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Panel



Pipeline Geohazards & Third-Party Threat Interference

 Natural and anthropic conditions that occur in several Latin America Countries have let the Geohazards and the Third Parties Actuate have reach a high importance in the technical risk in the oil companies.

THIRD PARTIES (41%)

OPERATIONAL EVENTS(1%)

EXTERNAL FORCES(20%)

INTERNAL CORROSION (0%)

EXTERNAL CORROSION(15%)

CRACKING (0%)

CONSTRUCTION DEFECTS. (21%)

COMPONENTS FAILURE (2%)









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Third Parties Panel

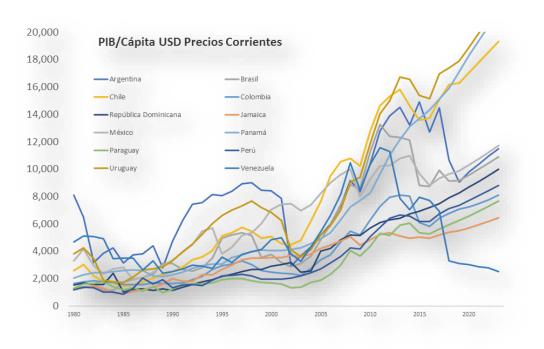


Regional Context

The upward economic dynamics in Latin America, develop of infraestructura, lack in regulation and land-owners and demandings communities, make the Third Parties Threat would be an important factor to be taking into account



Economic evolution of the Gold prize in last 50 years *Source: Internet*



Economic Upward in Latin America, lastest 40 years Source: Internet

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Third Parties Panel

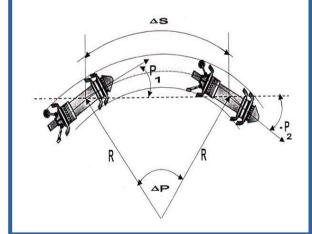


Monitoring Activities

The engineers in charge of the Right Of Way (ROW) mainteinance, frequently geotechnics engineerings with comprehensive assure functions, are the responsibles in the detection, mitigation and control of the third Parties Threat. The aerial and terrestrial patrols and specialized monitoring of the terrain are trasversal techniques to identify the geohazards and third parties hazard.















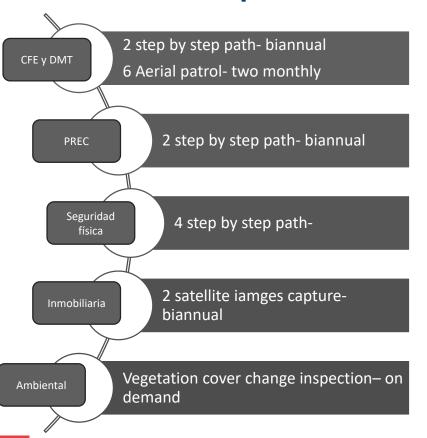


Third Parties Panel

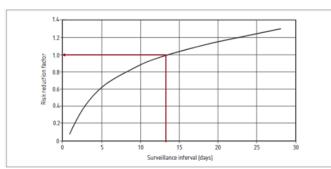


Monitoring and Inspection, ODL Experience

In the past

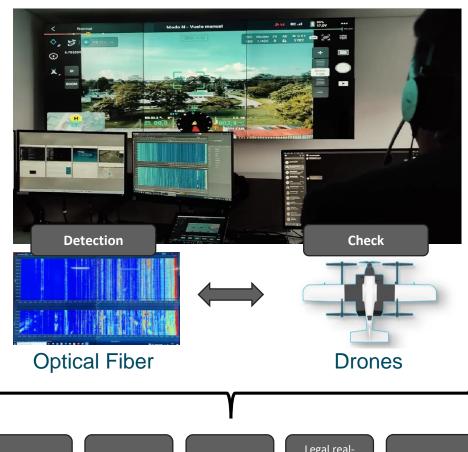


Industry recomendation



frequency due to reduction in failure surveillance interference VS external frequency- Source: PD 8010-3-2009+A1-2013 (UKOPA)

SIAD - Real time monitoring



CFE y DMT

PREC

Security

Legal realstate

Environment

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Civil Works

Many times, the third partie threat derive in common problems with the geohazards, for example, when the intefering cut a slope for a road construction, or make ditch or open pit mining affecting the ROW stability. The control Works are similar to civil, geotechnics or Hydrotechnics Works.



Affectation for open pit mining -PK 524 a 525





Executed works





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Types of third parties Threat

Another cases of threats identified in the Colombian pipelines

Concentred Water in the construction of the roadway-**Gully generation**

Affectation in rivers for drag for minning.



Housing construction projects on the ROW





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Highway interference Case





Third Parties Panel

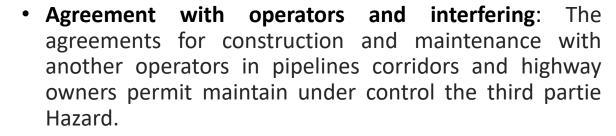


Preventive strategies









- **Preventive Signposts:** Identifying and warning about the road crosses, towns, and places of interest.
- Toll-free line 018000: Owners and communities can call to 24 hours available lines to report emergencies and another types of occurrences.
- Connection with land-owners and communities: To maintain relationship with land-owners and relevant communities permit minimize actions developed for this interest groups. The municipal administration contact is important to develop in coordinated form the territorial planning regulation.