distrito de Eugênio de Melo  
CEP: 12247-016 São José dos Campos  
BRAZIL

[www.visionaespecial.com.br](http://www.visionaespecial.com.br)

[contato@visionaespecial.com.br](mailto:contato@visionaespecial.com.br)

+55 12 21385801

*Ana Cristina Galhego Rosa, Founder & CEO at DIPTERON, [anacristina.rosa@dipteron.com](mailto:anacristina.rosa@dipteron.com)*

*Cleber G. de Oliveira, Head of Contracts & Business at VISIONA, [cleber.oliveira@visionaespecial.com.br](mailto:cleber.oliveira@visionaespecial.com.br)*

*Thiago Gonçalves Rodrigues, Sales Engineer at VISIONA, [thiago.rodrigues@visionaespecial.com.br](mailto:thiago.rodrigues@visionaespecial.com.br)*