



# **INSURTECH'S FUTURE WITH SATELLITE IMAGERY**

INCREASING CLARITY IN UNDERWRITING,  
RISK ANALYSIS, AND CLAIMS

≡ CONTENTS

INTRODUCTION >





# INTRODUCTION

In an increasingly complex world, insurance companies are challenged to determine facts and address uncertainty on the ground in real time.

Claims adjusters and underwriters must rely on timely access to the right data to develop a clear and current understanding of their policyholder assets, and make better decisions about risk and policy solutions.

This eBook addresses these data demands and explores how technological shifts are resolving these trade-offs – with sweeping implications for innovators in insurance and insurtech.







# + CONTENTS

Introduction

1. Meeting insurance challenges with alternative data

2. The power of high density imagery data

3. Insurance applications

4. Sector opportunities and expanded offerings

5. Planet Monitoring for Insurance

Contact





# 1. MEETING INSURANCE CHALLENGES WITH ALTERNATIVE DATA

Insurers are looking for ways to better differentiate their offerings, retain customers, and increase market share in today's highly competitive marketplace. Competitors are working to increase profitability by implementing more accurate and effective pricing models, valuation methodologies, and claims investigation protocols.

To help meet these challenges, insurtech innovations and advanced technologies are rapidly evolving the ways insurance business is done. Innovation labs and forward-looking underwriting departments are recognizing the value high density data can deliver for competitive organizations.

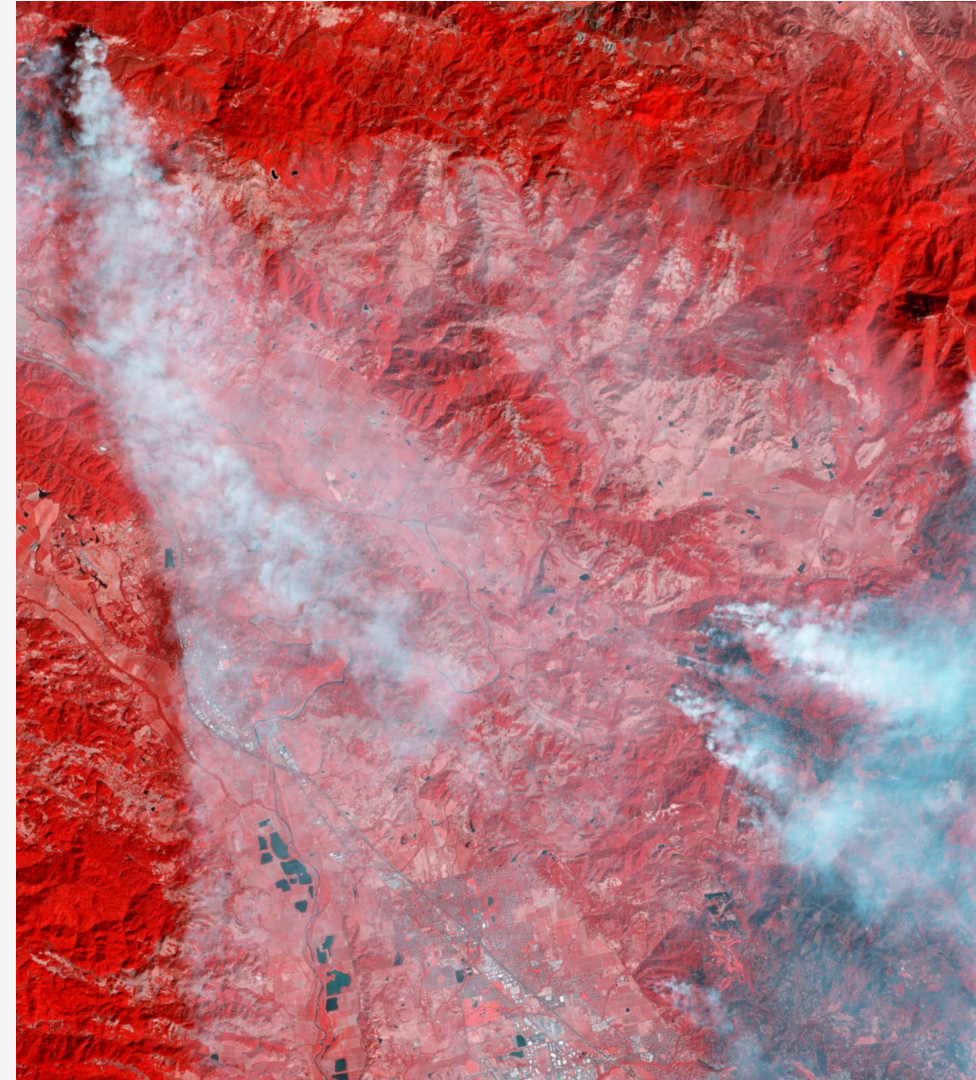




## OPPORTUNITIES IN NEW DATA

To address changing conditions on the ground, insurers require more frequent and cost-effective means of providing timely input into underwriting, claims processes, and policy monitoring.

High resolution data sources, such as aerial and drone imagery, provide detailed insight into markets and claims cases. Historically these data options have been constrained in their availability by cost and scale, but recent advances in satellite imaging, data processing, and machine learning, are opening new doors in the insurance data market.







## 2. THE POWER OF HIGH DENSITY IMAGERY DATA

Core satellite and platform innovations have made high-frequency, medium and high resolution imagery sources accessible, cost-efficient, and easy for insurers to integrate in their online tools and workflows.



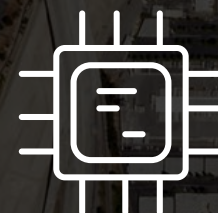
### Wide-area imaging

surveys areas affected by broad-impact claim events



### Targeted capture

resolves finer details of infrastructure and property



### Platform and compute

facilitate analysis to derive and scale insights





## CREATING NEW CAPABILITIES

Together, these capabilities deliver near real-time insight into policies and claim events, enabling underwriters and claims adjusters to optimize the insurance value chain, from appraisal to response.

### Key benefits:

- Predictive** Accurate and dynamic modeling of risks and premium pricing through historical analysis and data integration
- Responsive** Change detection and ground truth clarity for efficient resource allocation
- Automated** Pre-processed, high cadence, and cost-effective data delivered straight into your workflows



Flooding at the Motiva Refinery in Port Arthur. Imagery from May 1, 2017 (above) and September 1, 2017 (bellow).





### 3. INSURANCE APPLICATIONS

High-cadence satellite imagery and analytic solutions, from object localization to change detection, allow insurers to build processes that are more automated, predictive, and responsive than traditional workflows.

These core advancements include:



Risk assessment  
and modeling



Fraud detection and  
asset verification



Claims adjustment  
accuracy and speed



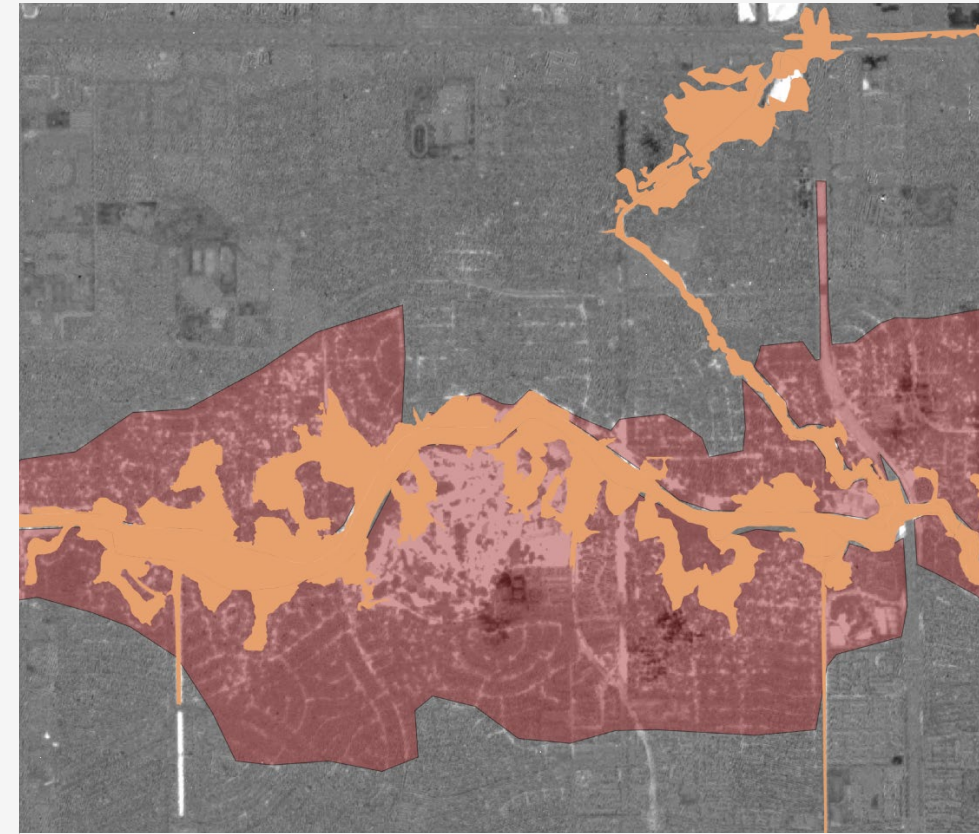


## UNDERSTANDING AND MODELING RISK

Comprehensive risk assessment requires thorough analysis of environmental threats and an accurate understanding of policy's current condition.

Recent innovations in satellite imaging and analysis are empowering actuaries to assess premiums and model inputs with primary source data, delivered at scale.

Risk assessment based on real-time data and analysis gives insurers better insight and context for premium pricing and reinsurance negotiations. Instead of relying on outdated models or valuation assessments, insurers can examine recent policy data and evaluate risk from a deep archive of historical imagery.



Imagery over Houston after Hurricane Harvey. Normalized Water Difference Index (red) identifies true flooding extent against FEMA's Special Flood Hazard Area (orange).



### 3. INSURANCE APPLICATIONS



## DETECTING FRAUD AND VERIFYING ASSETS

Fraud takes a heavy toll on insurance industry profitability every year. With high resolution and high frequency imaging and analysis, adjusters can quantify the spread of claim events and screen claims for fraud.

This layer of early-stage online claims validation saves companies the costs of fraudulent claim payout and the operational expense of in-person inspection.

High resolution, broad-area imaging technology also enable insurers to monitor policies and verify renewable assets.



Recent developments in change detection enable identification of property improvements that can potentially be monetized as policy add-ons.





### 3. INSURANCE APPLICATIONS

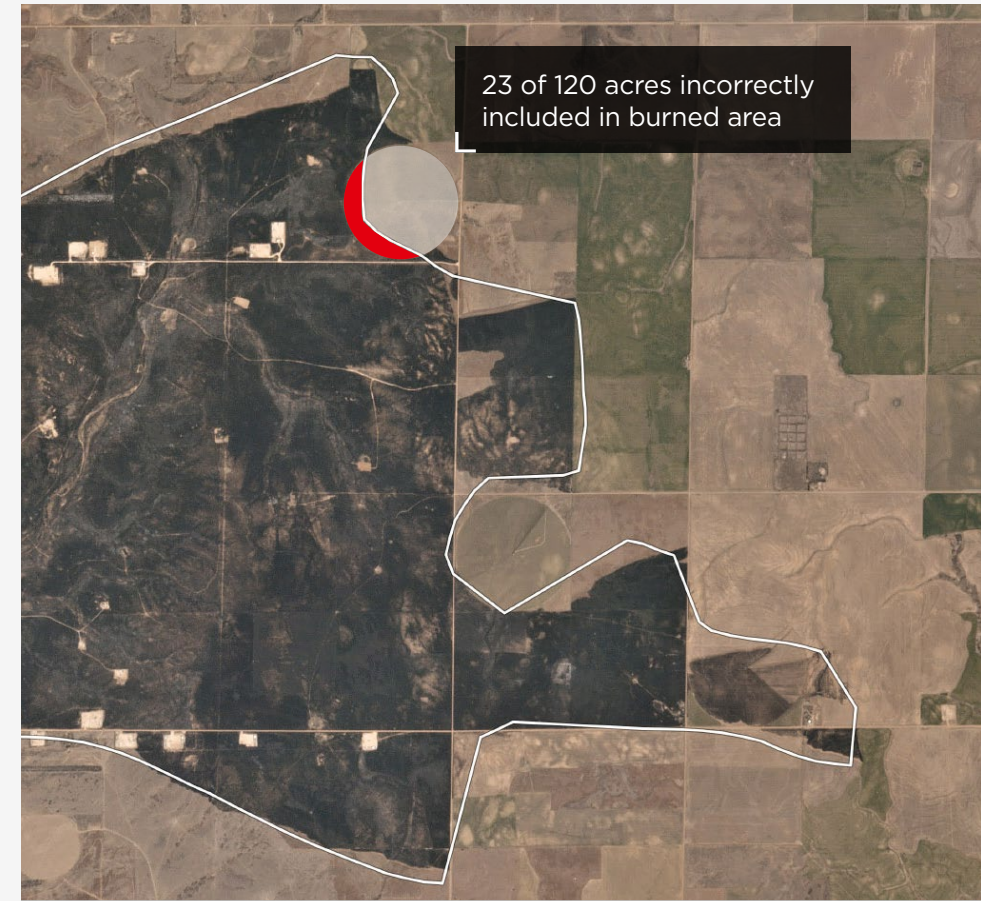


## IMPROVING CLAIMS SPEED AND ACCURACY

Daily monitoring and 24-hour imagery delivery enable insurance companies to respond to claims quickly and efficiently, especially after disaster, when drones are forbidden to fly for the first 72 hours after the event.

Through use of continuous imagery feeds, insurers can take action to boost customer satisfaction and reduce costs by:

- Predicting claim amounts through before-and-after imagery analysis
- Quickly categorizing assets that are unaffected, completely destroyed, or require an on-site adjuster to assess damage
- Proactively engaging affected policyholders and delivering claims payouts with automated alerts



Burn scars and the official fire map of the Starbuck Fire near Coldwater, Kansas





## 4. SECTOR OPPORTUNITIES AND EXPANDED OFFERINGS

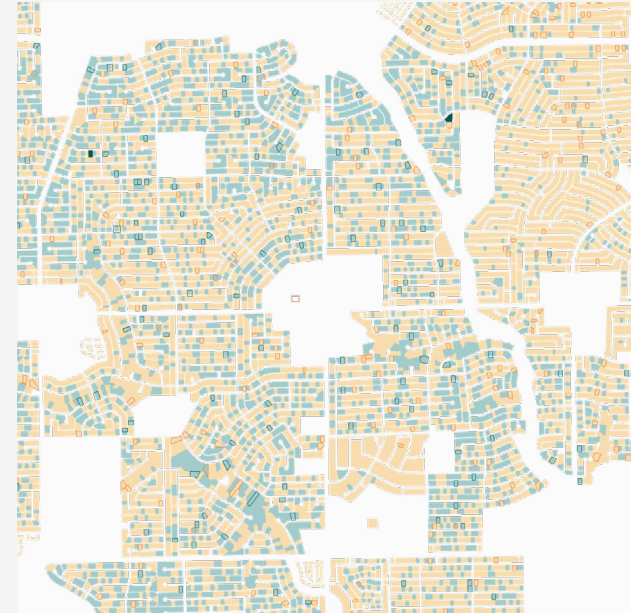
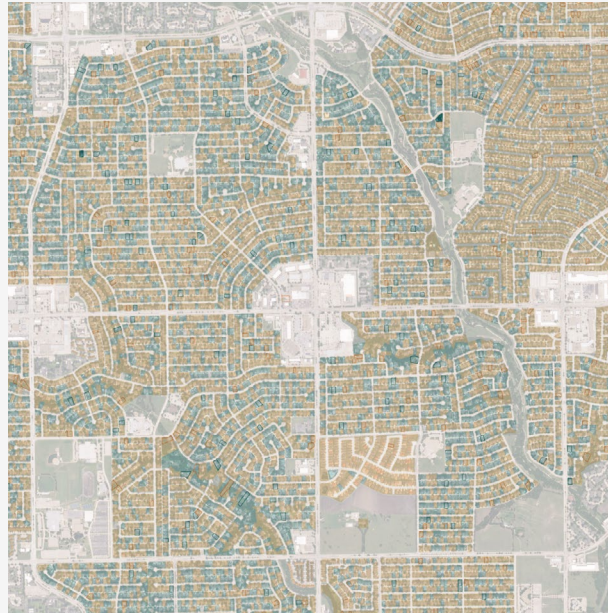
Timely information provided by frequent satellite imagery powers better analysis — enabling insurance companies to confidently enter new markets and introduce new products to a variety of insurance sectors.



#### 4. SECTOR OPPORTUNITIES AND EXPANDED OFFERINGS



## PROPERTY



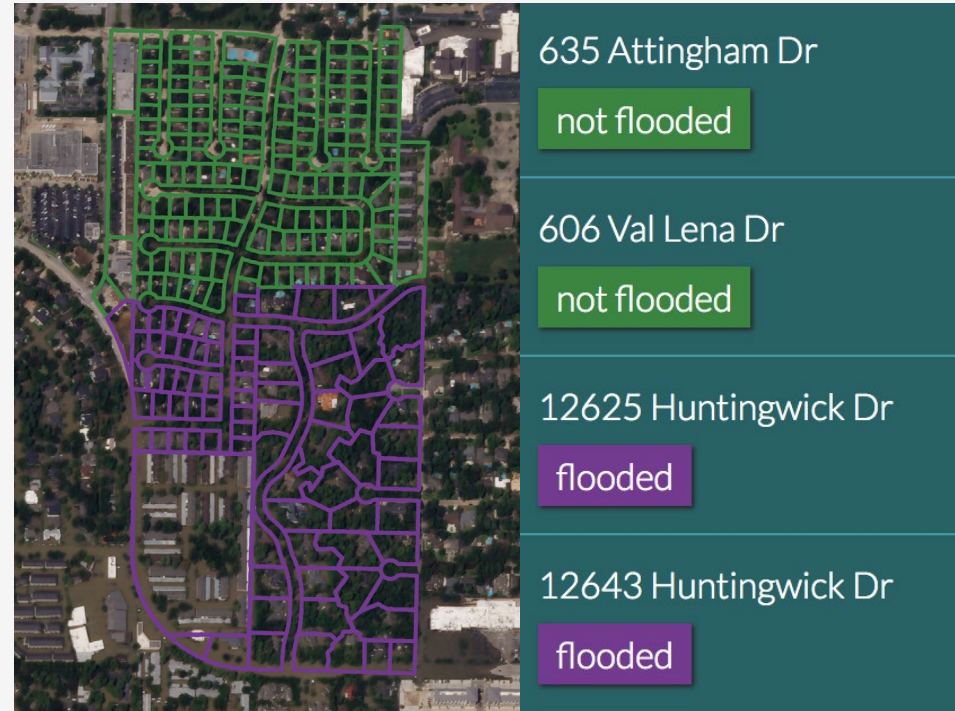
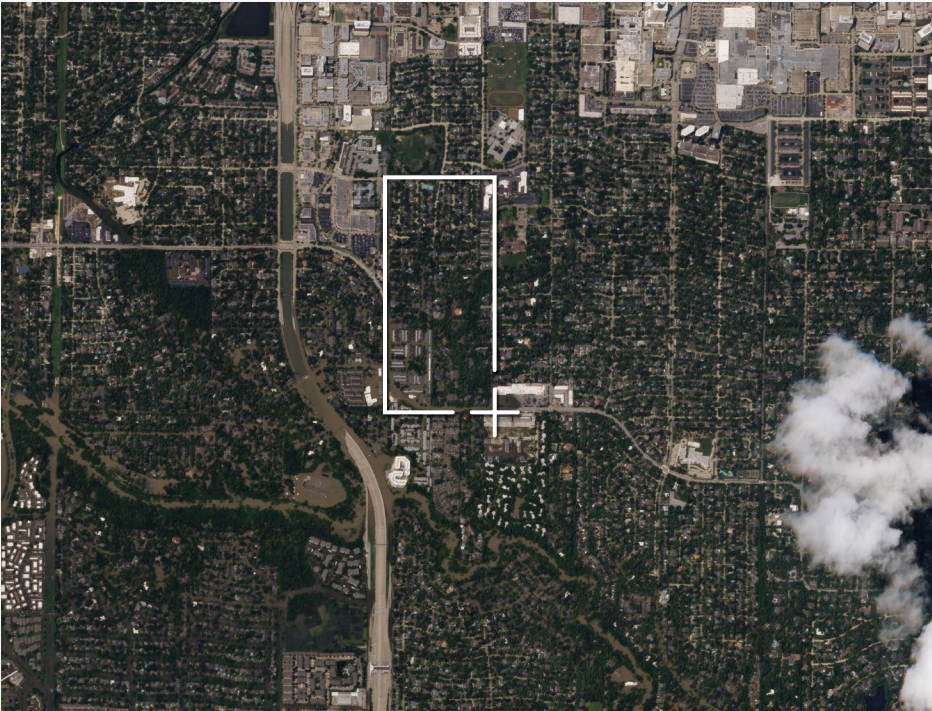
By monitoring assets, insurers can adjust premiums for additions such as newly installed pools or other property improvements.



#### 4. SECTOR OPPORTUNITIES AND EXPANDED OFFERINGS



## CATASTROPHE



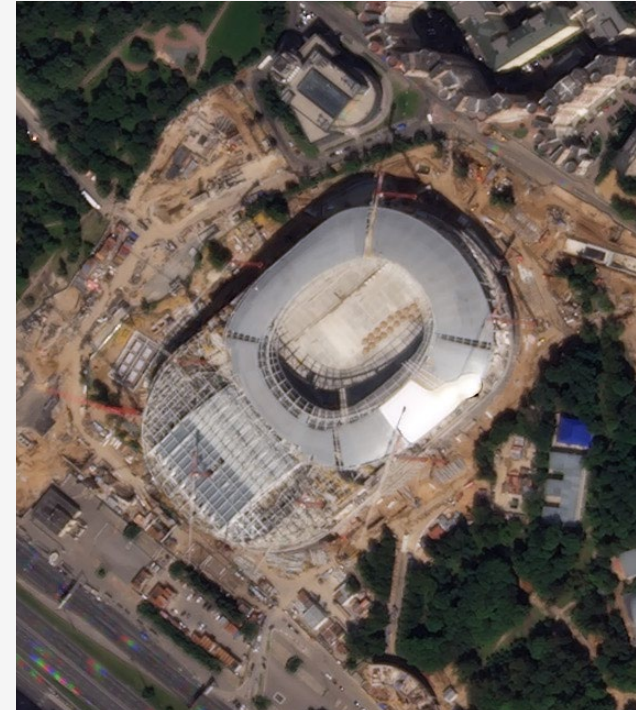
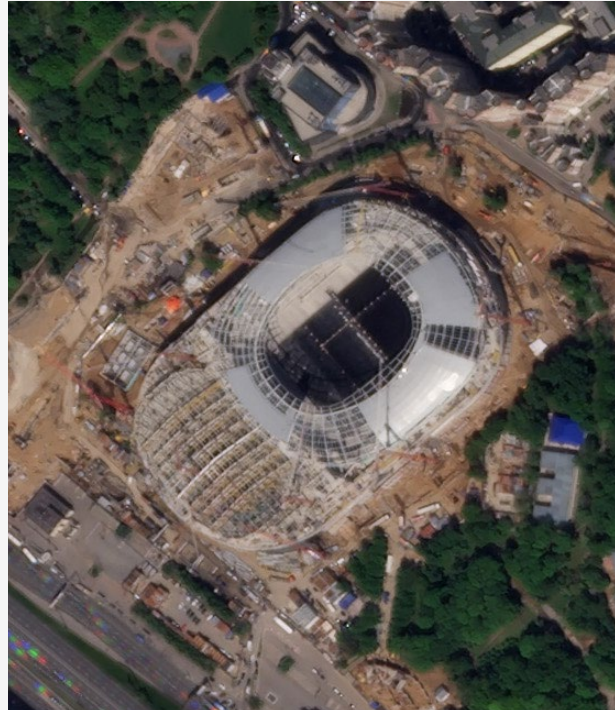
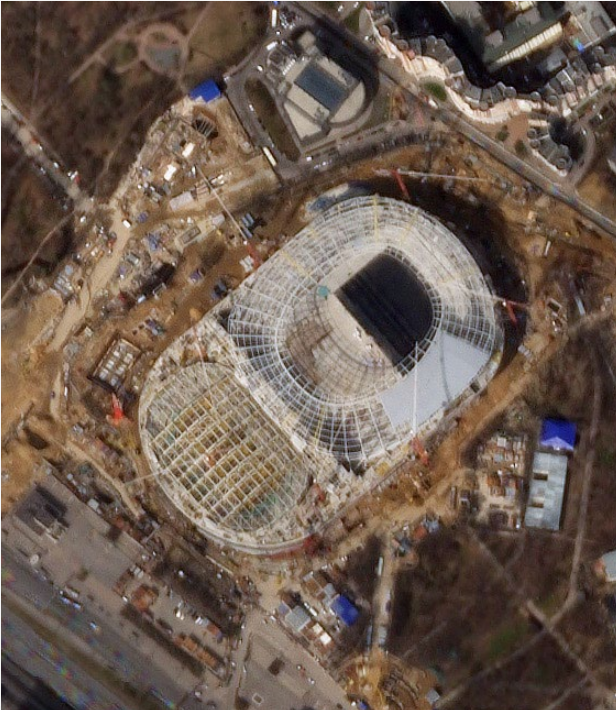
Analysis of before-and-after imagery enables insurers to accurately quantify the spread of disaster events and assess damages.



#### 4. SECTOR OPPORTUNITIES AND EXPANDED OFFERINGS



## BUILDERS RISK



Insurers can capture ongoing imagery of project development to inform premium price increases as construction progresses.



#### 4. SECTOR OPPORTUNITIES AND EXPANDED OFFERINGS



## PORT



Coverage of cargo lots and surrounding areas helps actuaries to validate inventory counts, assess value, and understand nearby environmental risks as they change over time.





## ADDITIONAL SECTORS

Insurers have multiple opportunities to apply imagery data to improve operational effectiveness, better manage risk, and attract and retain customers.



**Aviation and Airport  
Insurance**



**Marine and Maritime  
Insurance**



**Crop Insurance**



**Reinsurance**





## 5. PLANET MONITORING FOR INSURANCE

With imagery from Planet, insurance questions can be answered quickly and accurately. We bring together high-frequency, high-resolution, and rapid availability in a cost-effective solution: Planet Monitoring for Insurance.



### Medium res monitoring

Global, daily monitoring over broad or distributed areas for timely insight.



### Hi res monitoring

Sub-meter, sub-weekly imaging over targeted areas for high-level detail and change detection.



### Platform and API

Pre-processed, analysis-ready data for integration into your workflows and tools.



# EXPLORE PLANET MONITORING FOR INSURANCE

To learn more about Planet Monitoring for Insurance and Insurtech  
visit: [go.planet.com/insurance](https://go.planet.com/insurance)

## FOR MORE INFORMATION



### Explore Imagery

Download samples of our  
high resolution SkySat imagery:  
[go.planet.com/hi-res-sample](https://go.planet.com/hi-res-sample)

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data to actionable insights:  
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