



# Implementing SRE in a Telco with Reliability Enhancing Procedures

SREcon, Dublin, October 2023

Florian Kammermann & Romain Bonjour... **and many others.**



# swisscom

~16,000 employees



Voice & Internet  
Connectivity

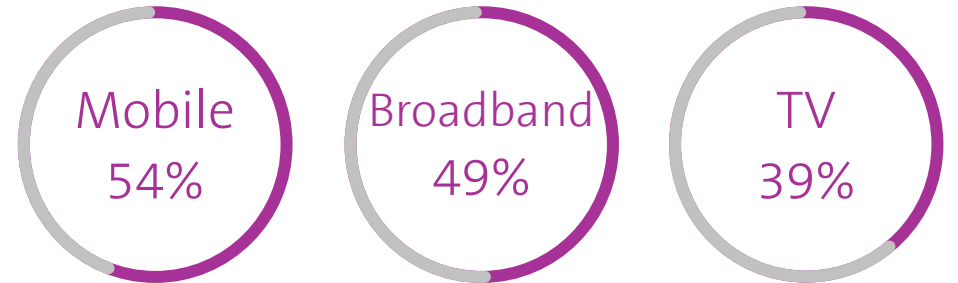


Enterprises  
Services



Emergencies  
Services

B2C market shares (Population, 8.7 Million)



Brand Finance

**Rank 1**

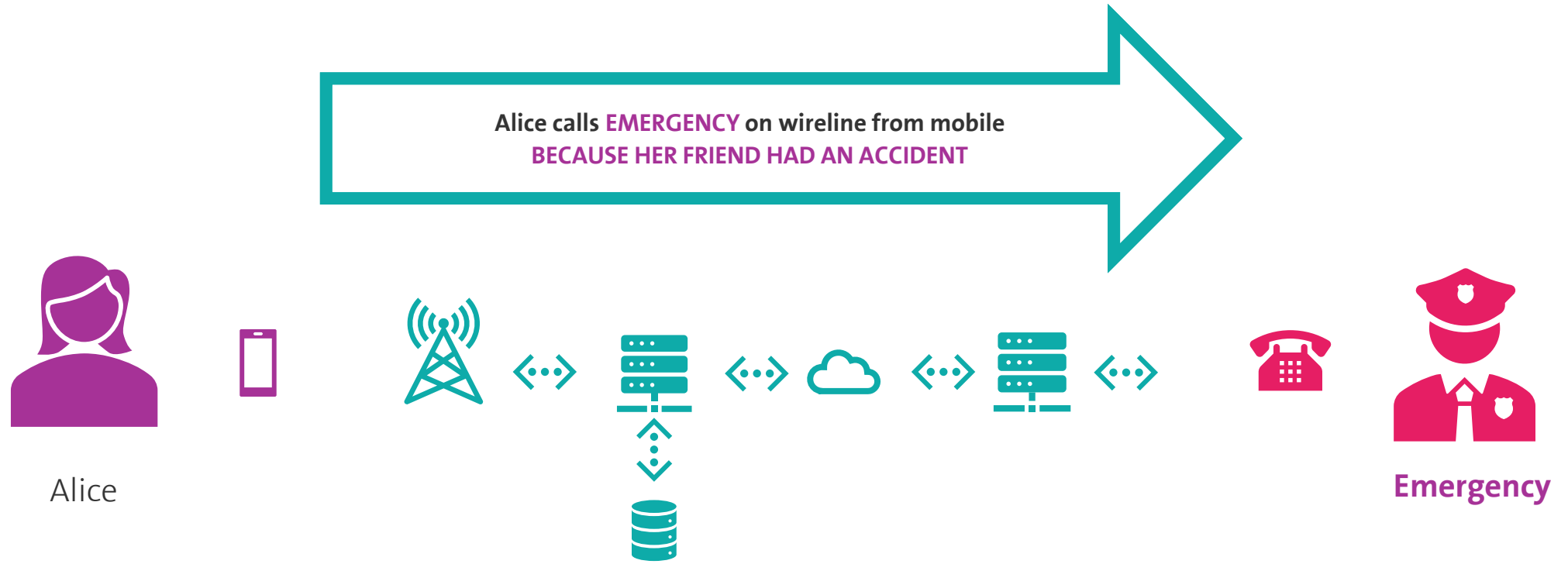
the strongest brands  
in Switzerland



**Nr.1**



# A typical User Journey we produce



~~100%~~



# A complicated context

- Large variety of Services
- Complex E2E chains
- Legacy Technologies
- Very high expectations
  
- As everyone, a lot of business pressure...



Ah, yeah, we do have large scale outages...

Updated  
26.09.2023

## Swisscom boss apologises for massive network outage - newspaper

Reuters

July 14, 2021 7:57 AM GMT+2 · Updated 2 years ago

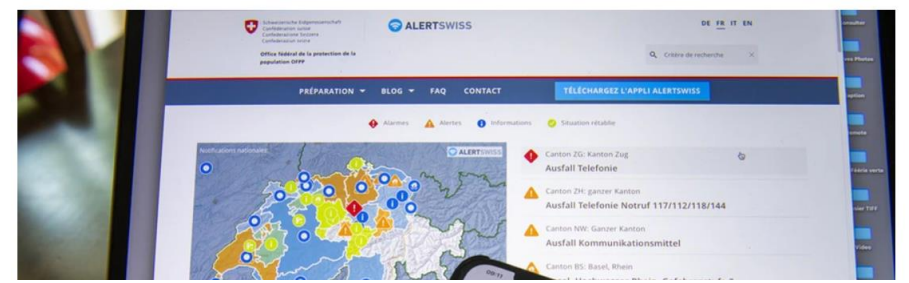


## Swisscom kann Internet-Störung schnell beheben

Swisscom meldet am Dienstagmorgen eine schweizweite Beeinträchtigung des Internets. Spezialisten konnten das Problem schnell beheben.



Swiss Politics > Swisscom resolves nationwide emergency number breakdown





***SRE will save us all***



# SRE is magic, religious, will solve it all

The SRE Enthusiasts were like



The Swisscom Operation Department was more like



# SRE Principles and Best Practices as Inspiration

## Simplicity

Service Centric approach

⚠ Service Modeling

## Service Level Objective

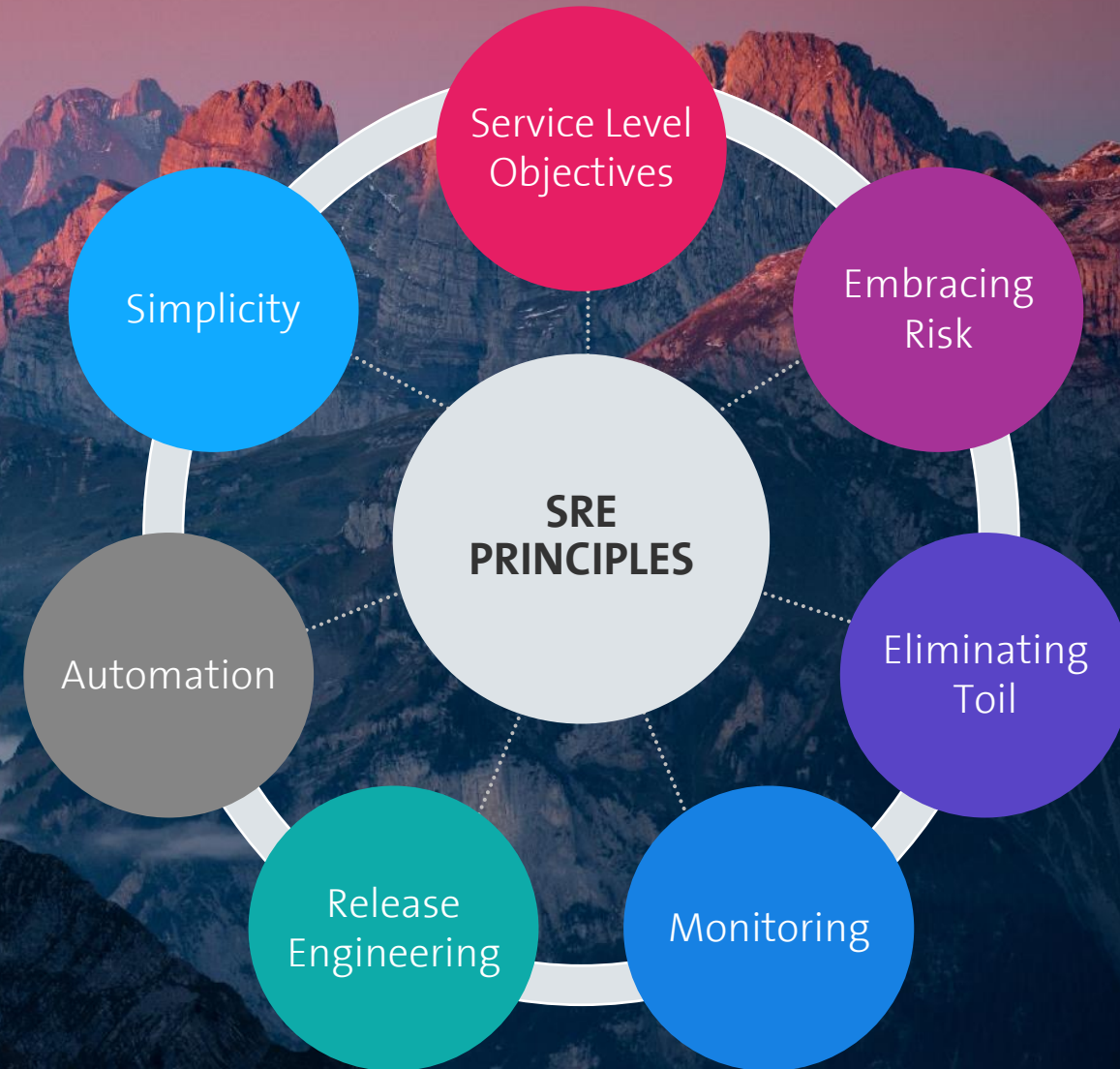
We need a data driven approach to manage Reliability

## Embracing Risk

demystify the 100% Reliability myth

## Monitoring

We need to Monitor the right thing ... User Journeys







***Organizational changes  
are never easy***



*Yeah, internally*

## Challenge #1

**Every department has its own  
understanding of reliability**



## Challenge #2

**Operation and reliability should  
be a continuous process**



## Challenge #3

**Legacy technologies are  
here to stay**



# *A common language on reliability*



## Reliability Enhancing Procedures

REPs are clearly defined **cookbooks** allowing us to scale & measure the implementation of **Reliability practices**



# A initial set of REPs to cover various aspect and change our way of working

REP1  
Model Your **Service  
Definition**

REP5  
Introduce **Service Level  
Objectives**

REP2  
Service **Availability  
Requirements &  
Reliability Design**

SMA  
Service Management  
**Assessment**

REP6  
Service Continuity &  
Disaster Recovery **Plan**

REP4  
Provide Service  
Specification & Usage  
Instruction

REP3  
Service **Roasting**

REP8  
Resilience **Testing in  
Production**

REP9  
Operation **Response  
Testing**



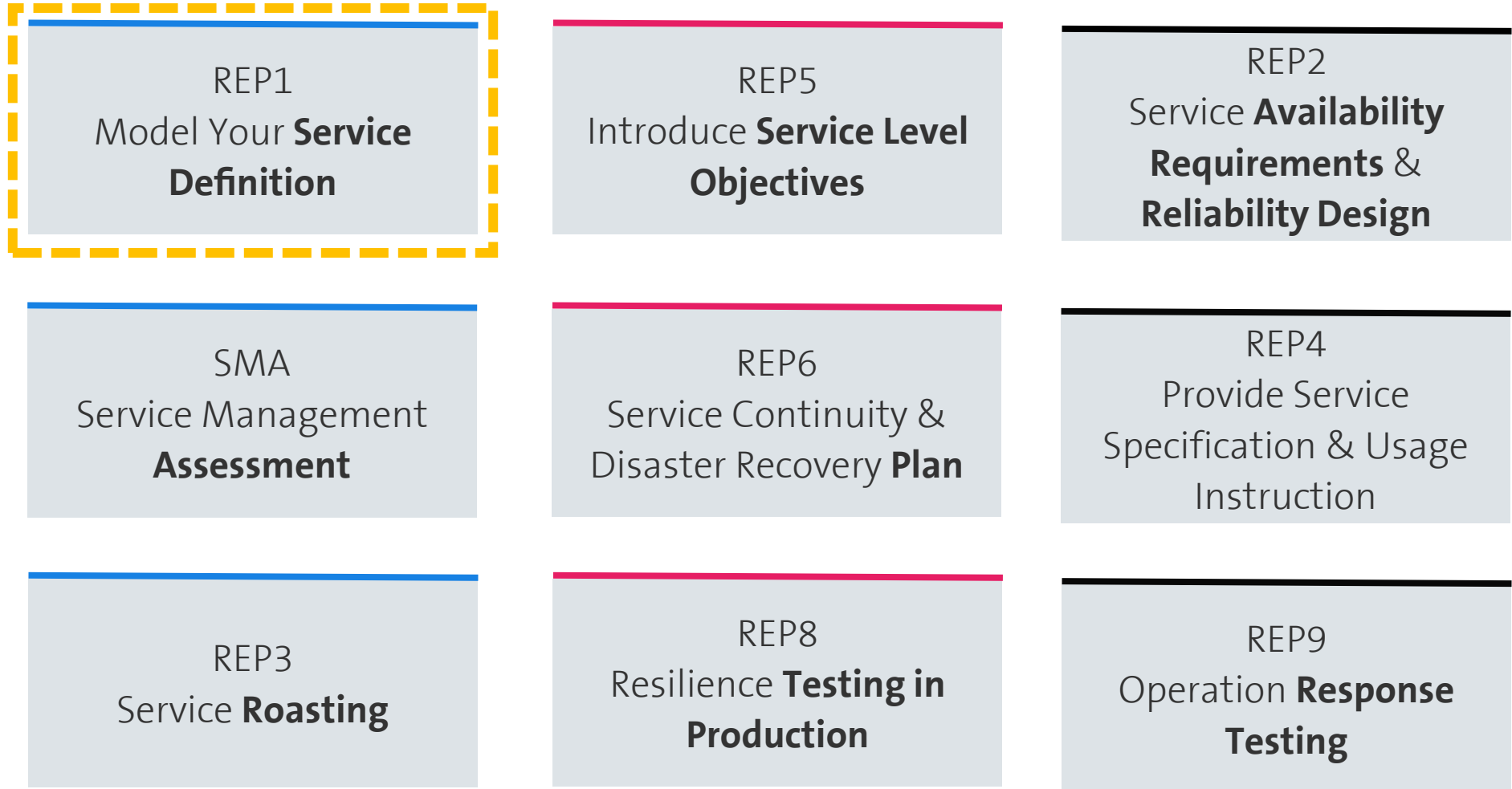
***REPs are pragmatic, scalable,  
easy to teach & apply,  
common way  
of increasing our reliability***





## REP1: Model your Service Definition

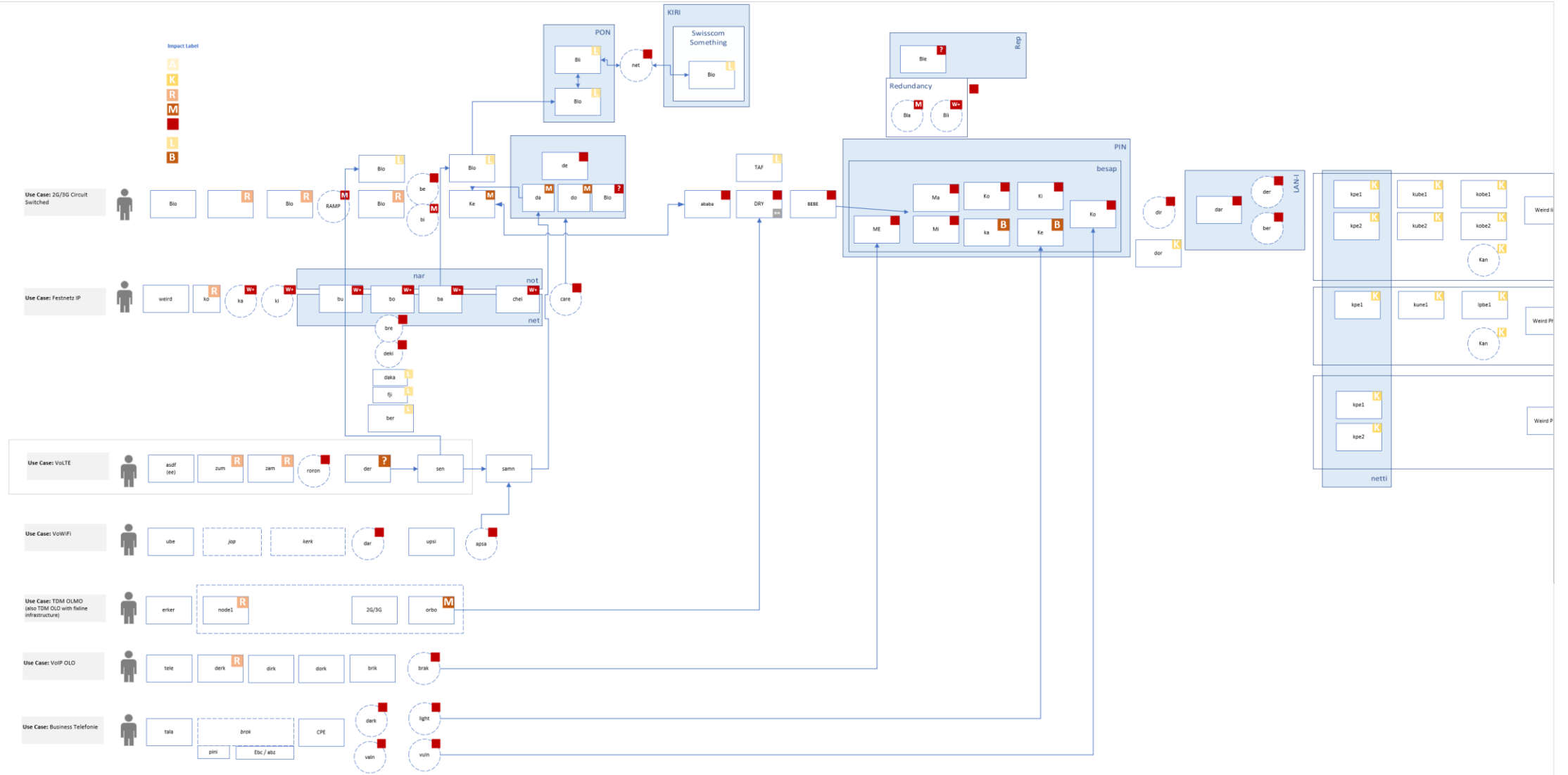
A way to understand and document how our E2E services are produced & operated





# REP1: Model your Service Definition

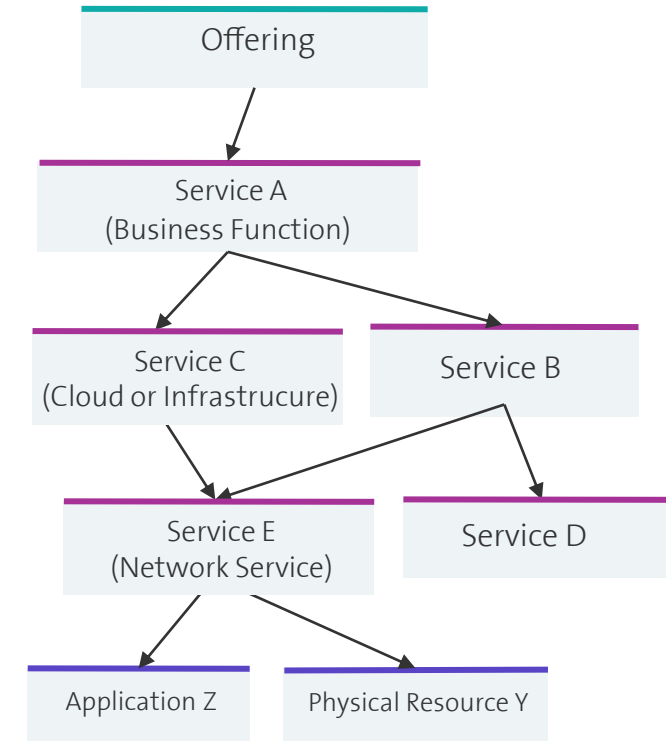
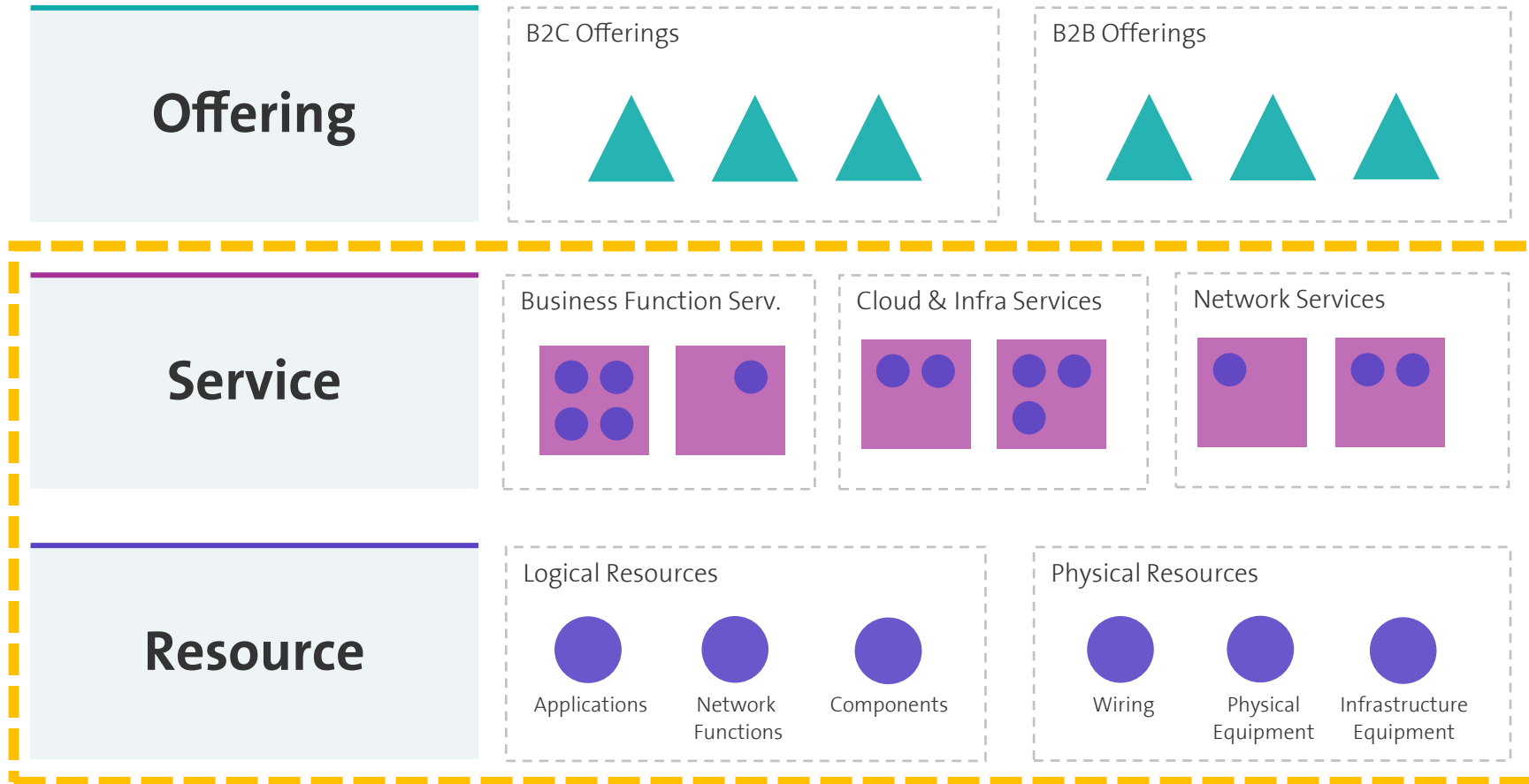
A way to understand and document how our E2E services are produced & operated





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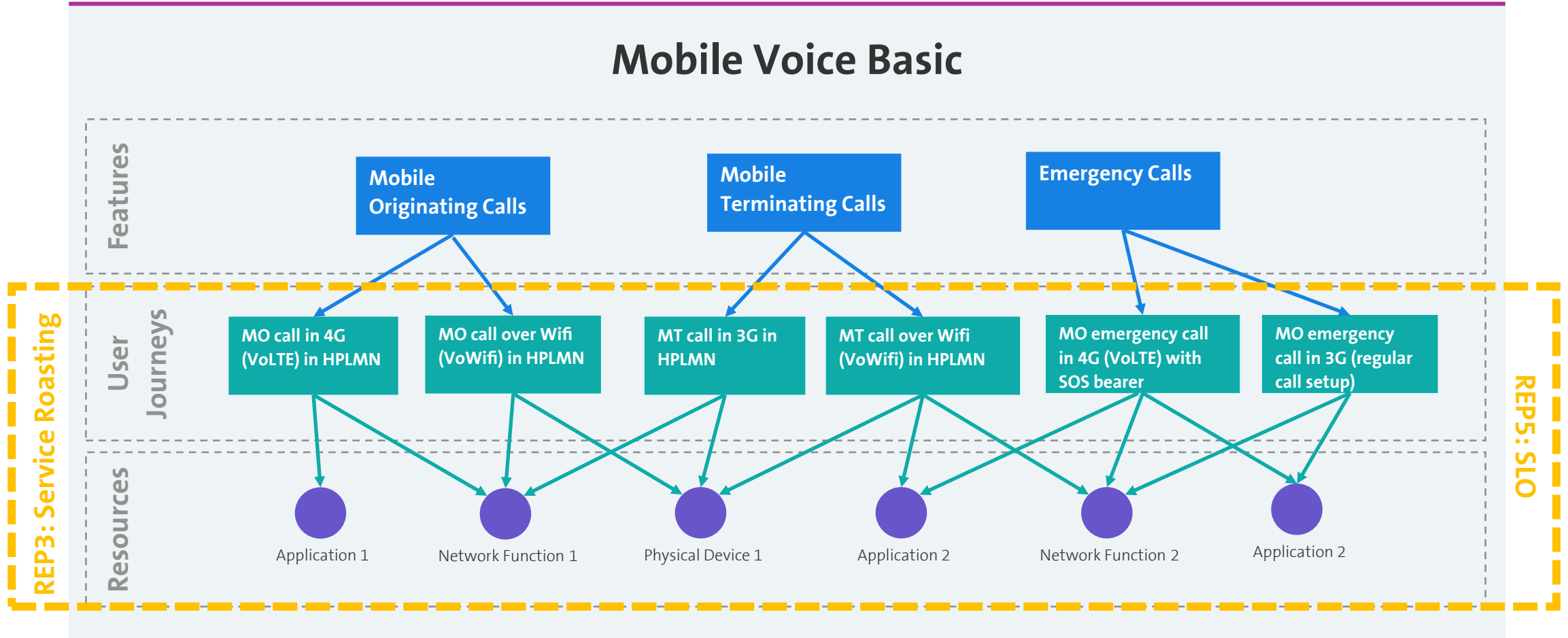
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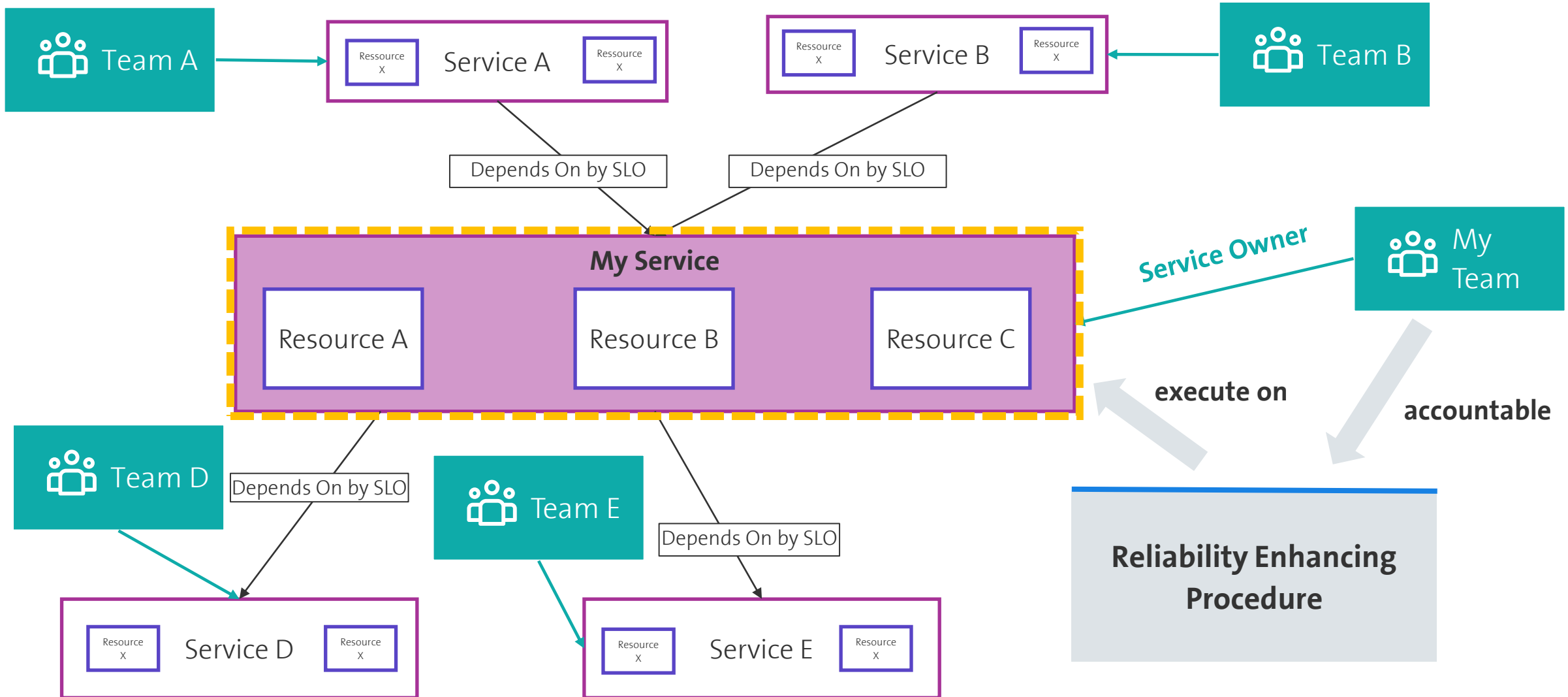
A way to understand and document how our E2E services are produced & operated





# REP1: Model your Service Definition

A way to map accountability on how our E2E services are produced





***REP1 is about getting  
structured data on our Service  
and Resource landscape***



# An initial set of REPs to cover various aspect and change our way of working

REP1  
Model Your **Service**  
**Definition**

Intro

REP2  
Service **Availability**  
**Requirements &**  
**Quality Design**

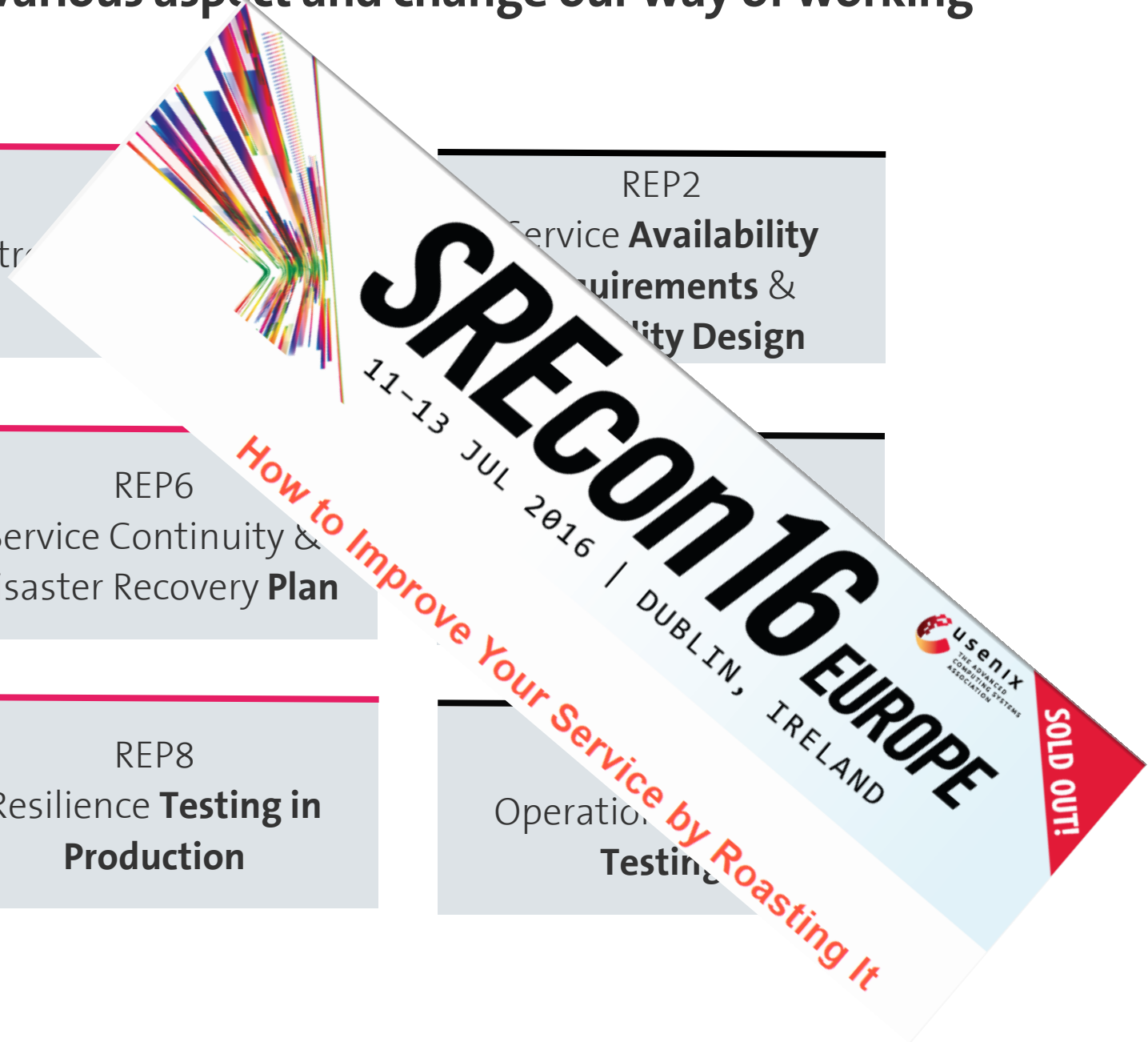
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Service Management  
**Assessment**

REP6  
Service Continuity &  
Disaster Recovery **Plan**

REP3  
Service **Roasting**

REP8  
Resilience **Testing in**  
**Production**

Operational  
**Testing**





## REP3: Service Roasting





# REP3: Service Roasting

## Phase 1 – Get the big pictures

✓ A clear service description

✓ Big pictures with lenses

✓ Common understanding



# REP3: Service Roasting

## Phase 2 – Roasting

		IMPACT				
		Negligible	Low	Medium	High	Severe
PROBABILITY	Almost certain		1 risk	2 risks		
	Very likely	1 risk	1 risk			
	Likely		2 risks	1 risk	2 risks	1 risk
	Unlikely	5 risks	5 risks	5 risks	1 risk	1 risk
	Very unlikely	2 risks		2 risks	3 risks	1 risk

✓ For every lines, boxes, and arrows, ask yourself:  
**What can possibly go wrong ?**

✓ Clear starting point



# REP3: Service Roasting

## Phase 3 – Continuous Improvement



✓ Reliability Backlog

✓ Ready for SLO breach

✓ Transparency for customers



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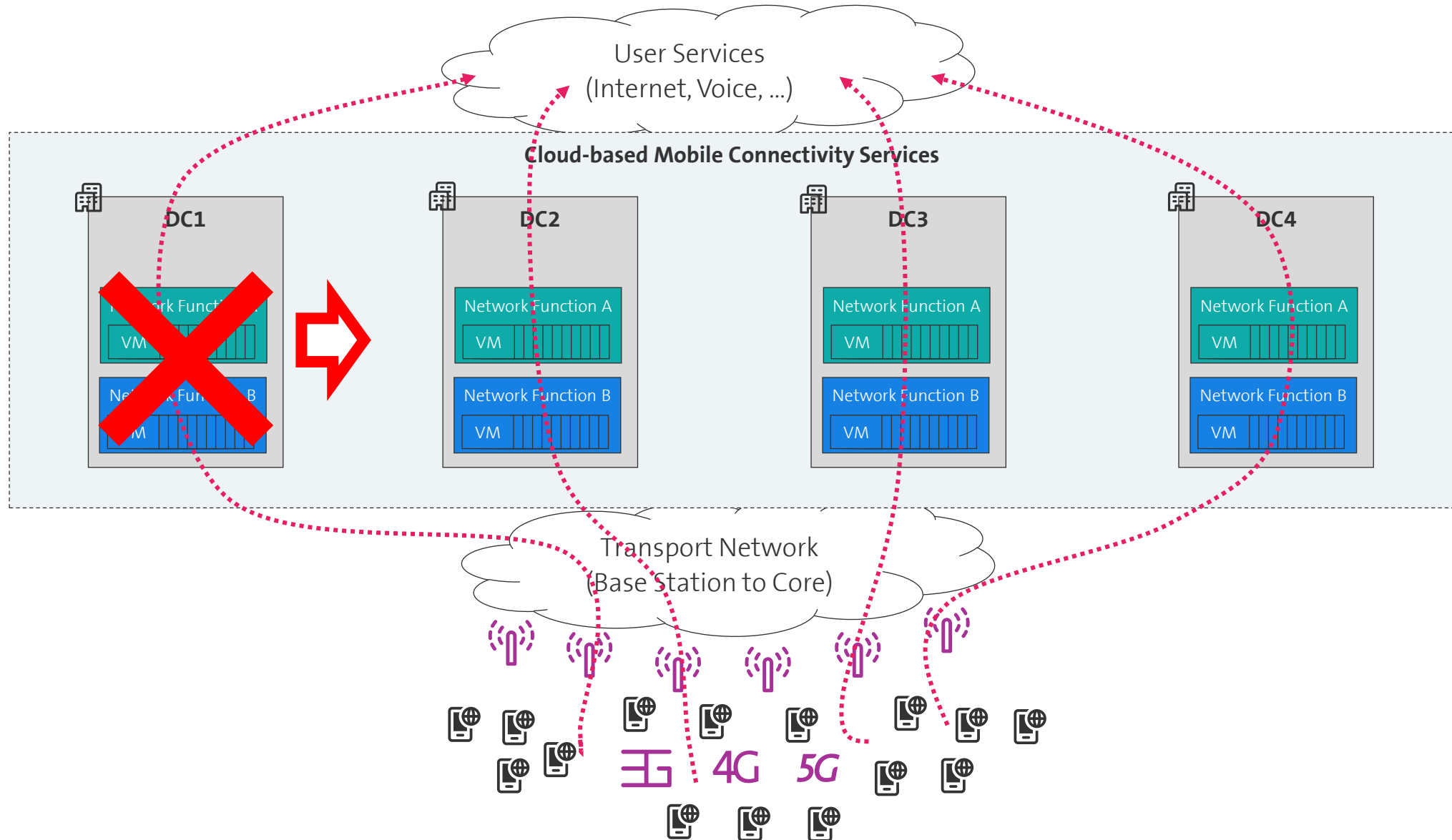
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Operation **Response  
Testing**



# REP8: Testing in Production

## Failovers in-between our Datacenters

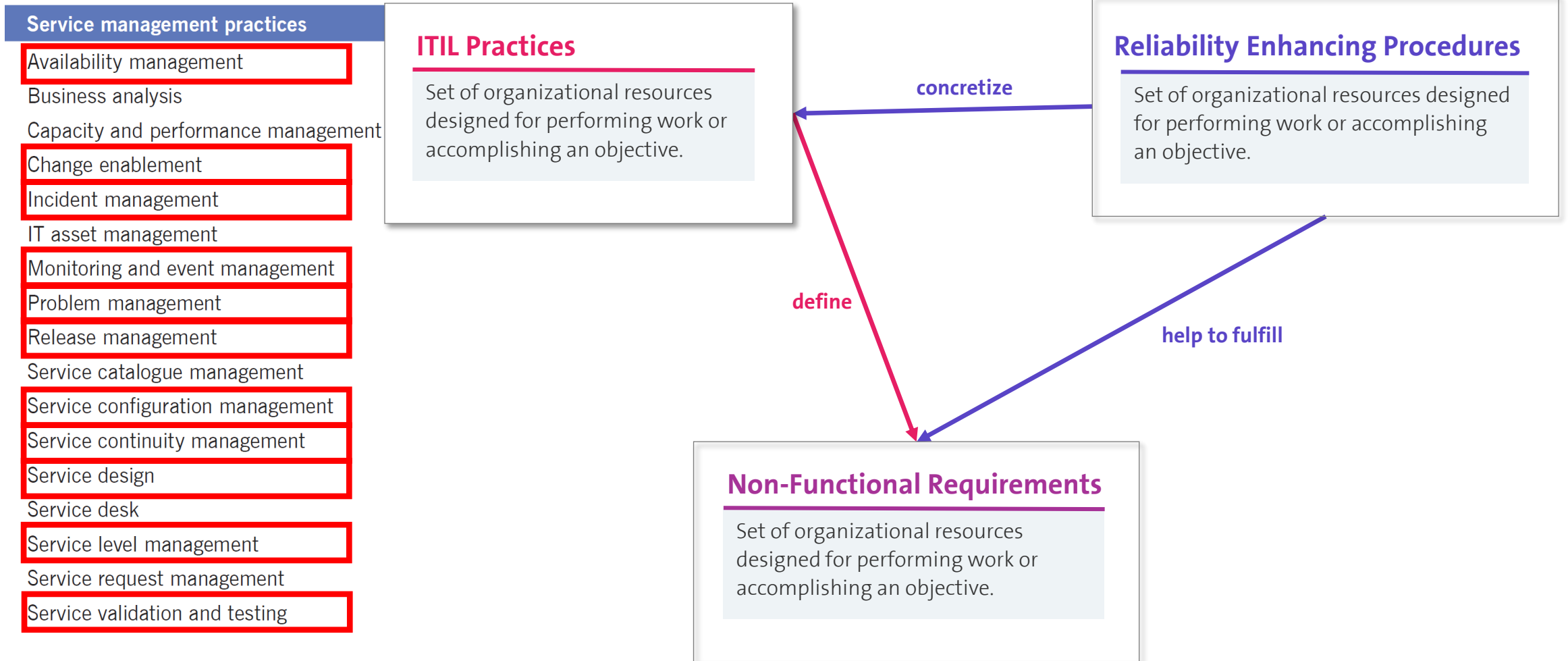




***Don't forget the ITIL Practices***



# How we married ITIL and SRE





Extremely  
Powerfull

## Reliability Enhancing Procedures

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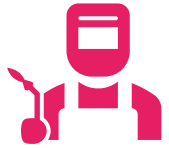




***Don't fight the system, use it,  
make it better***



## The REPs allow us to fulfill various needs at once



Implement *SREish* practices



Clear Procedure & Deliverable



Measure changes



Help people to rethink



Increase service maturity



Provide a common language



**All good now?**



# Reach out



# and thank you

## Telco Journey to SRE

