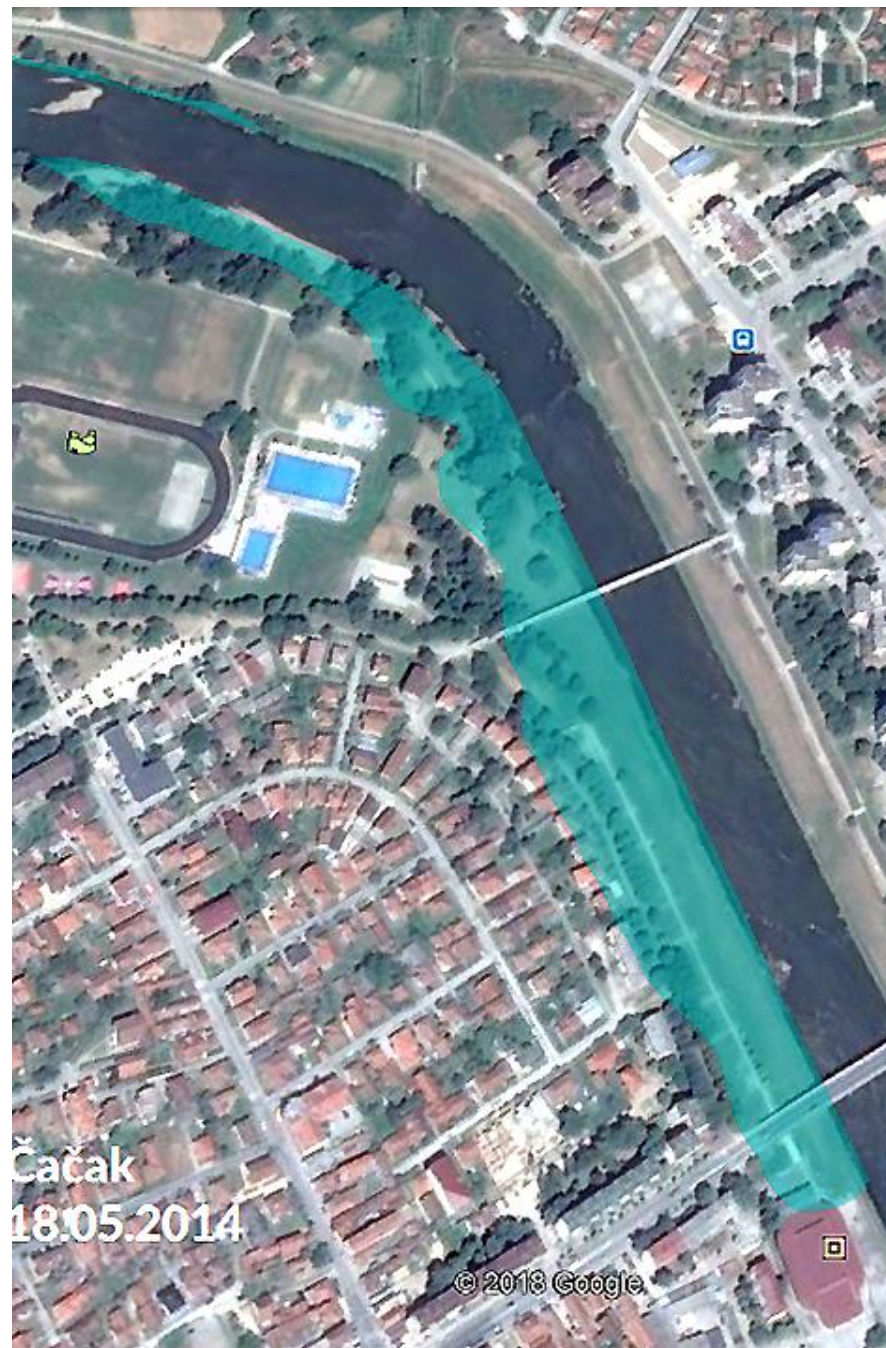

REMOTE SENSING AND DRONE OBSERVATION TECHNIQUES -TOOL FOR THE CLAIM SETTLEMENT

EUROPA RE CASE STUDY

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Claim Management Specialist

*Understanding Risk Balkans Conference, 2018 Belgrade Session: Demystifying
the Growth Drivers of Catastrophe Insurance Market,*



EUROPA RE SHOWCASE OF THE CUTTING EDGE TECHNOLOGIES USE

- EUROPA CLAIM MANAGEMENT
 - Europa RE Claim Solution
 - Elements And Technics of Loss Valuation
 - Serbia flood 2014– Europa RE Experience Gained
- PARAMETRIC FLOOD INSURANCE COVERAGE FOR MUNICIPALITIES:
CLAIM SETTLEMENT
 - Product design
 - Sample zone definition
 - Flood footprint
 - T&C

EUROPA RE CLAIM SOLUTION

CLAIM SERVICES

- Rapid
 - From 3 to 10 days depending on T&C
- Accurate
 - Continuous flood footprint with horizontal accuracy below 1m
 - Earthquake cracks on the walls with accuracy below 1mm
- Transparent
 - All data accessible by Insurance Partners on the web platform

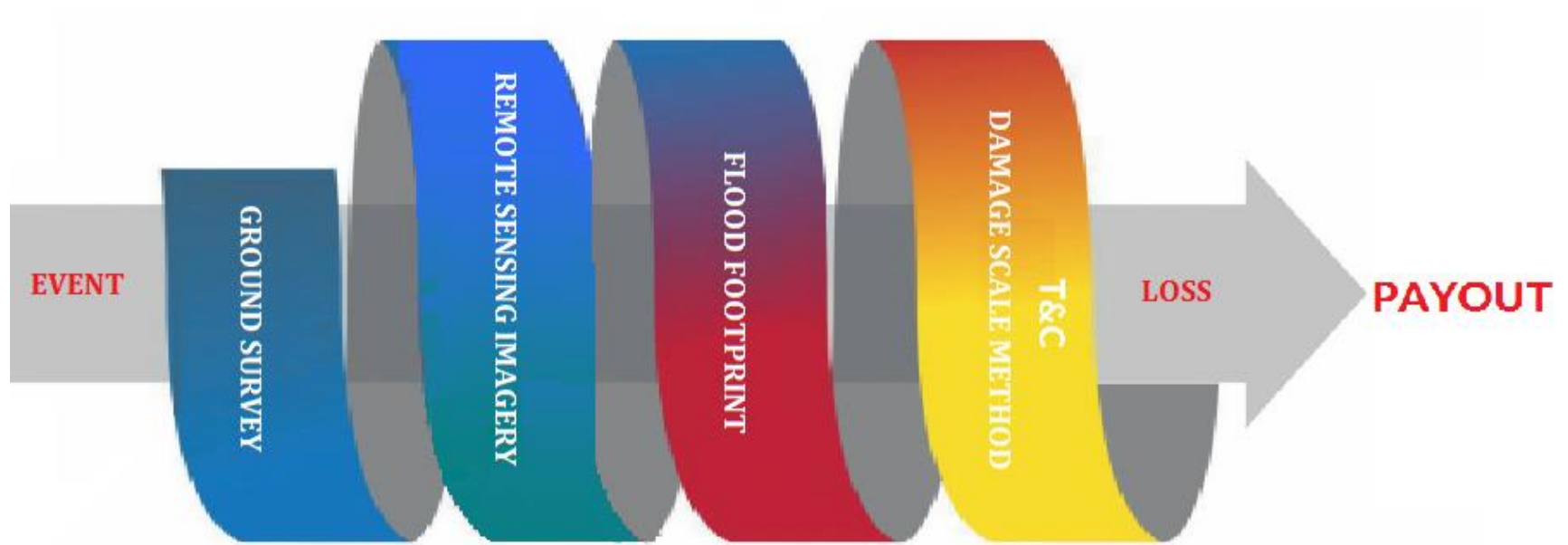
LOSS ASSESSMENT

- Simplified
 - Based on % of flooded zone or magnitude of the earthquake
 - Based on Damage grade as result of damage survey processing
 - Published statistical data of the yields
- Standardized
 - For all products appropriate method of calculation applied
- Embedded in T&C

TOOLS

- IT based data collection, processing, communication & archiving;
- Loss assessment based on local Risk models;
- Use of Remote sensing imagery
 - Satellite
 - Radar
 - Aerial
- Inhouse processing of satellite images.

ELEMENTS AND TECHNIQUES OF LOSS VALUATION



SERBIA FLOOD 2014– EUROPA RE EXPERIENCE GAINED

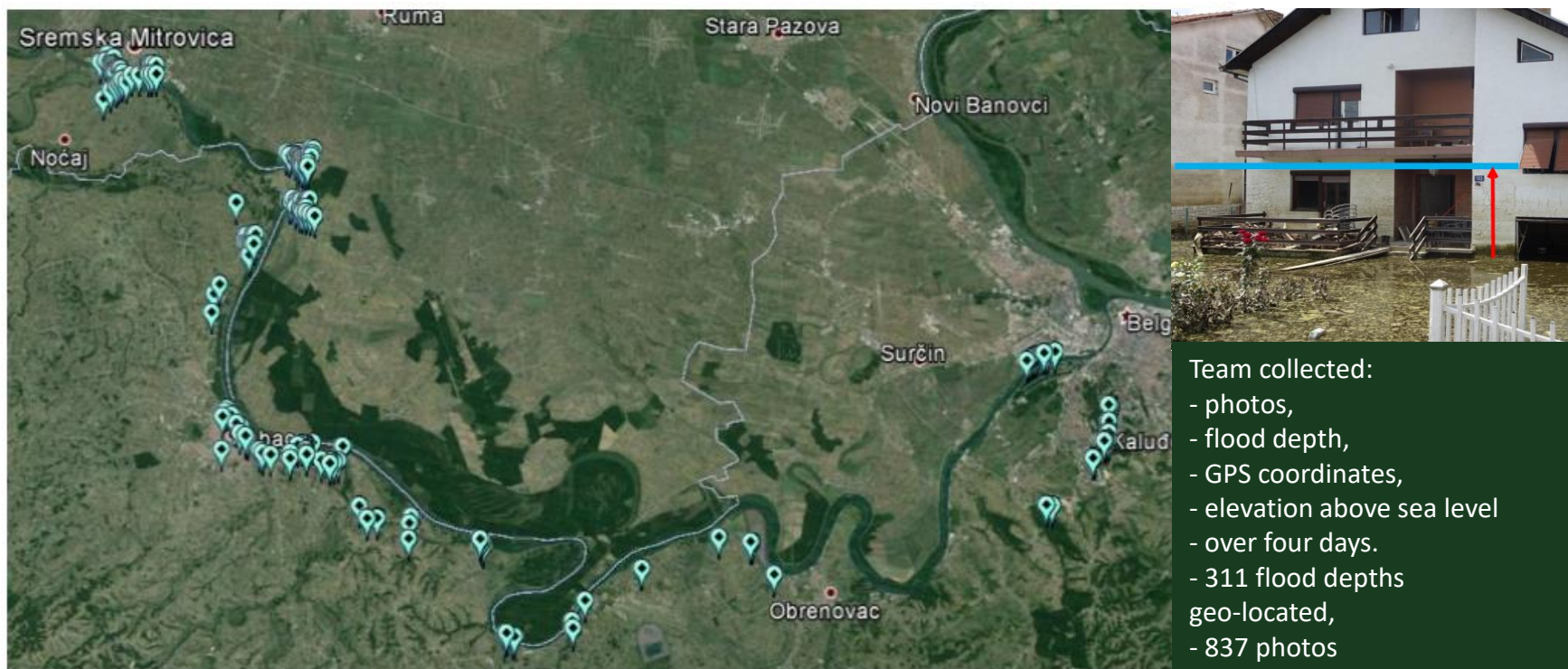
Aerial and satellite imagery collected and evidence of flood impacted regions provided.

There is no better way to delineate the effects of flooding than through aerial photography

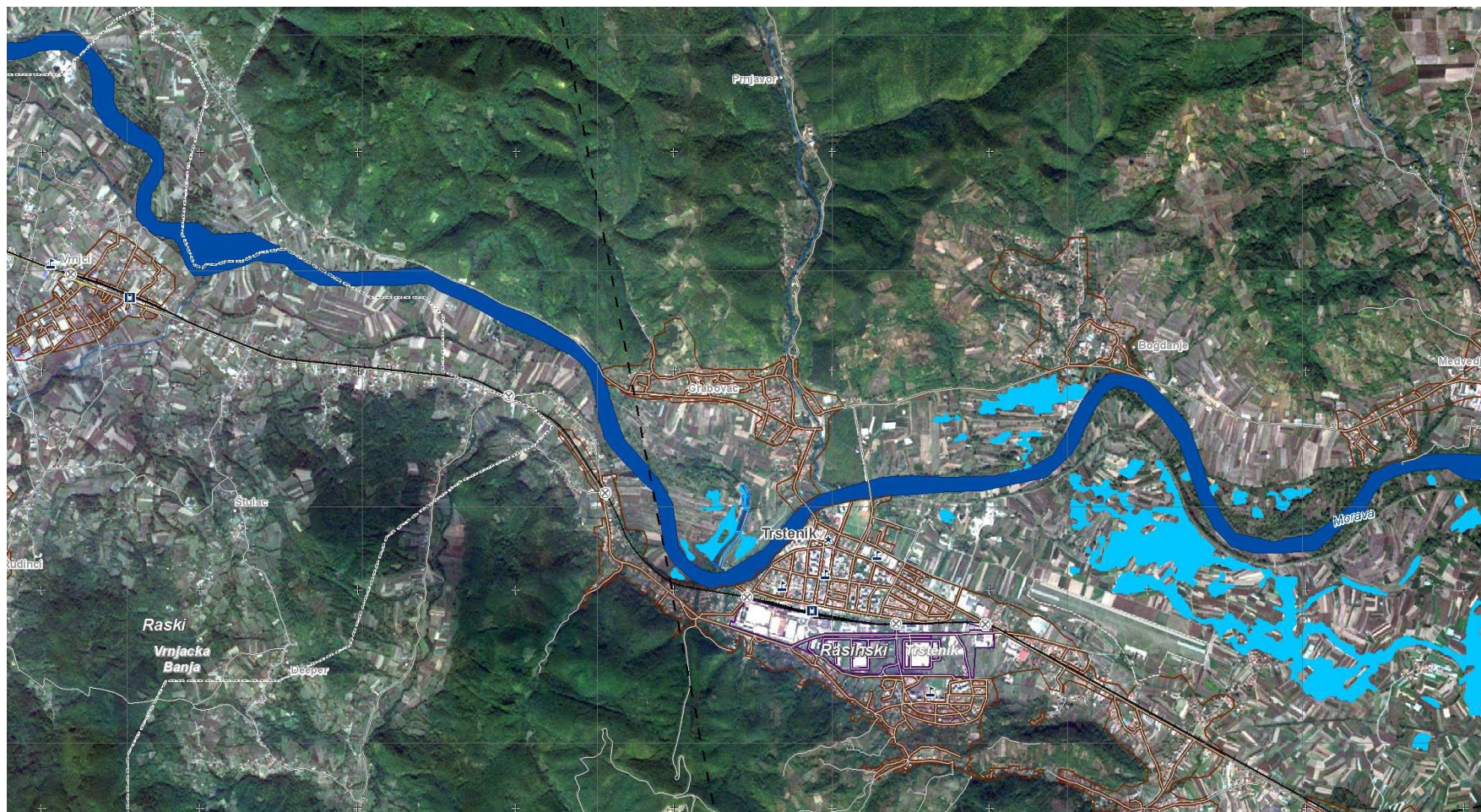


FIELD SURVEYS BY EUROPA RE LOSS ADJUSTERS

Conducted field surveys by loss adjusters and collected ground based photographs of flood impacted buildings and infrastructure after the flooding subsided;



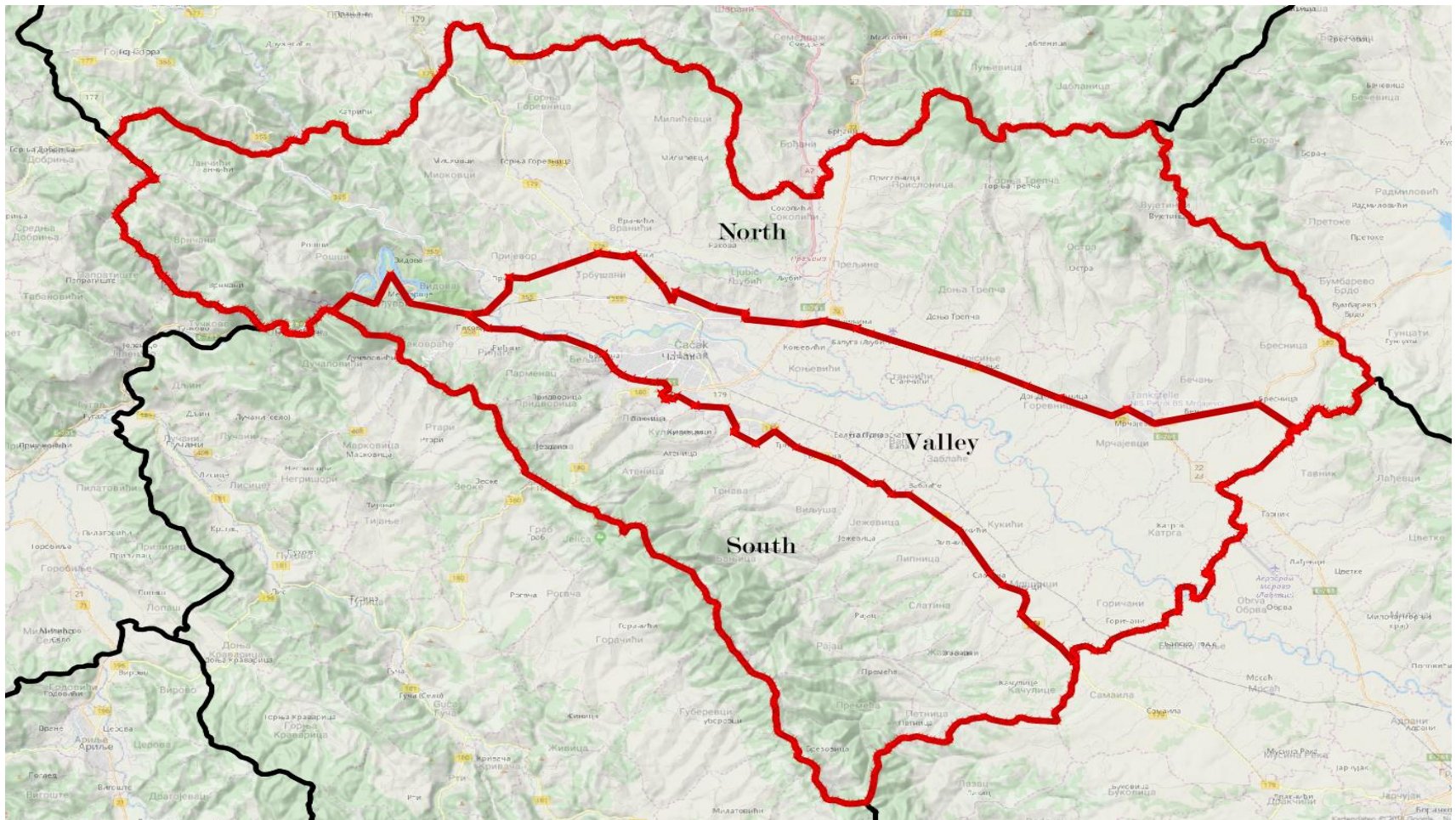
PARAMETRIC FLOOD INSURANCE COVERAGE FOR MUNICIPALITIES: CLAIM SETTLEMENT



PRODUCT DESIGN

- **Objectivity:** Payout based on flood footprint derived from remote sensing data.
 - No direct reference to the physical destruction - no need for building damage assessment.
- **Simplicity:** map area % flooded to payment amount.
- **Transparency:** Europa Re will share remote sensing data with the customer.

SAMPLE ZONE DEFINITION (ČAČAK)



FLOOD FOOTPRINT: 2014 LAKE PALJUVI

18.05.2014



21.05.2014



23.05.2014

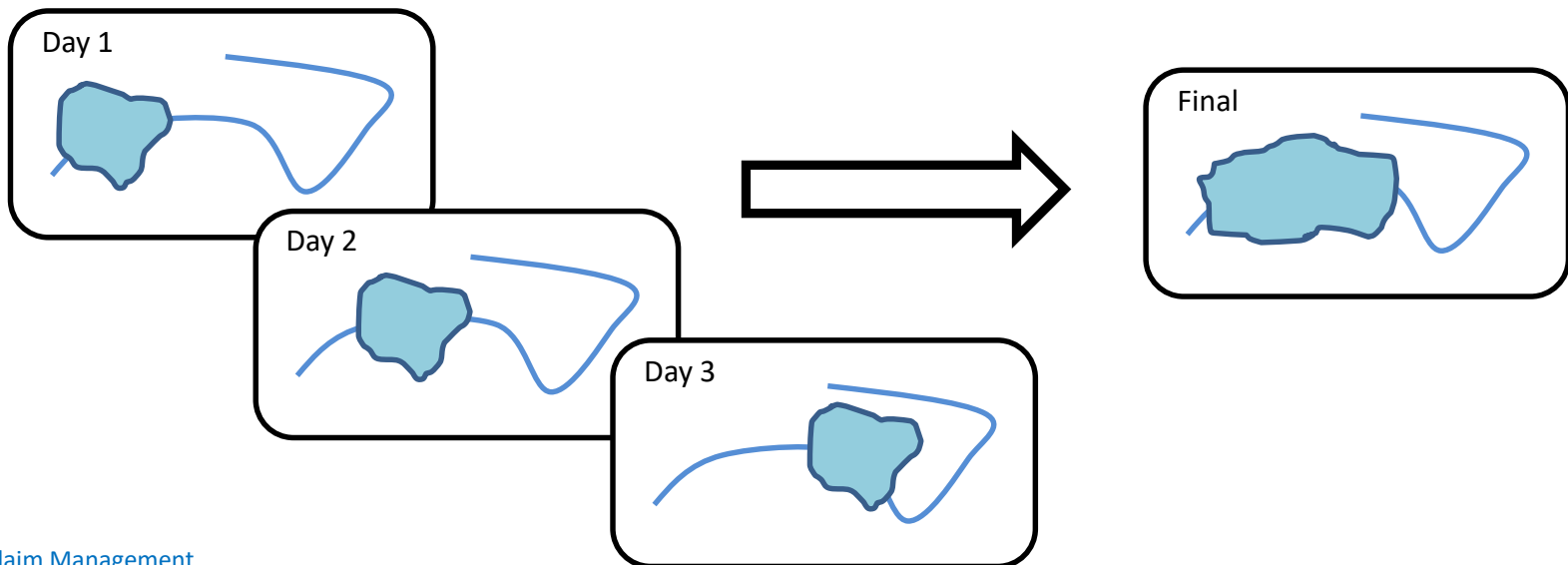


Final Flood Footprint:



FLOOD FOOTPRINT: THE MODEL

- First assessment : optical and radar satellite images.
- Drone supported surveillance if required.
- Daily determination of flood footprint progression.
- The footprint relevant for payout is the union of daily footprints.



WINGTRA EQUIPMENT



Operation

Operational cruise speed	16 m/s (35.8 mph)
Wind resistance	up to 45 km/h (12 m/s, 28 mph) in cruise up to 30 km/h (8 m/s, 18 mph) for landing
Maximum flight time	55 minutes
Min. space for take-off and landing	2 m × 2 m (6.6 ft × 6.6 ft)
Designed Temperature Range *	-20° C to 50° C (-4° F to 122° F)
Ground Control Points required	No (with PPK option)

Results

Coverage at 120m (400ft) **	320 Ha (790 ac)
Max. coverage ***	45 km ² (17 mi ²)
Minimal ground sampling distance ****	Down to 0.7cm / pixel (0.3 inch/pixel)
Mapping accuracy with PPK (w/o GCPs)	Absolute accuracy (RMS): horizontal down to 1 cm (0.4 in) vertical down to 2 cm (0.8 in) Relative accuracy: down to 0.003 % (horizontal)

SAMPLE TARIFF

Zone name	% flooded area of the zone	Pay-out in EUR
	< 5%	0
North	5% to 25%	30.000
North	25% to 35%	40.000
North	35% to 45%	100.000
North	45% to 55%	300.000
North	55% to 65%	750.000
North	> 65%	900.000
South	< 5%	0
South	5% to 25%	40.000
South	25% to 35%	50.000
South	35% to 45%	60.000
South	45% to 55%	90.000
South	55% to 65%	110.000
South	65% to 75%	200.000
South	> 75%	400.000
Valley	< 5%	0
Valley	5% to 25%	175.000
Valley	25% to 35%	300.000
Valley	35% to 45%	500.000
Valley	45% to 55%	800.000
Valley	55% to 65%	950.000
Valley	65% to 75%	3.000.000
Valley	> 75%	7.000.000

PAY-OUT SETTLEMENT

- Sample result of the remote sensing:

Zone name	% flooded in the sample case
North	24%
South	2%
Valley	33%

- Payment calculation:

Zone	Pay-out in the sample case in EUR
North	30.000
South	0
Valley	300.000
Total	330.000

AUTOMATICALLY TRIGGERED CLAIM SETTLEMENT

- **EUROPA RE is responsible for:**
 - Event proclamation.
 - Remote sensing.
 - Verifiable flood footprint determination.
 - Pay-out calculation.

- **Customer benefits:**
 - No need to file a claim.
 - Fast payment.
 - Ability to check the flood footprint calculation based on shared remote sensing data.

CAT MONITOR
FOR SOUTH-EAST EUROPA
AND KAZAKHSTAN

EUROPA Re Ltd.



Albania



Macedonia



Serbia



Kazakhstan

CUSTOMER INFORMATION PORTAL

- **Covered countries**
 - Albania.
 - Macedonia.
 - Serbia.
 - Kazakhstan.

- **Functions:**
 - Individual risk scoring for residential buildings.
 - Earthquake and Flood event information.
 - Historical hazard maps.
 - Alerts and news feeds.
 - Crowd reporting.

BUILDING REPORT

1. Locate Building

2. Building Data

3. Building Risk Report

Risk Rating: Moderately High



Risk Scale: 1 = Low, 2 = Moderate, 3 = Moderately High, 4 = High, 5 = Very High

Medium Hazard and Medium risk: your property is located in an area of medium seismic hazard. Earthquakes have occurred in your area and the chance that your property will experience a ground shaking of significant intensity in its foreseeable life is sizable. If an earthquake of magnitude 5 or larger were to occur in your area, but not in the immediate proximity of the site, your building is expected to suffer moderate to major damage. A more severe level of damage could happen if such an earthquake were to occur in the immediate proximity of your site or if your building is located on soft soil. In this case your building may not be usable possibly for an extended period of time after the event. The adoption of earthquake risk mitigation strategies, including structural retrofitting and earthquake insurance, should be considered.

We advise you to buy an earthquake insurance policy that would cover such severe damages or collapse of the building. To ensure a swift and proper settlement of your insurance claim in the aftermath of catastrophic events we recommend insurance products designed and reinsured by Europa Re - a Swiss reinsurance company, owned by governments of Albania, Macedonia and Serbia, and established with the assistance from the World Bank, Swiss Government, the European Union and the United Nations. Europa Re endorsed insurance products can be obtained only from those insurance companies that have been certified to participate in Europa Re program. These are as follows:



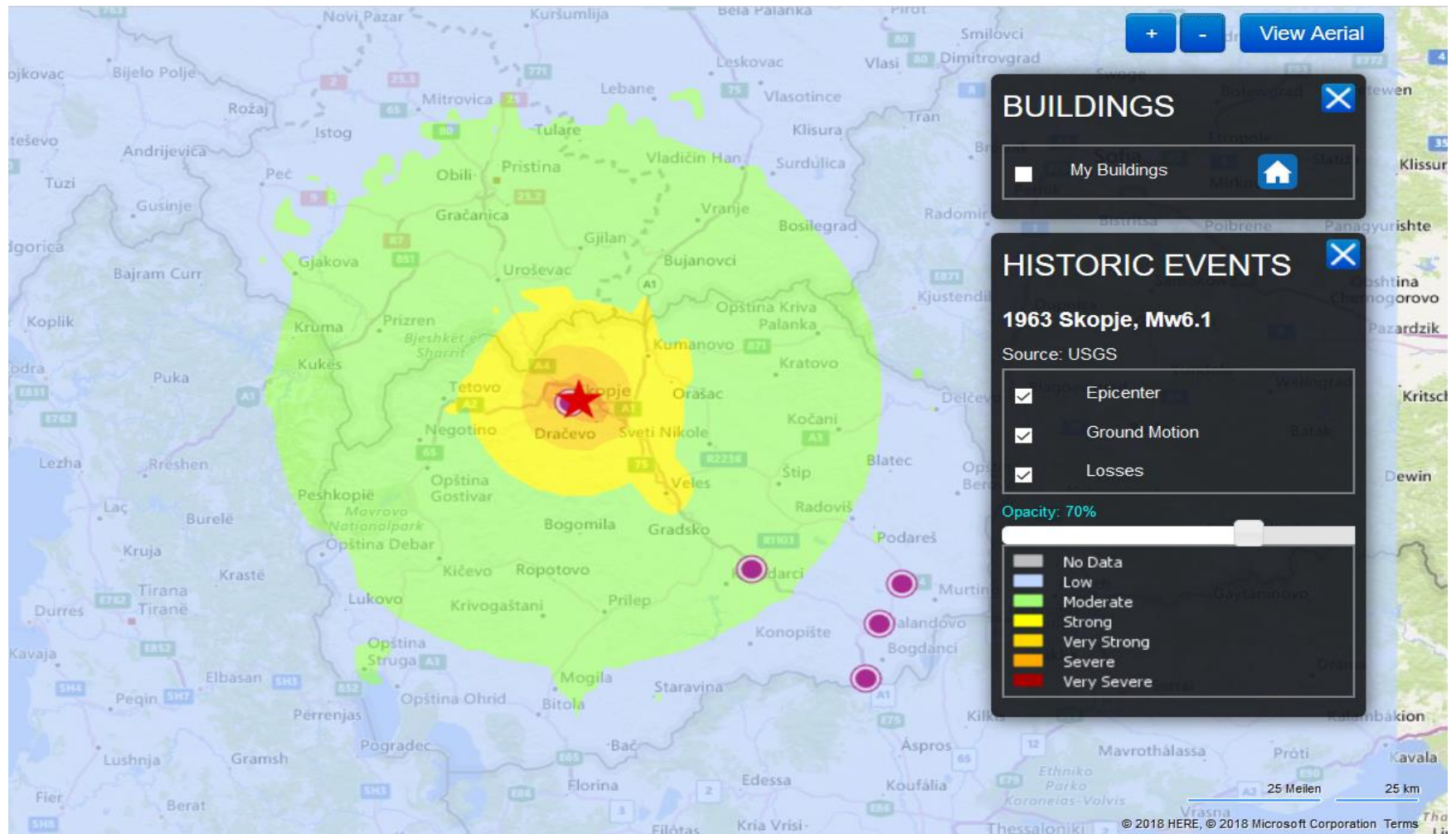
КРОАЦИЈА ОСИГУРУВАЊЕ –

Back

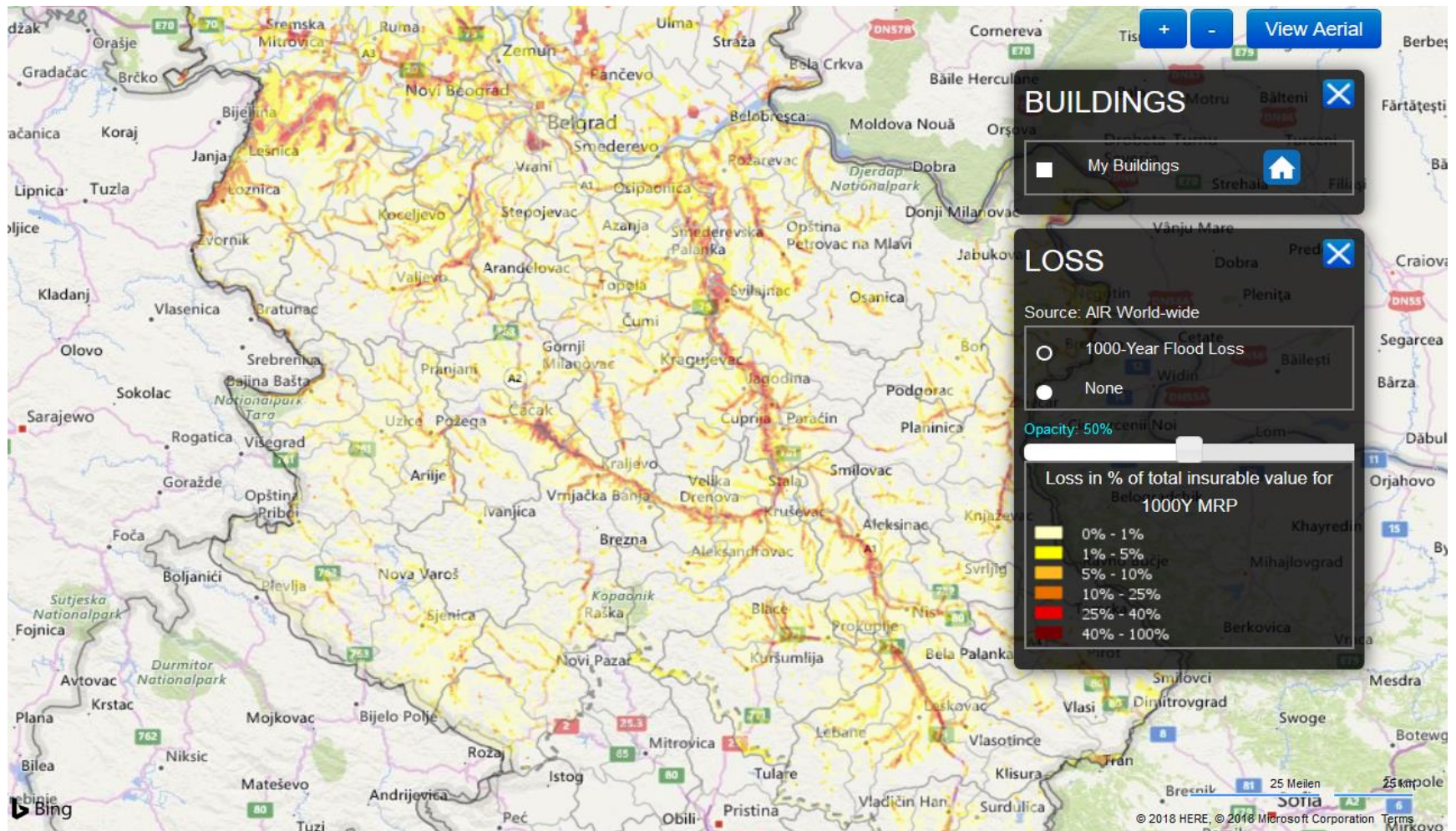
Full Report



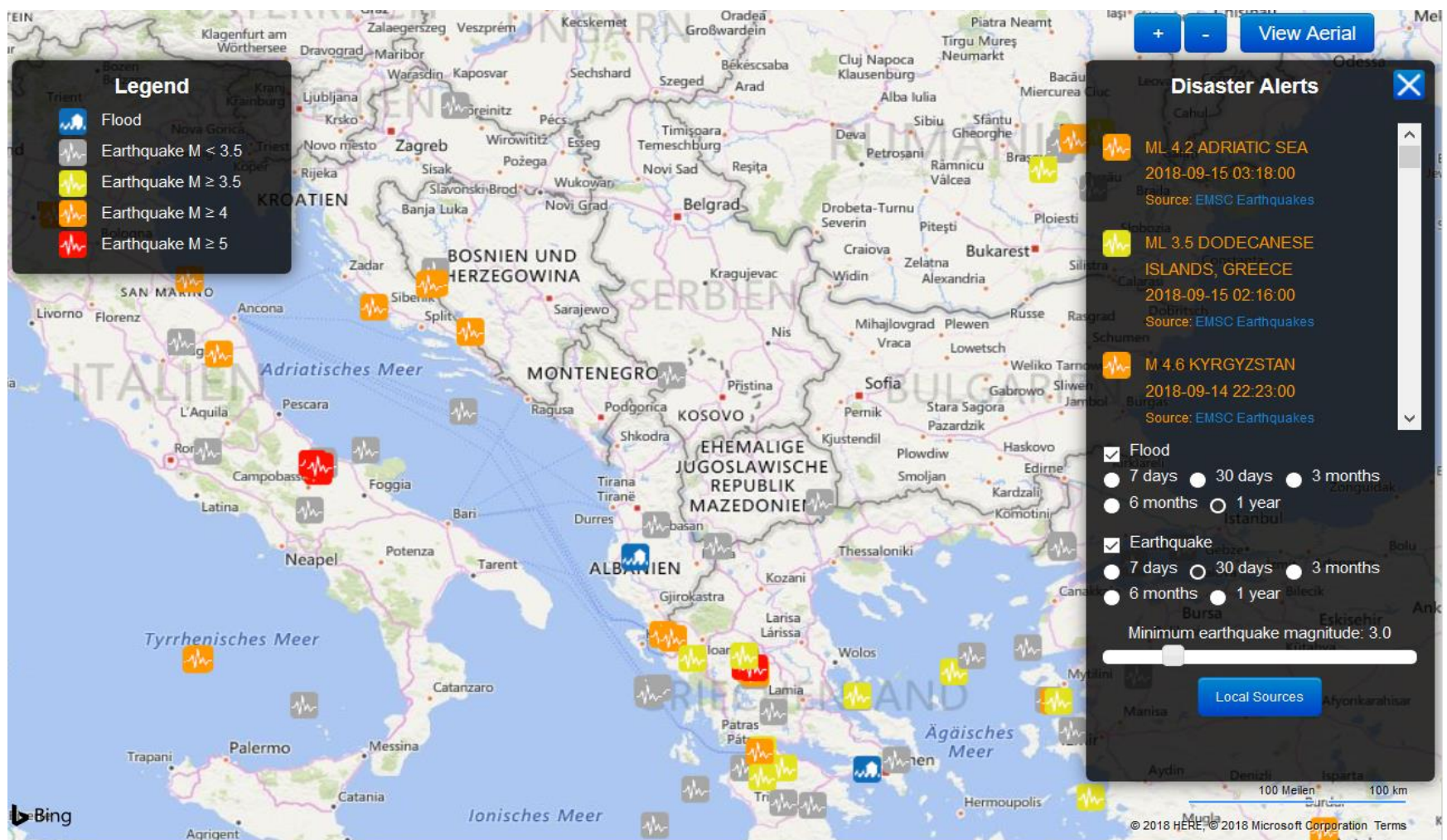
HISTORICAL EVENT (1963 SKOPJE EARTHQUAKE)



RISK MAP (1000Y MRP FLOOD)



EVENT ALERT AND NEWS FEED



THANK YOU FOR YOUR ATTENTION!

Contact:
claims@europa-re.com