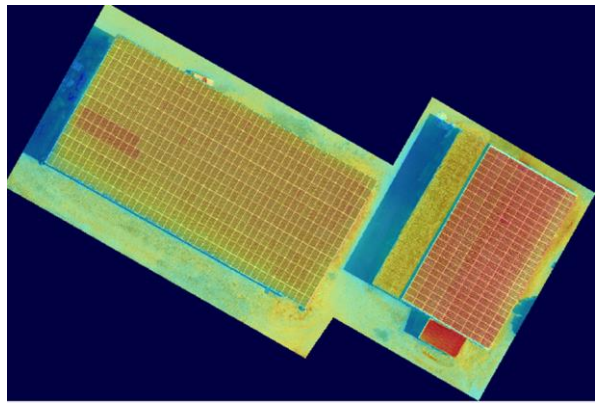
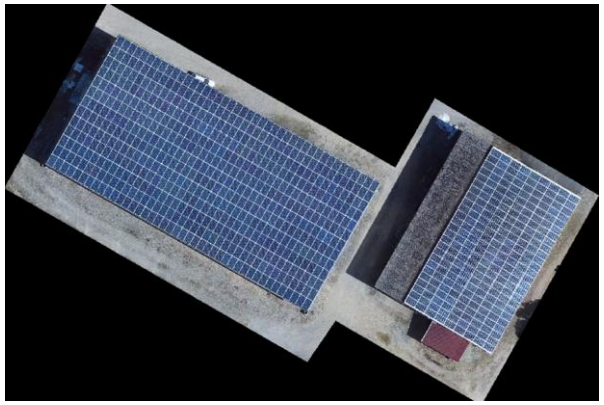
ASPIRE: IA Diagnostic TOOLS

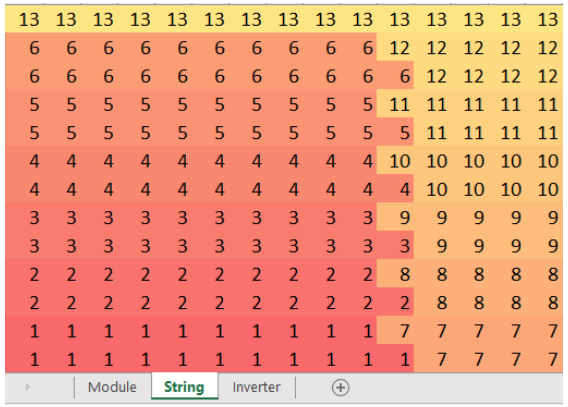
- **Inputs:**
  - RGB and Infra Red Picture of PV Plants
  - Electrical architecture
  - Technicals caractéristics of PV Plants (tilt, module type, etc..)



Infra Red PV Plant Picture



RGB PV Plant Picture



Electrical Architecture

OWNER

- **CEA-INES**

ASSOCIATED PROJECT

- **SERENDI PV**

SOFTWARE NAME

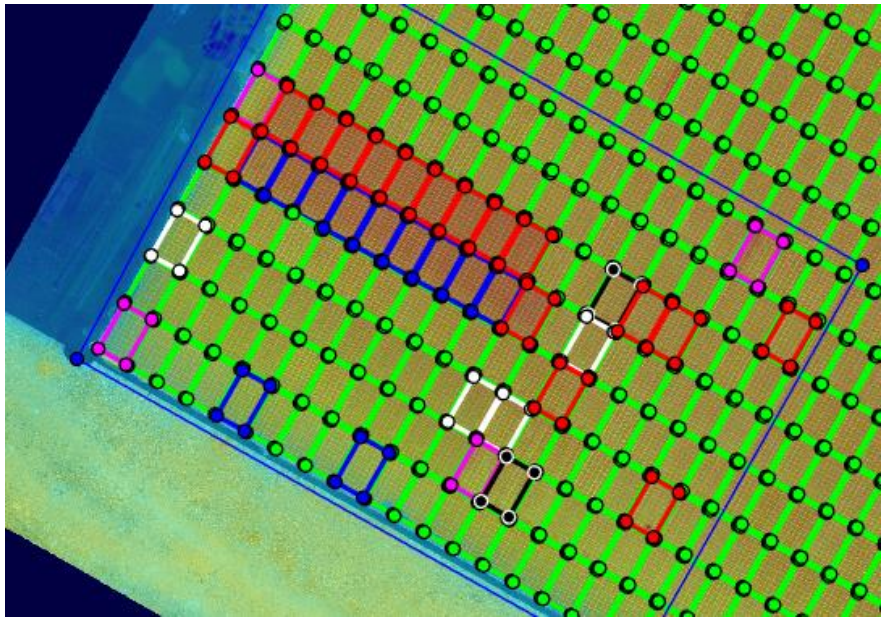
- **ASPIRE**

SOFTWARE TYPE

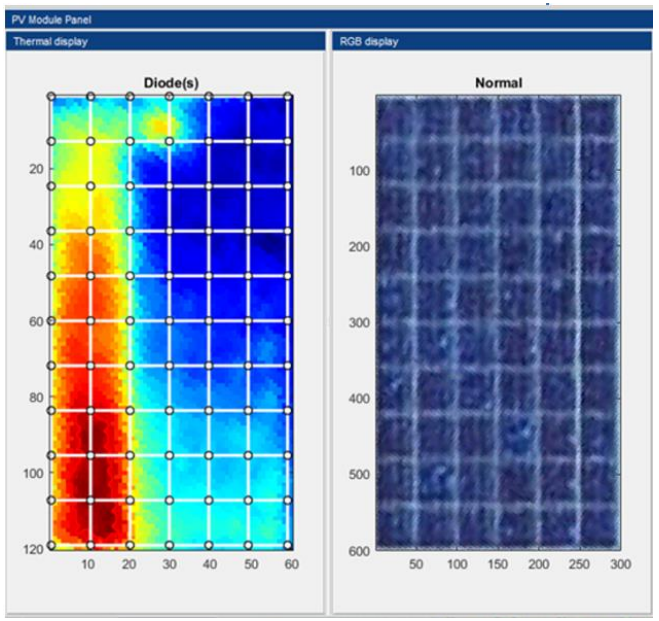
- **Artificial Intelligence**
- **Diagnosis for PV plants**
- **Detection of faults**
- **Classification of faults**
- **Estimation of losses**

ASPIRE: FAULTS DETECTION AND CLASSIFICATION

- **Faults type detected:**
  - Hot spot, By pass Diode, disconnection PV module, PID, etc…
  - Soiling type and aera



Fauts Detection on a PV Plant (one color for each type of defect)



PV Module with Bypass Diode Fault

OWNER

- **CEA-INES**

ASSOCIATED PROJECT

- **SERENDI PV**

SOFTWARE NAME

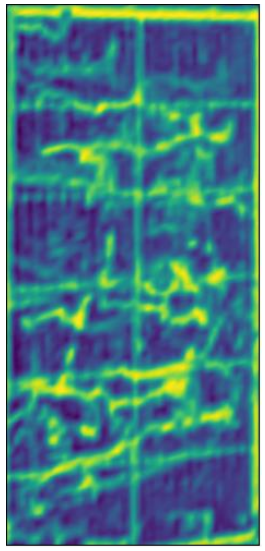
- **ASPIRE**

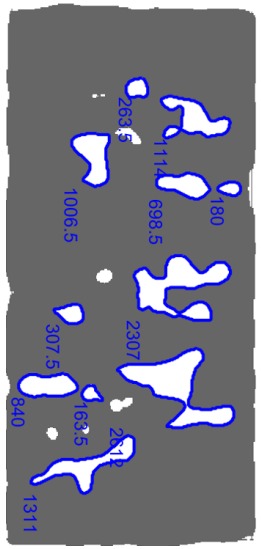
SOFTWARE TYPE

- **Artificial Intelligence**
- **Diagnosis for PV plants**
- **Detection of faults**
- **Classification of faults**
- **Estimation of losses**

ASPIRE: FAULTS DETECTION AND CLASSIFICATION

- **Faults type detected:**
  - Hot spot, By pass Diode, disconnection PV module, PID, etc…
  - Soiling type and aera





Detection of Bird Soiling

OWNER

- **CEA-INES**

ASSOCIATED PROJECT

- **SERENDI PV**

SOFTWARE NAME

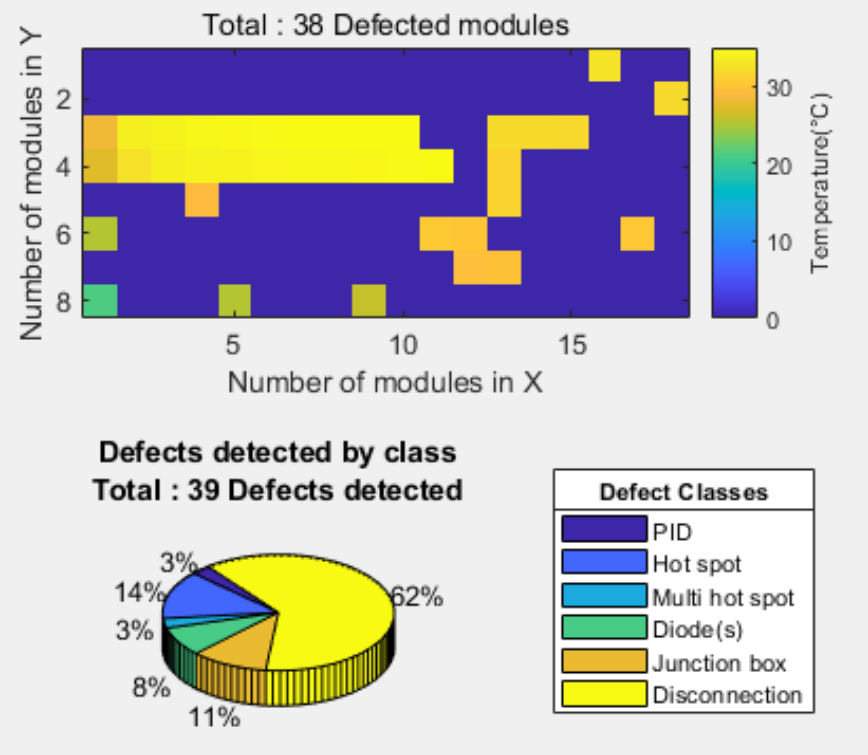
- **ASPIRE**

SOFTWARE TYPE

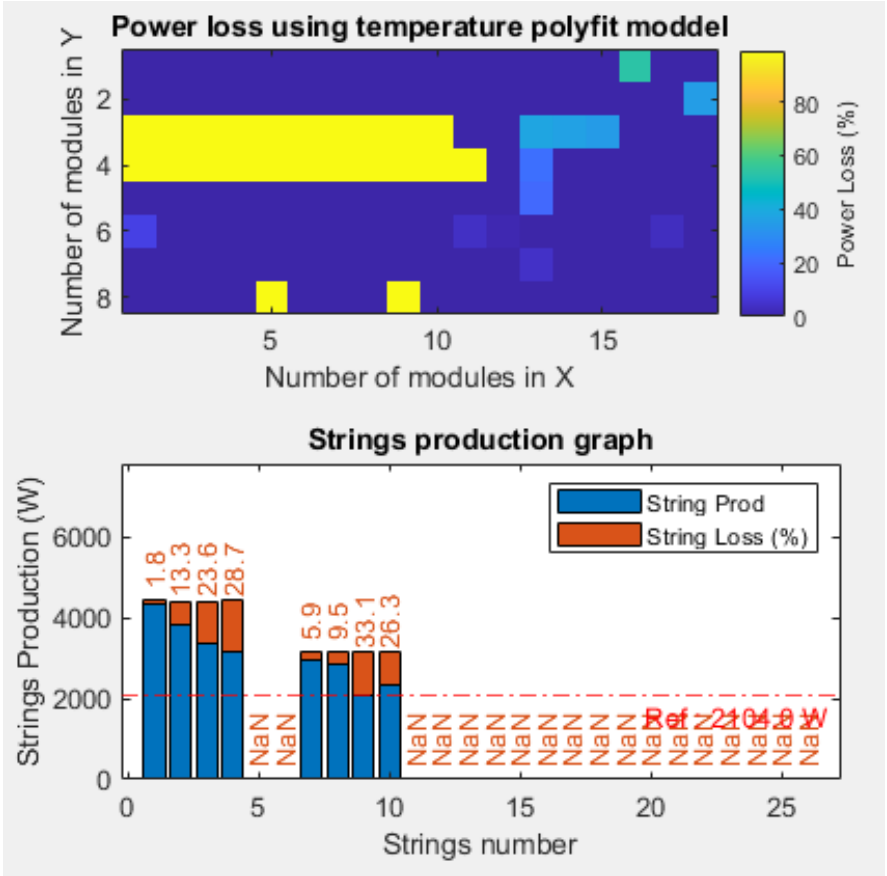
- **Artificial Intelligence**
- **Diagnosis for PV plants**
- **Detection of faults**
- **Classification of faults**
- **Estimation of losses**

ASPIRE: PV Plant Loss Estimation

- **Loss type detected:**
  - PV Plant Loss
  - Converter Loss
  - String Loss



Defects on PV Plant map



Power Loss estimation on PV Plant and Strings

OWNER

- **CEA-INES**

ASSOCIATED PROJECT

- **SERENDI PV**

SOFTWARE NAME

- **ASPIRE**

SOFTWARE TYPE

- **Artificial Intelligence**
- **Diagnosis for PV plants**
- **Detection of faults**
- **Classification of faults**
- **Estimation of losses**