

## FB Eye – Fire Bombing Eye

ESA ARTES 4.0 BUSINESS APPLICATIONS Demonstration Project



16 JUNE 2023

## PROBLEM

### WATERBOMBING ACCURACY

Nowadays the release point is qualitatively eye-assessed by the pilots

### POOR VISIBILITY

Smoke and its propagation prevents pilots from actually seeing the target

### REAL-TIME ASSESSMENT OF WATERBOMBING EFFICIENCY

Assessment of efficiency of aerial firefighting operations is not carried out considering effectiveness of each waterbombing in real time



# PROBLEM

## ENVIRONMENTAL DAMAGE CAUSED BY WILDFIRE

The incidence and extent of forest fires are among the immediate consequences of climate change, generating deforestation, toxic emissions from soil and groundwater contamination

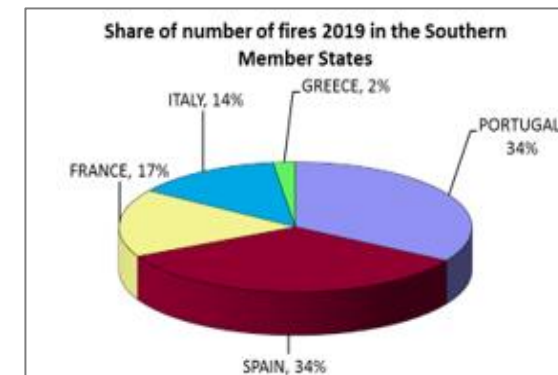
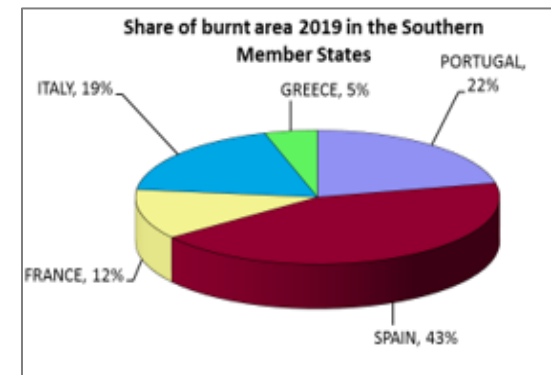
## HUGE OPERATIONS TIME AND COSTS

Nowadays the huge duration of fire extinguishing time causes an increase of burnt areas and costs related to firefighting activities and reforestation



## SITUATIONAL AWARENESS

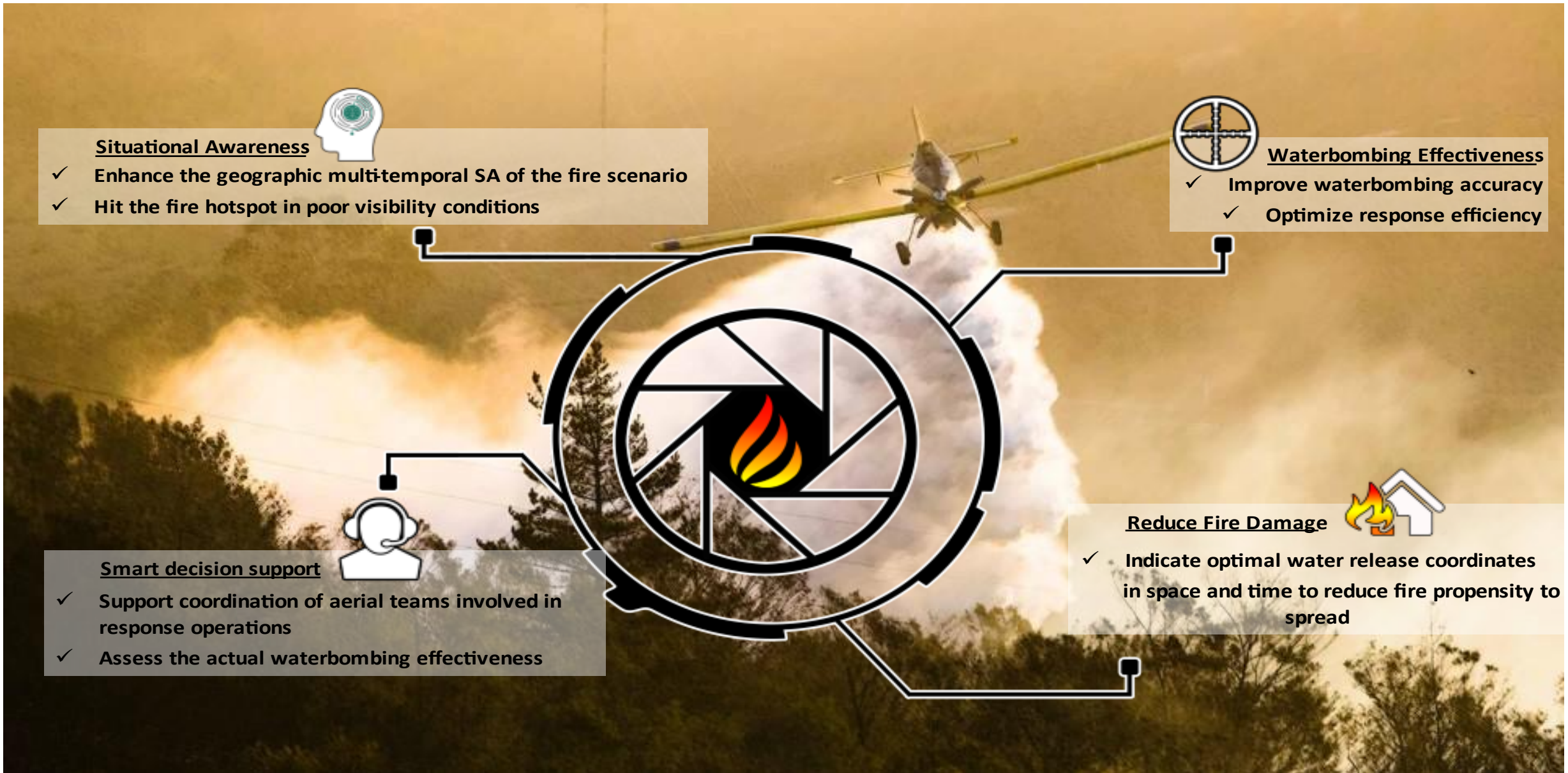
Poor situational awareness causes a lack of safety and efficiency in operations





# SOLUTION

## EXTINGUISH FIRES IN THE BLINK OF AN EYE



### Situational Awareness



- ✓ Enhance the geographic multi-temporal SA of the fire scenario
- ✓ Hit the fire hotspot in poor visibility conditions



### Waterbombing Effectiveness

- ✓ Improve waterbombing accuracy
- ✓ Optimize response efficiency

### Smart decision support



- ✓ Support coordination of aerial teams involved in response operations
- ✓ Assess the actual waterbombing effectiveness

### Reduce Fire Damage



- ✓ Indicate optimal water release coordinates in space and time to reduce fire propensity to spread

**COMMUNICATIONS**

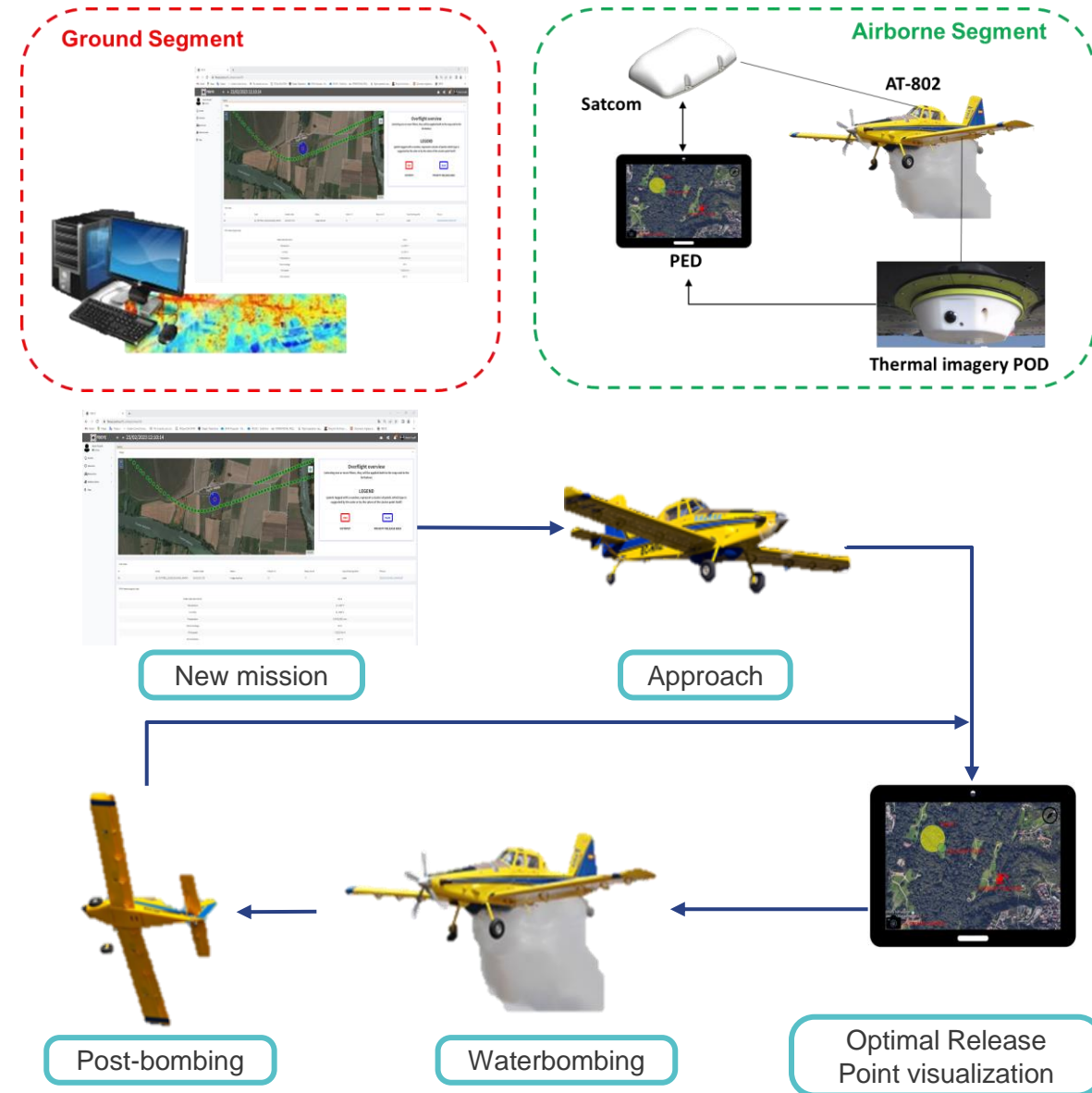
Satellite coverage guarantees uninterrupted uplink/downlink of all parameters of interest to the operation even in remote areas where there is poor or no connectivity

**EASY OPERATOR INTERFACE**

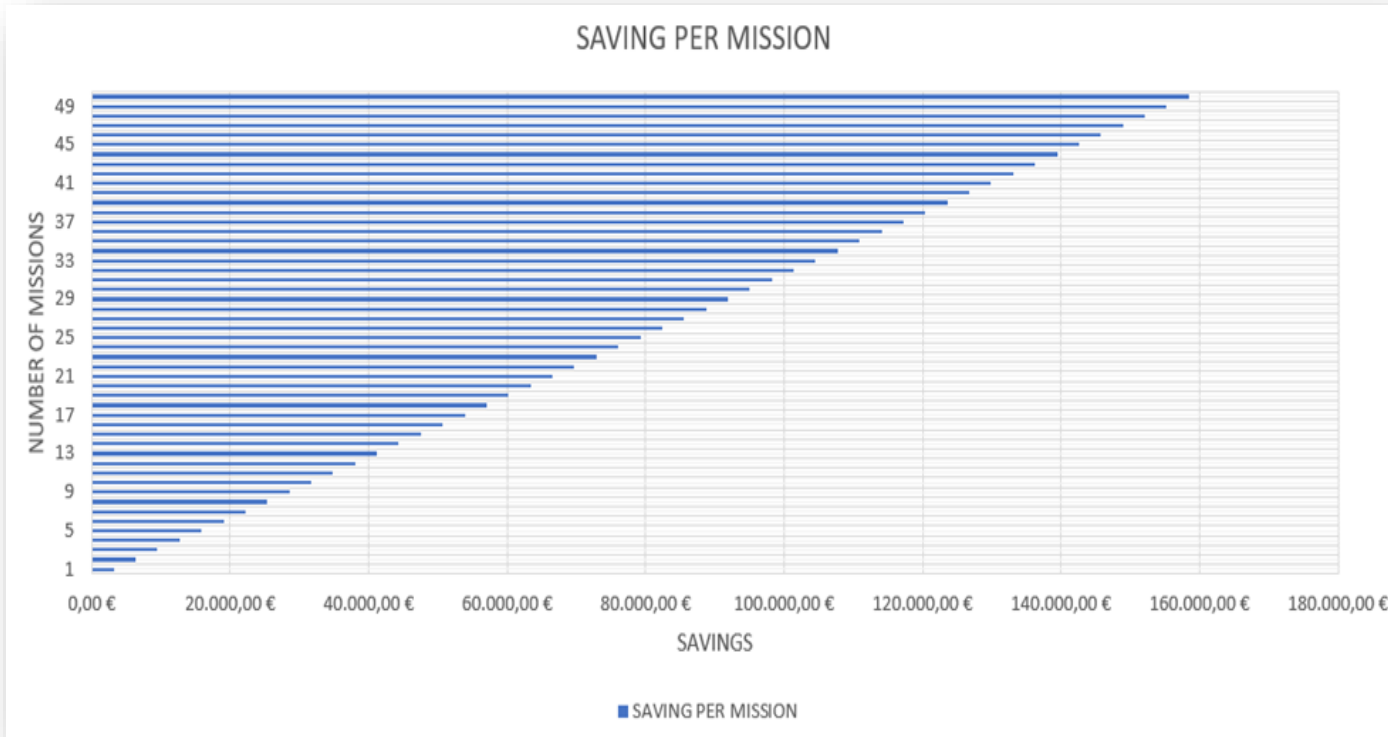
FB Eye waterbombing support tools are integrated into the mission use case through close collaboration with the end user and the development of a simple and intuitive interface

**REAL-TIME DATA INTEGRATION**

- Flight parameters
  - Thermal information
  - Meteorological nowcasting
- } Meter accuracy in hitting the optimal release target to reduce fire spread



FB Eye increases the accuracy of waterbombing, which results in less drops per mission, reducing the man-hours, fuel and maintenance costs of firefighting aircraft.



Tests show a reduction in the number of drops resulting in a cost **saving of 8% per mission.**



# SOLUTION BUSINESS

## Target Markets

TAM

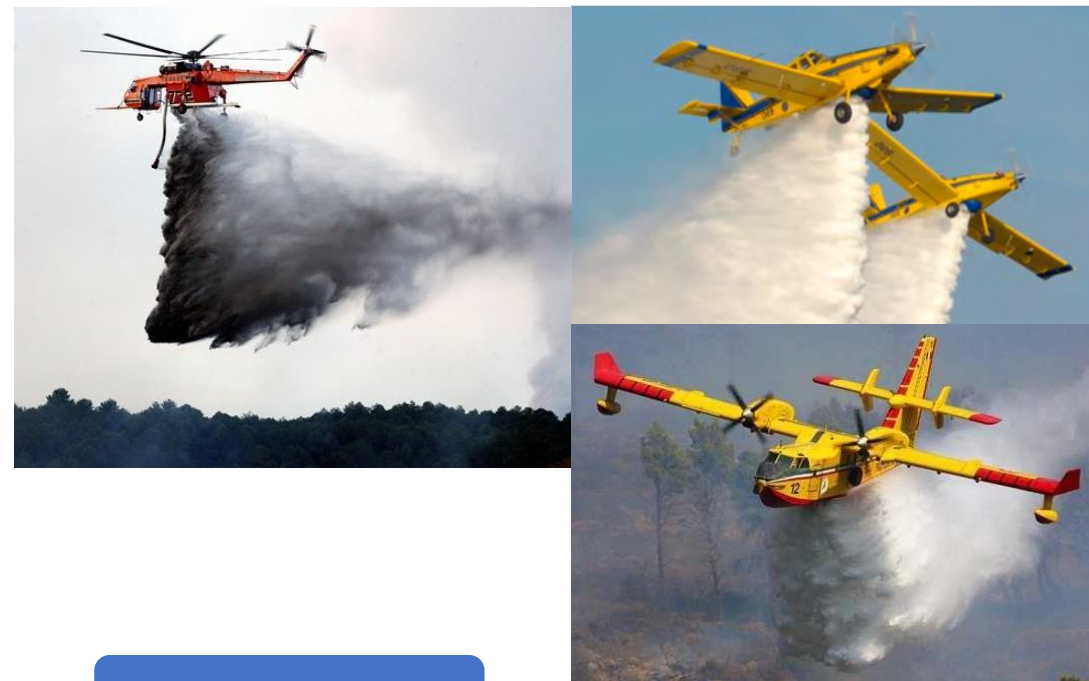
- Worldwide aerial firefighting companies

SAM

- Worldwide aerial firefighting companies exploiting AT-802 aircraft

Target Market (SOM)

- New installations on new AT-802 sales by Air Tractor Europe
- European market for AT-802s sold by Air Tractor Europe to be retrofitted



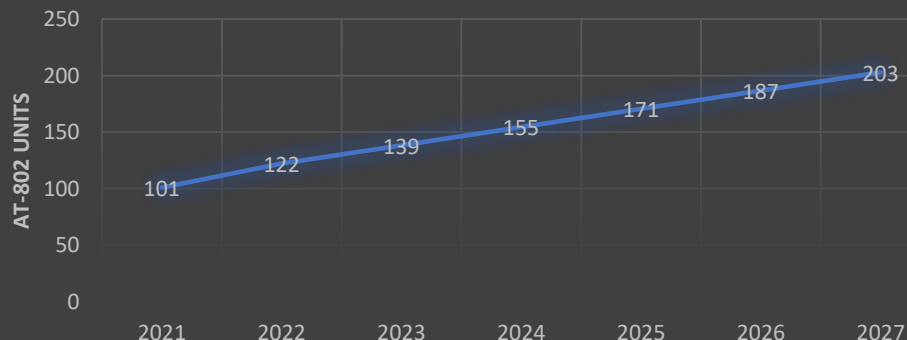
## Channels

The partnership with Air Tractor and Titan guarantees to channel the product in the worldwide firefighting market.

The marketing of the FB Eye platform will benefit from a very powerful preferential sales channel represented by the **ATE sales force**.



## EMEA AT-802 MARKET FORECAST



MAAKE  
TERMA KASIH RAIBH MAITH AGAT  
GRAZIE MULTUMESC  
MERC  
MOCHCHAKKERAM  
JUSPAXAR  
OBRIGADO  
MATONDO  
SALAMAT  
KIITOS  
MOCHCHAKKERAM  
KIA ORA  
MULTUMESC  
CHOKRANE  
SALAMAT  
CAM ON BAN  
MERC  
RAIBH MAITH AGAT  
OBRIGADO  
MOCHCHAKKERAM  
ASANTE  
UA TSAUG RAU KOJ  
MOCHCHAKKERAM  
THANK  
YOU  
GRAZIE  
CHOKRANE  
MATUR NUWUN  
MATONDO  
CHOKRANE  
UA TSAUG RAU KOJ  
DANK JE  
RAIBH MAITH AGAT  
SPASIBO  
MAAKE  
OBRIGADO  
WELALIN  
SPASIBO  
ARIGATO  
MOCHCHAKKERAM  
OBRIGADO  
KIITOS  
DANKON  
NIRRINGRAZZJAK  
MOCHCHAKKERAM  
MULTUMESC  
VINAKA  
NIRRINGRAZZJAK  
MAMANA  
OBRIGADO  
DANK JE