

A large, wavy graphic element frames a collage of industrial and renewable energy scenes. On the left, an offshore oil rig is visible against a sunset sky. In the center, several white wind turbines stand on a flat, open landscape. On the right, a large industrial refinery or chemical plant is shown at night, with its complex network of pipes, towers, and storage tanks illuminated by warm lights.

# **SOLUTIONS** for **SUSTAINABLE INDUSTRIAL** **DEVELOPMENT**

Process Safety / Asset Integrity / Business  
continuity



# OUR VISION



*“To be a **PREMIER GLOBAL COMPANY** in **HEALTH, SAFETY, SECURITY** and **ENVIRONMENT**, providing sustainable and integrated **CONSULTANCY, TECHNOLOGY** and **ENGINEERING** solutions”.*

# INERCO IN NUMBERS



**1984**  
Foundation year

**560**  
Highly Qualified Professionals

Offices in  
**9**  
Countries

Projects in  
**+70**  
Countries

Annual Investment  
**800K €**  
R&D



# WHO DO WE WORK FOR?



**OIL&GAS**  
OIL&GAS



**MINING**  
MINERÍA



**ELECTRICITY  
AND GAS**  
ELECTRICIDAD  
Y GAS



**CHEMICAL AND  
PETROCHEMICAL**  
QUÍMICO Y  
PETROQUÍMICO



**ENGINEERING**  
INGENIERÍA



**INFRASTRUC-  
TURES**  
INFRAESTRUC-  
RAS



**AERONAUTICAL  
AND TRANSPORT**  
AERONAÚTICO Y  
AUTOMÓVIL



**PORTS**  
PUERTOS



**PHARMACEUTICAL**  
FARMACEÚTICO



**CEMENT**  
CEMENTO



**IRON AND STEEL**  
SIDERÚRGICO



**FOOD AND  
AGRICULTURE**  
AGROALIMENTARIO



**PUBLIC  
ENTITIES**  
ORGANISMOS  
PÚBLICOS



**PAPER**  
PAPEL

# OIL & GAS





# CHEMICAL AND PETROCHEMICAL





# ENGINEERING AND INFRASTRUCTURE





# ELECTRICITY AND GAS





# MINING

KINROSS MARICUNGA

NITTETSU MINING

Carboandes  
CARBONES DE LOS ANDES S.A.

CODELCO

MINERÍA ACTIVA

VALE



AngloAmerican

ANTOFAGASTA MINERALS

lundin mining

CSN  
Companhia Siderúrgica Nacional

CBA  
Companhia Brasileira de Alumínio

Votorantim  
Metais

SAMARCO

BOLIDEN

SOUTH32  
Cerro Matoso

GLENCORE

PazdelRío  
Votorantim  
Energía

Los Quenuales S.A.

ANGLOGOLD ASHANTI

matsa  
A MUBADALA & TRAFIGURA COMPANY

ADITYA BIRLA  
NOVELIS

CLC

PERUBAR S.A.

PRODECO  
En Pro de Colombia

bhpbilliton  
resourcing the future

Almagrera, s.a.

energía  
integral andina

CEI  
CONSORCIO ENERGIA DE IQUITOS

Los Quenuales S.A.  
Yauliyacu

CATALINA HUANCA  
SOCIEDAD MINERA S.A.C.

CNR  
COLOMBIAN NATURAL RESOURCES

Oxbow



# WHAT DO WE DO?

Comprehensive solutions





## Comprehensive Safety (HSS)

- Risk analysis and management
- Process Safety Management (PSM)
- Emergency planning and business continuity
- Asset Integrity
- Security
- Chemical Safety (REACH, CLP, GHS)
- Prevention of occupational risks (External Prevention Service)
- Human Factor Engineering
- Design and implementation of OSH solutions
- Risk analysis by Human Factor. Human HAZOP and HOP
- SBC. Preventive Culture
- Scanning for OSH
- Emergency and rescue training

## Environment

- Environmental and social impact assessment
- Climate change and sustainability
- Environmental modelling
- Environmental and social management

## Energy

- Optimisation of processes, systems and utilities
- Energy audits
- Process simulation (CFD)
- Continuous monitoring

### Consulting

### Technologies

- Atmospheric emissions control
- Continuous monitoring of processes and emissions
- Water treatment
- Contaminated soils
- Acoustics and vibrations

- Combustion optimization
- Energy storage
- Burners, furnaces and boilers, heat exchangers
- Intelligent steam traps and networks

### Engineering

- Conceptual, basic and detail engineering
- EPC
- Project management
- Engineering by speciality

# INDUSTRIAL SAFETY

## What do we offer you?

INERCO 

Integrated management of industrial safety throughout the life



Servicios para la Business continuity services

[www.inerco.com](http://www.inerco.com)



Risk Analysis (PHA) & Functional Safety (SIS/SIL)



Process Safety Management (PSM)



Reliability & Maintenance (Asset Integrity)



Security



Emergency Management



Combating marine pollution



Business continuity



Chemical Product Safety



## Process Safety / Asset Integrity

Integrated management of industrial safety throughout the life cycle



### RISK ANALYSIS AND MANAGEMENT (INTEGRITY IN DESIGN)

### PROCESS SAFETY MANAGEMENT (OPERATIONAL INTEGRITY)

### ASSET INTEGRITY (ASSET INTEGRITY)

#### Conceptual engineering

#### Basic engineering

#### Detailed engineering

#### Construction

#### Commissioning and Operation

#### Asset integrity and shelf life extension

- ✓ HAZID
- ✓ CHECKLIST
- ✓ WHAT IF

- ✓ Estudios HAZID
- ✓ CHECKLIST
- ✓ WHAT IF
- ✓ BOW TIE/Safety Barrier
- ✓ HAZOP Studies
- ✓ SIL/LOPA Studies
- ✓ EAC / ACR
- ✓ BRA
- ✓ FERA / FEA / FRA / FEDHA
- ✓ 3D/CFD simulations
- ✓ EERA, ESSA
- ✓ RAM

- ✓ BOW TIE/Safety Barrier
- ✓ HAZOP Studies
- ✓ SIL/LOPA Studies
- ✓ PHSSER
- ✓ EAC /ACR
- ✓ 3D/CFD simulations
- ✓ Fire & Gas Mapping
- ✓ C.I. water needs
- ✓ Safety engineering
- ✓ EERA, ESSA
- ✓ RAM

- ✓ Measurement verification
- ✓ Security
- ✓ Analysis
- ✓ Risks (Safety Barriers)
- ✓ Comprehensive audits
- ✓ SIMOP

- ✓ Process Safety Management (PSM)
- ✓ Procedures validation and SIS maintenance
- ✓ Comprehensive audits
- ✓ Contingency Plans
- ✓ Fire Pre Plan
- ✓ Business Continuity Plans

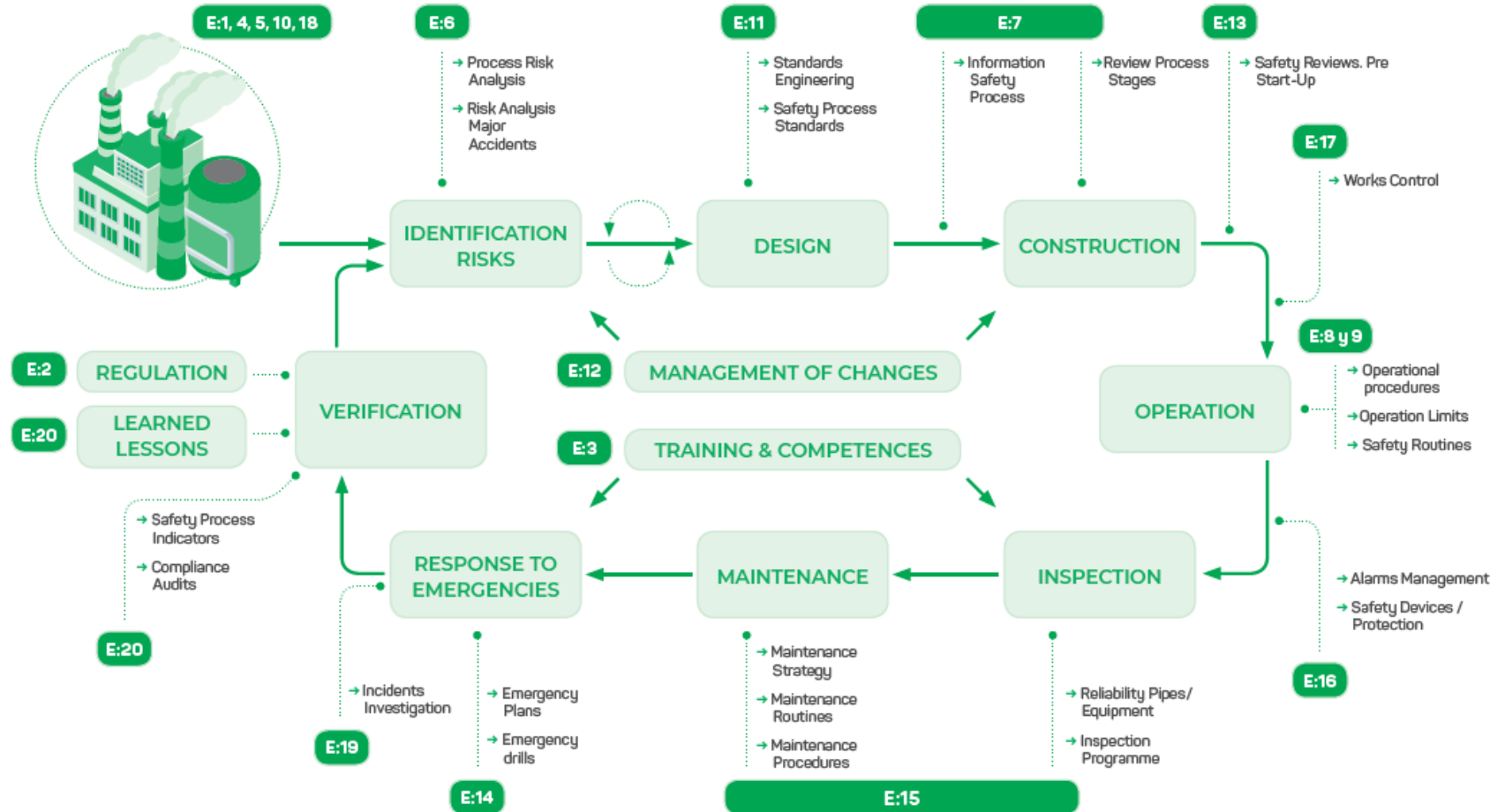
- Training
- Maintenance audit
- Asset Register
- RCM
- FMECA
- RBI
- Root cause analysis (RCA)
- RAM
- Maintenance management

# Process Safety Management (PSM)

## PSM - FACILITY LIFE CYCLE

Safety Process is present in the entire operating cycle

**E:** PSM Elements

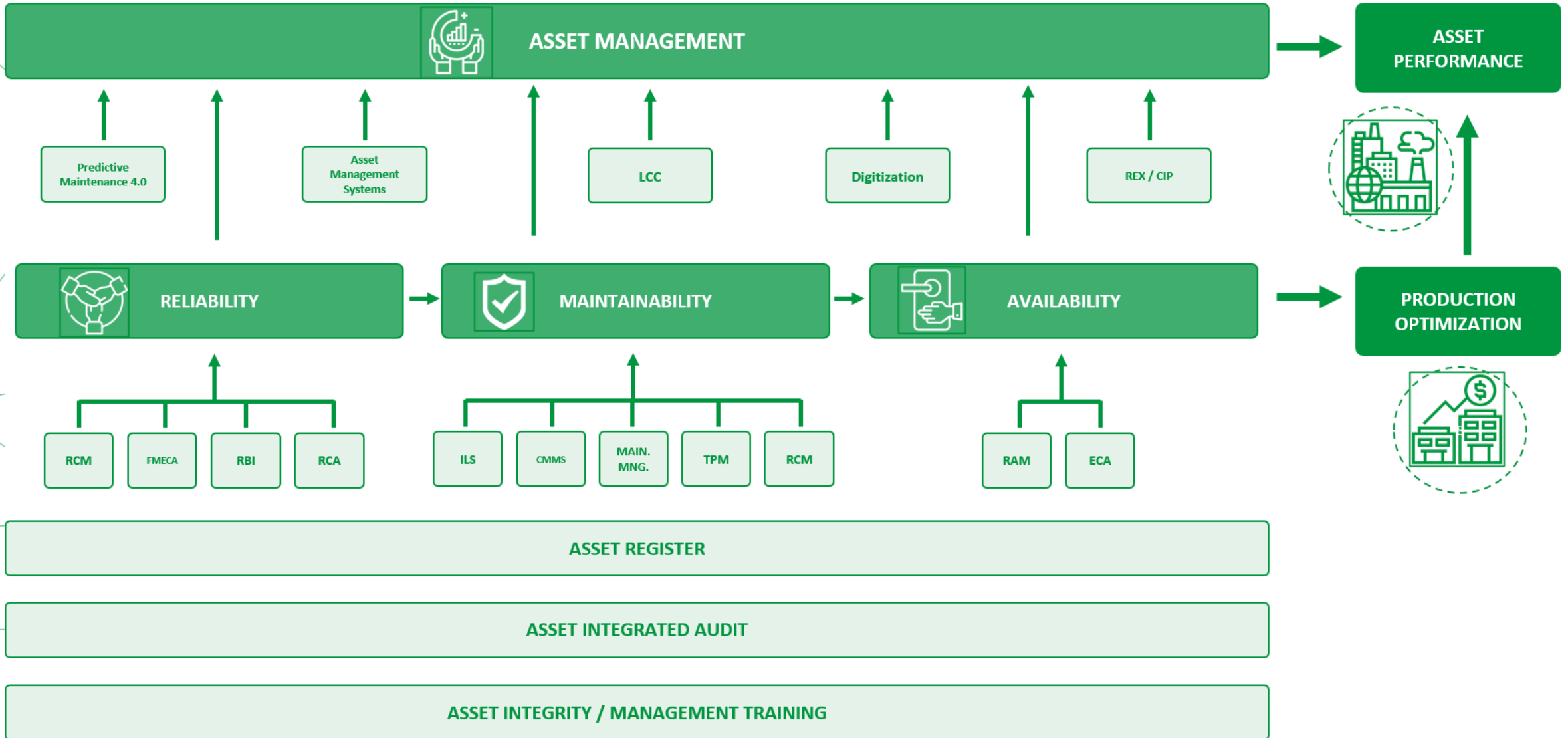


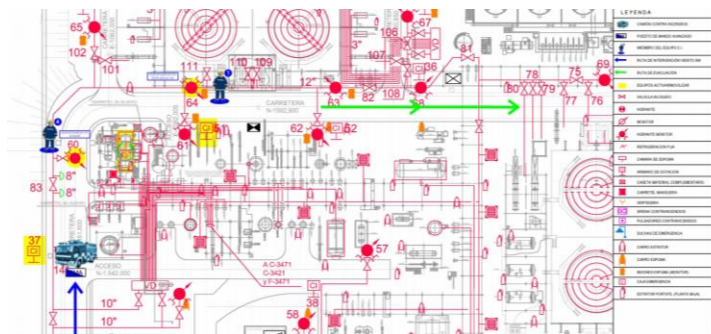
### ELEMENTOS PSM: ENERGY INSTITUTE

E.1	Leadership commitment and responsibility
E.2	Identification and compliance with legislation and industry standards
E.3	Employee selection, placement, competency & health assurance
E.4	Workforce involvement
E.5	Communication with stakeholders
E.6	Hazard identification and risk assessment
E.7	Documentation, records and knowledge management
E.8	Operating manuals and procedures
E.9	Process and operational status monitoring and handover
E.10	Management of operational interfaces
E.11	Standards and practices
E.12	Management of change and project management
E.13	Operational readiness and process start-up
E.14	Emergency preparedness
E.15	Inspection and maintenance
E.16	Management of safety critical devices
E.17	Work control, permit to work and test risk management
E.18	Contractor and supplier, selection and management
E.19	Incident reporting and investigation
E.20	Audit, assurance, management review and intervention



# Reliability & Maintenance (Asset Integrity)





## ✓ **Emergency Plans and Fire Pre Plan**

- ✓ Chemical and Environmental Emergencies
- ✓ Self-protection of Ports and Marine Pollution
- ✓ Territorial Plans Civil Protection
- ✓ Transport of dangerous goods

## ✓ **Business Continuity Plans**

- ✓ Risk Analysis (RA)
- ✓ Business Impact Analysis (BIA)
- ✓ Continuity strategies and action protocols
- ✓ Business Continuity Management Systems

## ✓ **Implementation of Emergency Plans**

- ✓ Assessment of responsiveness
- ✓ Emergency Drills

## ✓ **Emergency and Fire Fighting Training. SGI**

## ✓ **Emergency Management and Support Systems (SIGEM, CARECHEM/CHEMDATA, FACT 24)**



# Combat marine pollution by hydrocarbons

## ADVANCED TECHNICAL ADVICE

Risk Analysis and  
Advanced  
Simulations

Evaluation and  
diagnosis of  
response capacity

Technical advice  
on the  
management of  
fighting means

Operational Plans  
to Fight Marine  
Pollution

Specialized advice  
in emergencies

## AUTOMATIC SATELLITE MONITORING OF OIL SPILLS EOS VIEWER

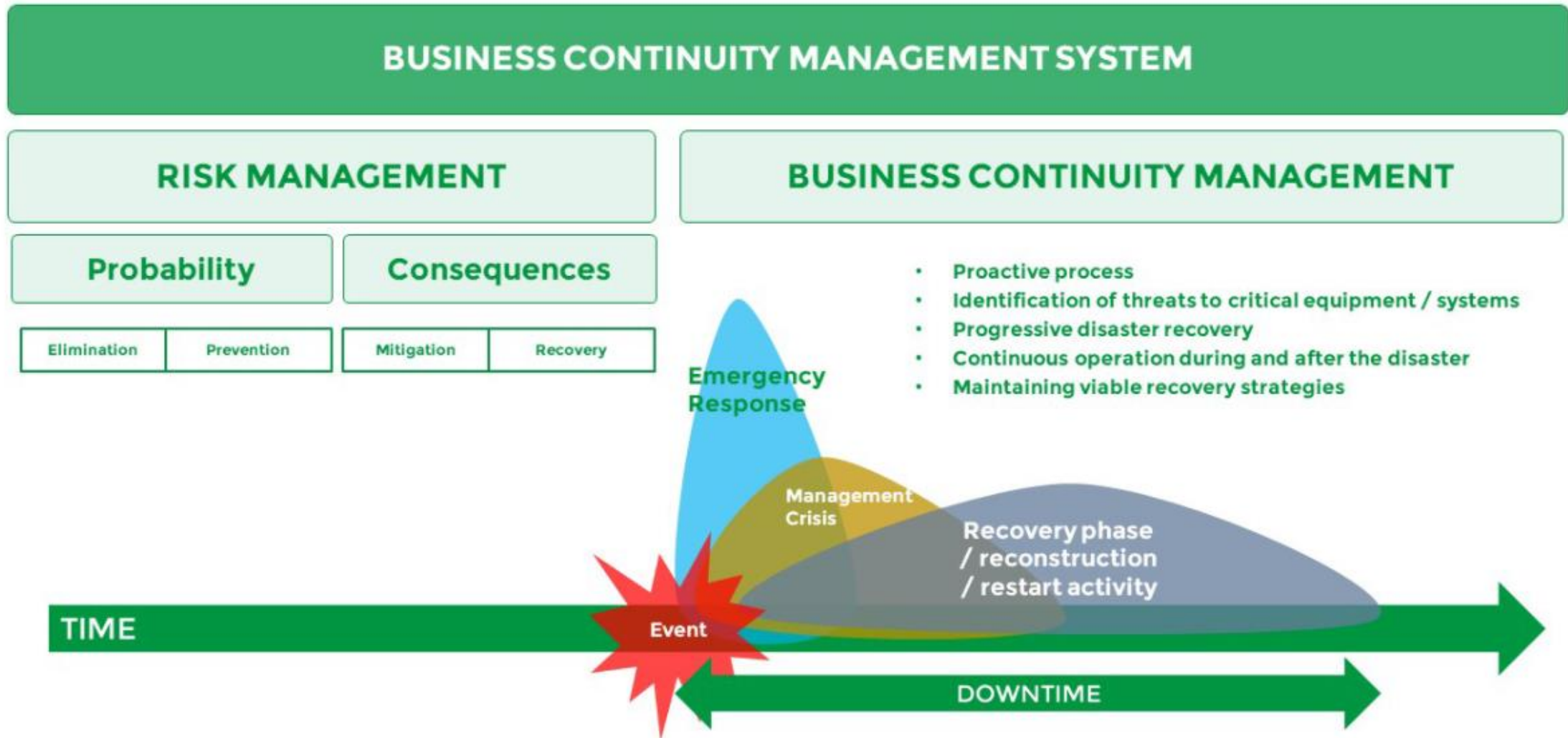
**EOS VIEWER**  
Satellite observation  
+  
Artificial intelligence  
algorithms



Asset monitoring  
**SATELLITE OBSERVATION**



Events characterization  
**ARTIFICIAL INTELLIGENCE**







## ✓ Major Accident Hazard

- Compliance inspections Seveso Regulation
- Documentation evaluation:
  - Safety Report/QRA
  - Emergency Plans.
  - Notification.
- Verification of implementation/suitability of corrective actions after accidents/incidents.

## ✓ Firefighting

- Inspections for compliance fire protection regulation.
- Validation of equivalent alternative safety measures

## Government Systems and Security Management



- Políticas de Security
- ISO 31000
- Diseño e implantación de modelos de gestión de Security
- Análisis de riesgos, criterios de protección, métricas de desempeño
- Planificación de gastos e inversiones
- Integración: Seguridad Física + Ciberseguridad



## Physical Security Planning

- Security audit
- Risk analysis, protection criteria + proposal of measures (technical and organizational)
- Investment and expense planning.

## PIC Consulting for Critical Infrastructures

- Critical infrastructure documentation required by the CNPIC: PSO and PPE
- Adaptation of physical and logical risk analysis to a unified model
- Support to the Security department in the development of related documentation



# Chemical Product Safety (REACH, CLP, GHS)



- **Planning, implementation and training on REACH and CLP**
- **REACH and SDS Regulations:**
  - Individual registration and substance characterization
  - Full registration and Consortium management.
  - Extended Safety data sheets.
  - Management of physicochemical and (eco)toxicological test
  - SVHC substances. Use authorization.
- **Only representative services**
- **CLP Regulation**
- **PCN notification**
- **REACH and CLP audits**

# INERCO INDUSTRIAL SAFETY MANAGERS



**JUAN SANTOS REMESAL**

Manager Industrial Safety Division  
Manager REACH INTEGRA

Functional Safety Certificate  
Master in Maintenance  
26 years of experience



**GABRIELA REYES DELGADO**

Head Industrial Safety Department

Functional Safety,  
Process Hazards & Risk Analysis Certificate  
21 years of experience



**PILAR OJEDA RODRIGUEZ**

Head the Process Safety Area

Functional Safety ,  
Process Hazards & Risk Analysis Certificate  
14 years of experience



**PASTORA FERNANDEZ ZAMORA**

Head Risk Analysis Area

Functional Safety Certificate  
21 years of experience



**DAVID VERDUGO TAMAYO**

Head Inspections and Audits Area

Certified Major Accident and Fire Inspector  
18 years of experience



**CAROLINA SANCHEZ ROMERO**

Head Protection and Emergencies Area

Director of Security and Head of Private Security  
17 years of experience



**RAUL MARTINEZ SALAZAR**

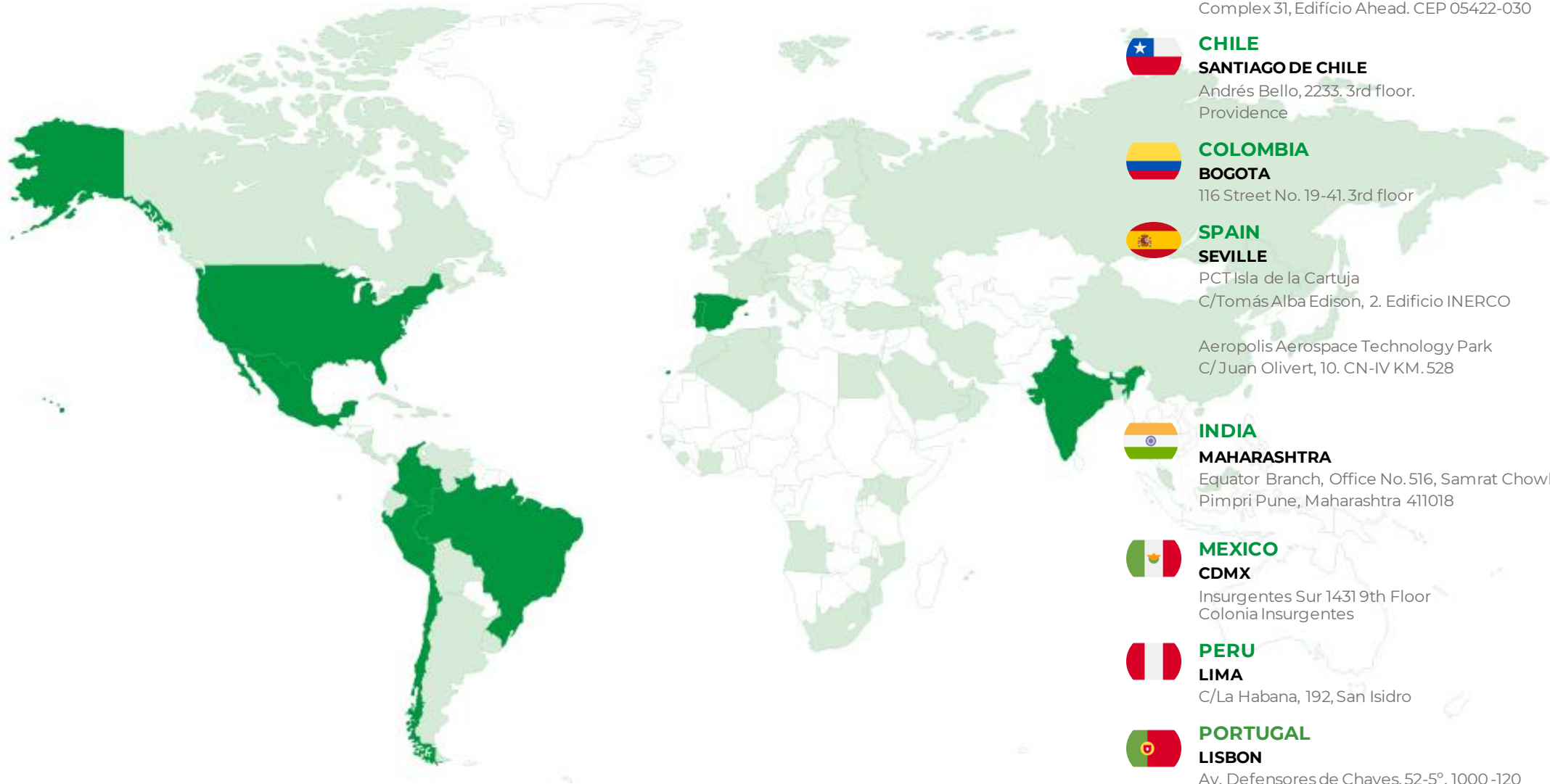
Regulatory Affairs Specialist (REACH/CLP)

15 years of experience





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