

Redes Eléctricas Inteligentes

ISCM Integrated Substation Condition Monitoring

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Abril 2022

Background Condition Monitoring Systems



Siemens Energy / Transmission Services
SE GP T SV

What are the challenges of grid owners and utilities?

- Electricity grids are the second complex infrastructure in world, after Internet!
- Expenditures are being cut (OPEX/CAPEX)!
- Knowledge and expertise is lost when people retire or through downsizing!
- Operating aging equipment at higher levels affects lifespan and reliability!
- Utilities are expected to maintain or even increase the level of performance!

What is the answer?

Digitalization with Intelligent Condition Monitoring Systems as basis for a performant Asset Management and Asset Performance system, in which the right maintenance strategy plays an important **role!**

What are key questions to be answered as grid owner ?

How will the condition of my assets develop in the future?

How to prevent catastrophic failures

When should I replace my assets?

Am I doing maintenance at the right time?

What is the best way to maintain my assets?



Distribution (45%)

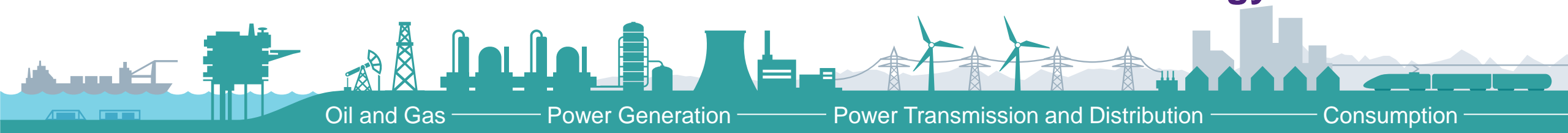


How to optimize CapEx, and plan long-term investment waves?

How to increase maintenance efficiency?

How to extend the lifetime of my assets?

Time Based Maintenance is still the most common strategy!



1 Typical distribution for developed nations, IEC White Paper "Strategic asset management of power networks", 2015

Situación 1

Activos a mantener según plan preventivo basado **en tiempo**



Bahías GIS Transmisión



Bahías GIS Distribución



AIS Transmisión



AIS Distribución



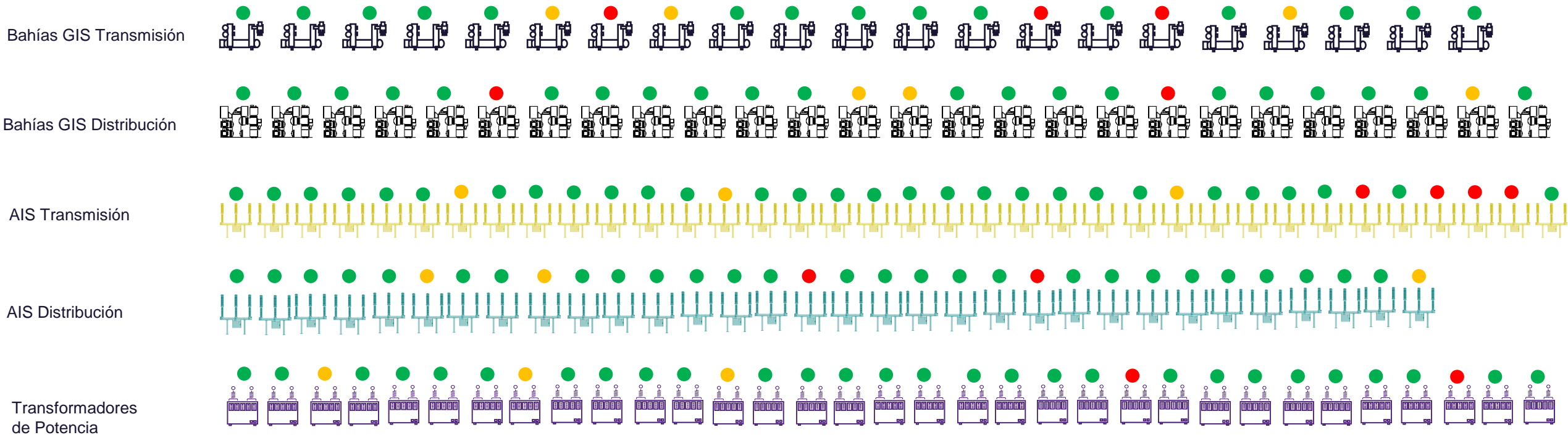
Transformadores de Potencia



Time Based Maintenance is still the most common strategy!

Situación 2

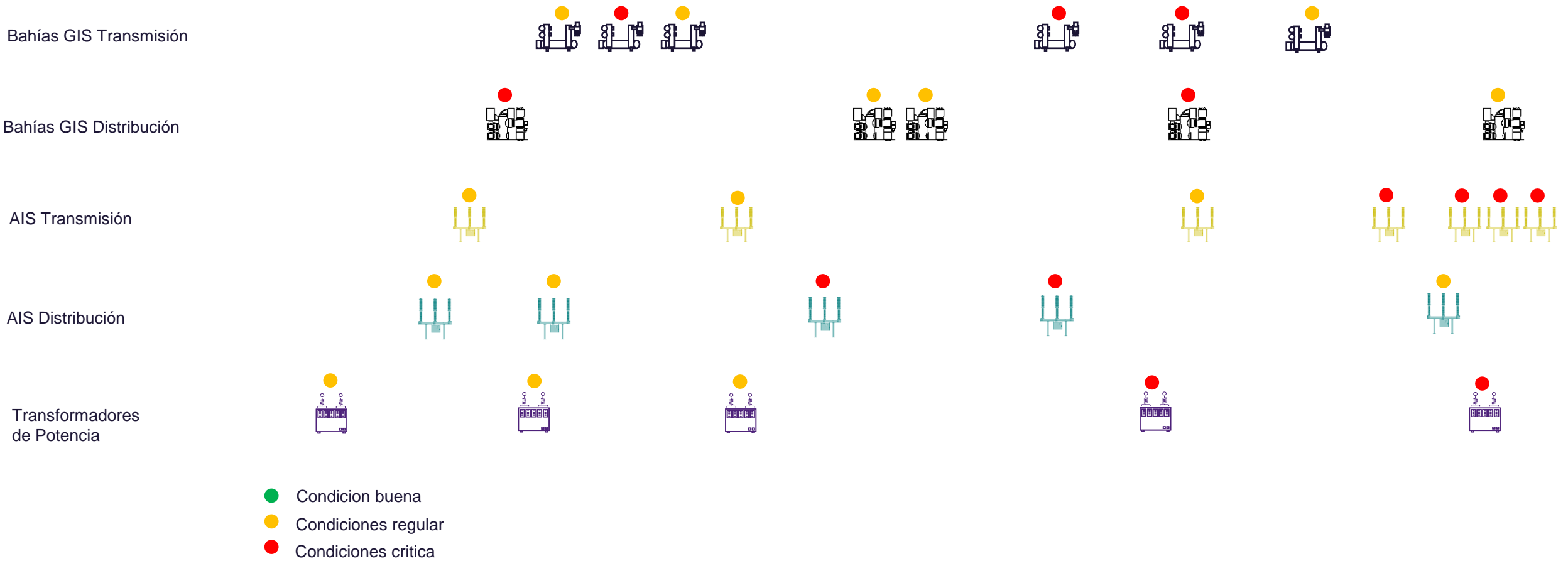
Activos a mantener según plan prescriptivo basado en la **condición** de los equipos



- Condición buena
- Condiciones regular
- Condiciones critica

Situación 2

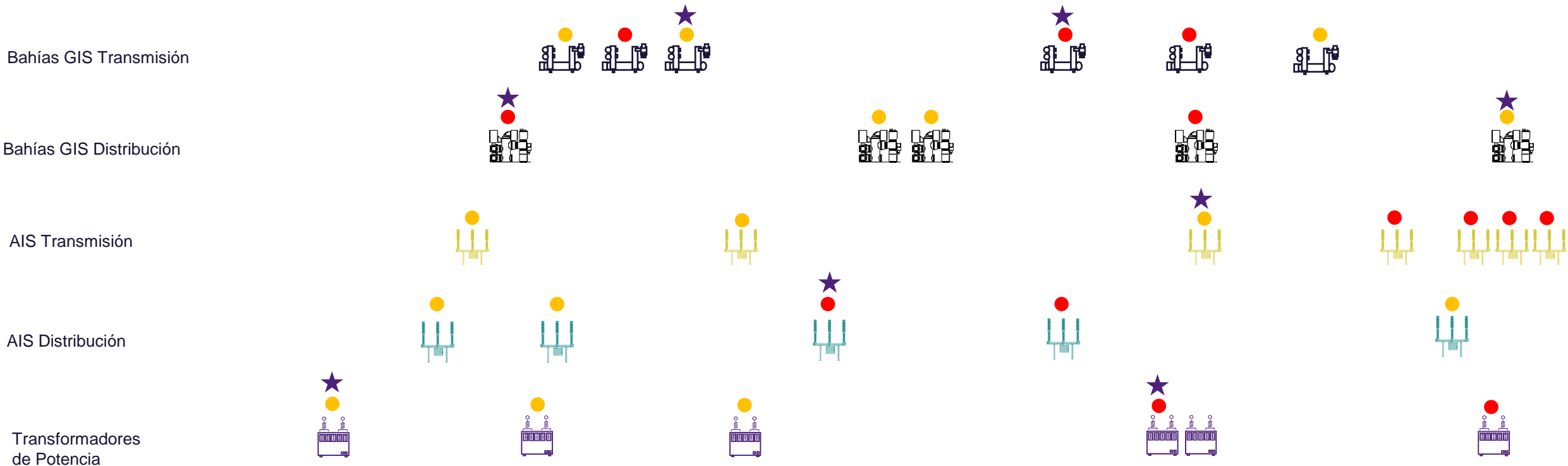
Activos a mantener según plan prescriptivo basado en la **condición** de los equipos



- Condición buena
- Condiciones regular
- Condiciones critica

Situación 3

Activos a mantener según plan prescriptivo basado en **condición y riesgo**



- Condición buena
- Condiciones regular
- Condiciones crítica
- ★ De alta importancia para la red

Situación 3

Activos a mantener según plan prescriptivo basado en **condición y riesgo**

Bahías GIS Transmisión



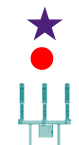
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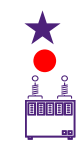
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Transformadores de Potencia



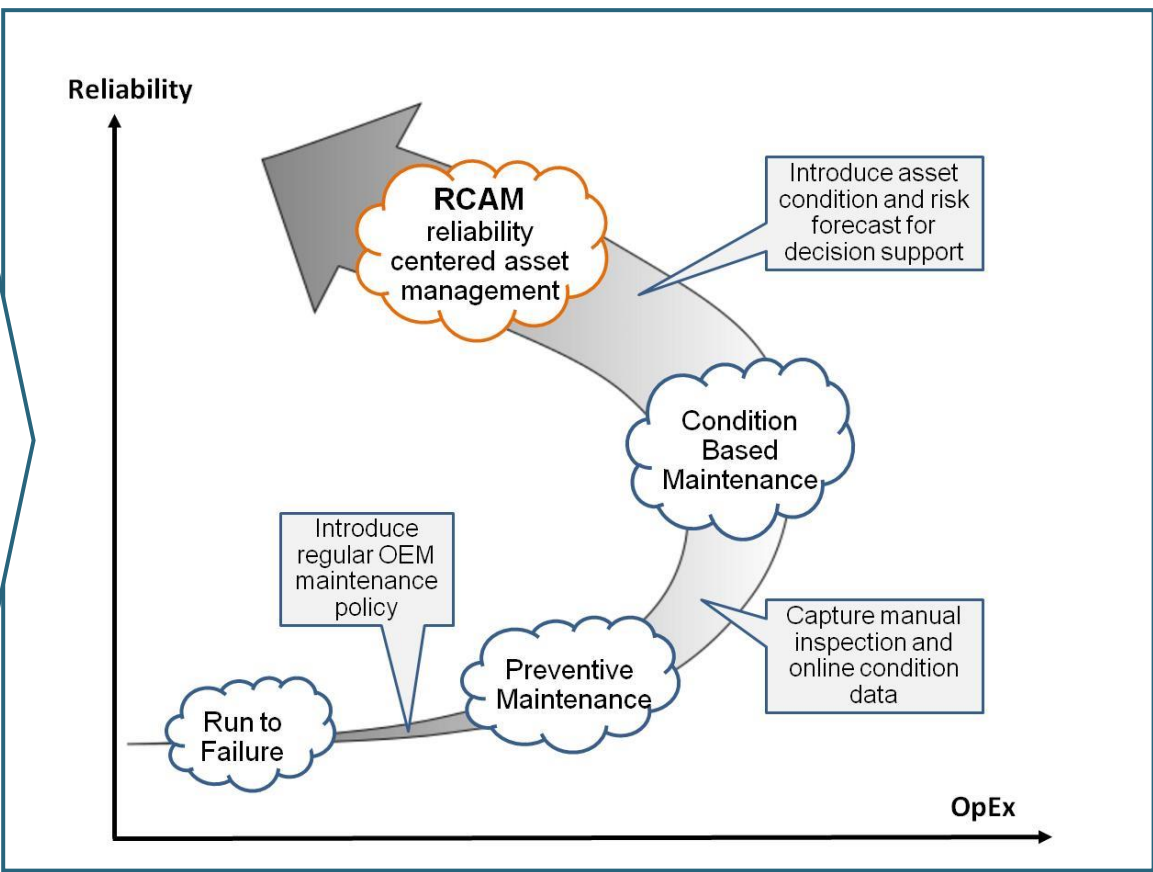
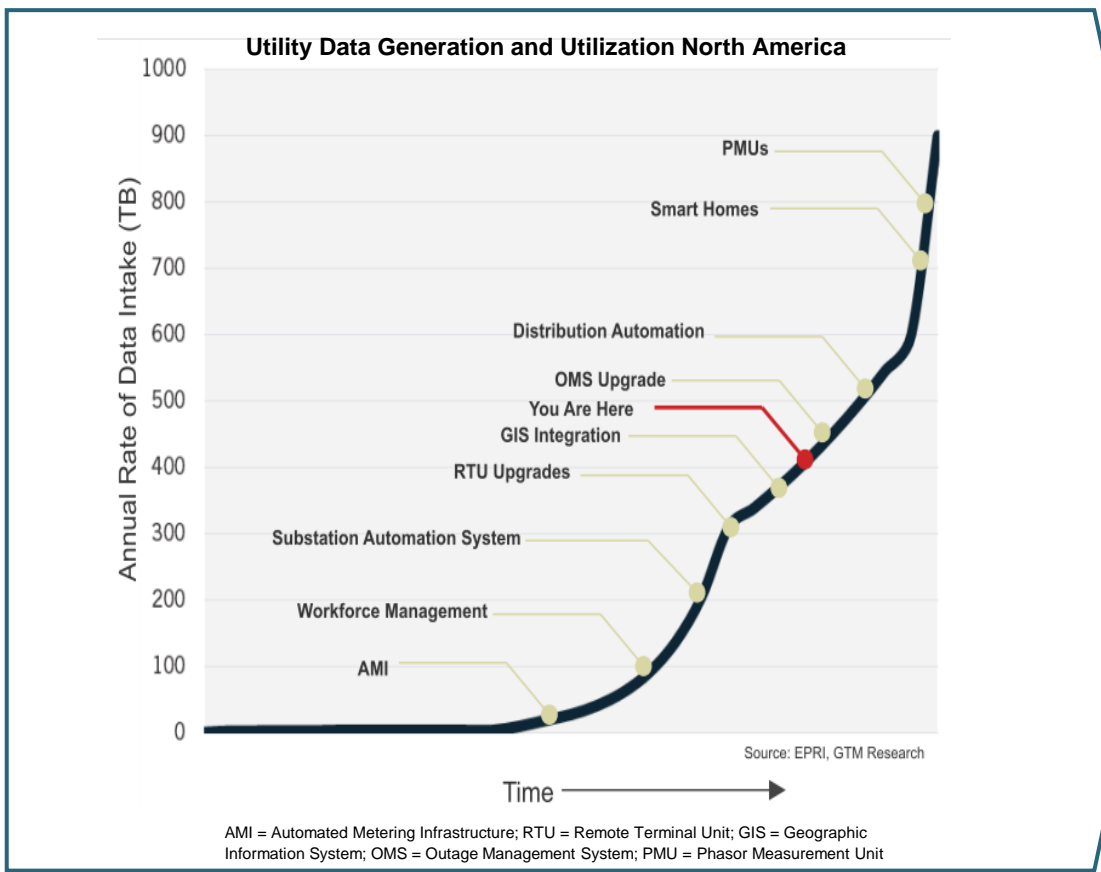
-  Condicion buena
-  Condiciones regular
-  Condiciones critica
-  De alta importancia para la red

Increasing data allows a performant Asset Management

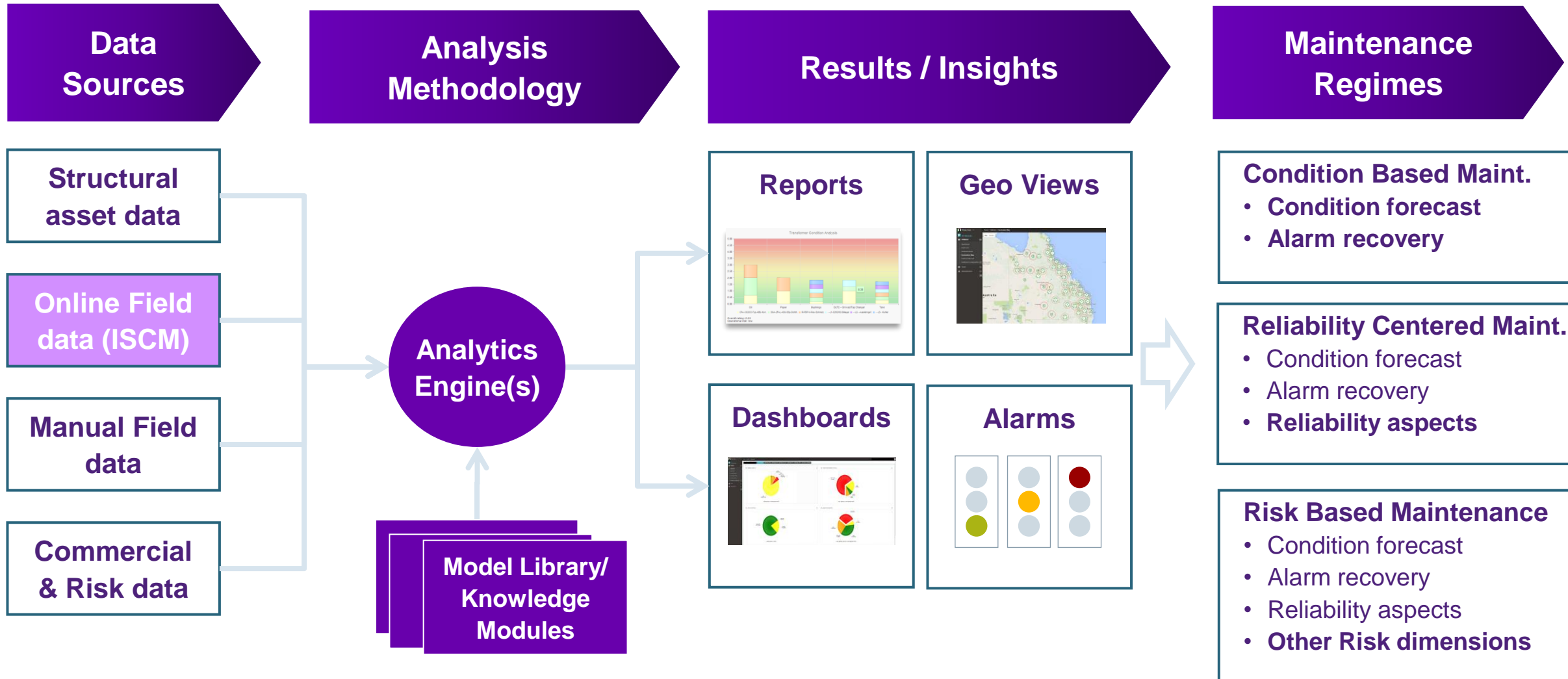


increasing data

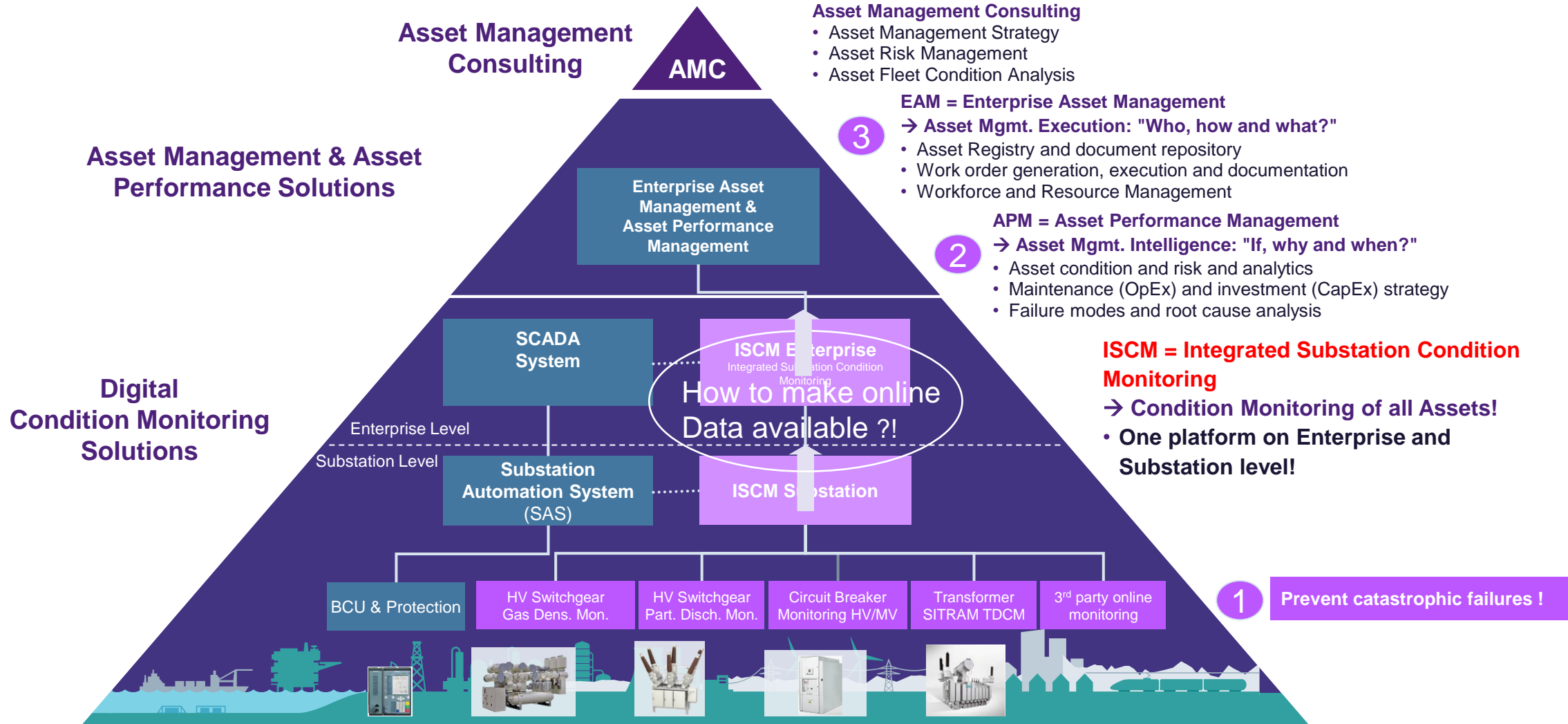
... more data allows a transition from :
time based... to condition based maintenance regimes



The key to improved decisions is to apply the right models to the right data – SW itself is the enabler!



Siemens Energy eco-system supports a vertical data driven Condition Monitoring and Asset Management process for power transmission and distribution



ISCM = Integrated Substation Condition Monitoring
→ **Condition Monitoring of all Assets!**
• **One platform on Enterprise and Substation level!**

ISCM – One Monitoring Platform for all your Assets!



Benefits

- Flexible integration of different online Monitoring Systems for all your Assets
- Only one Monitoring Platform
- Totally scalable
- Many com. protocols available

ISCM: Encuesta a clientes durante un Webinar

¿Dónde ve el mayor aporte de un sistema integrado como el ISCM?



Muchas gracias por su atención !



Siemens Energy Transmission

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