

Annual Safety Summit 19

12-13 November 2019

Cologne, Germany

#SafetySummit19

SAFETY PERFORMANCE MANAGEMENT for small and medium-sized operators

Geert Hulshof



Break-out session outline



Introduction

PART 1

- Safety Objectives
- Relevant stakeholders
- Types of Safety Performance Indicators (SPI's)
- Defining the right SPI's
- Measuring and monitoring safety performance
- Safety Performance Specifications (SPS's)
- Acceptable Level of Safety Performance
- Improving safety performance
- Safety Performance Targets (SPT's)

PART 2

- Questions & Answers (using Slido)

Reflection by *Mr. Alberto Ottomaniello* – EASA Air Operations (OPS) Expert

- Leaflet with example SPI dashboard for:
 - Flight Operations
 - Ground Operations (FBO)

Sli.do Poll #1, #2 and #3



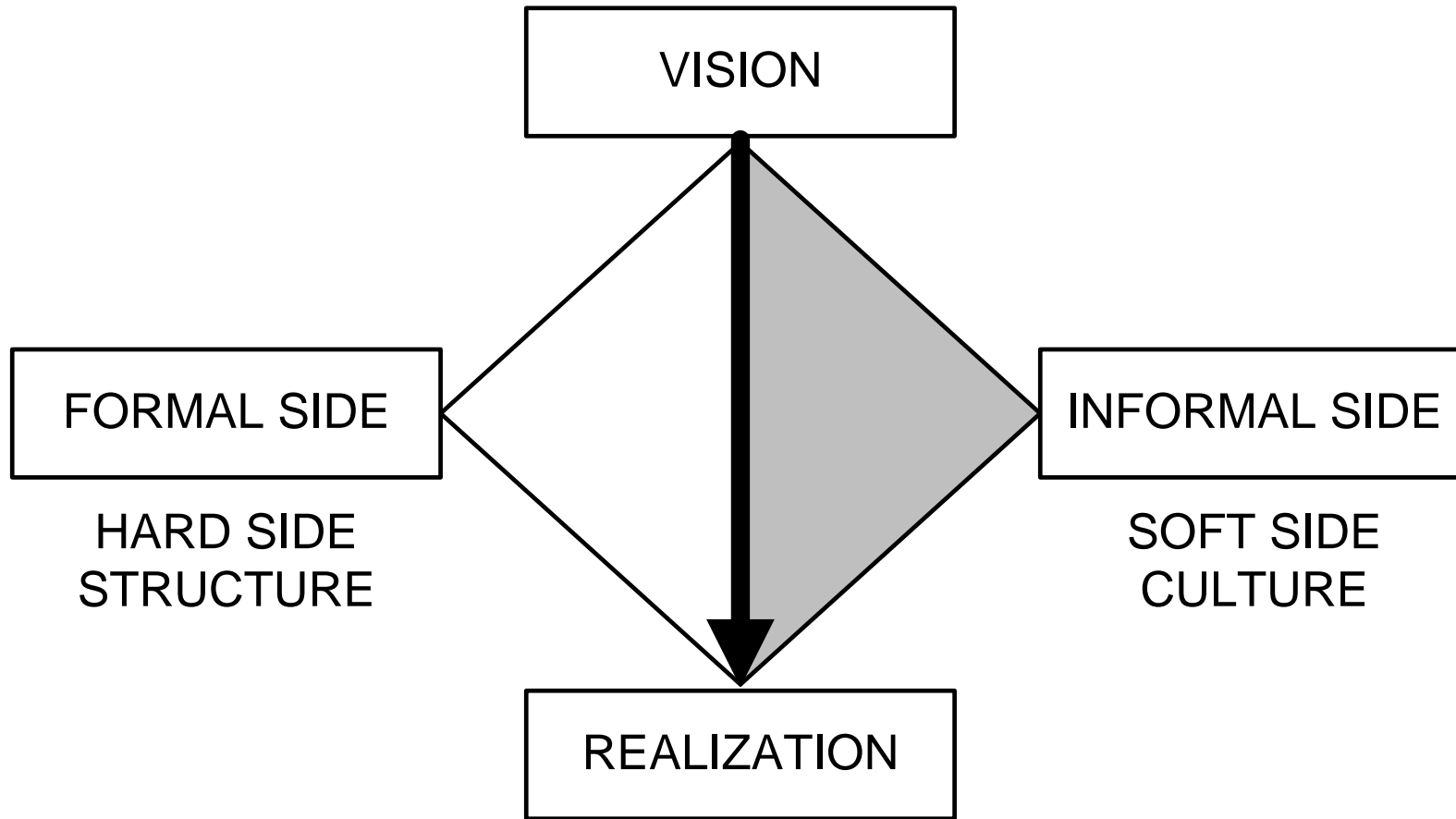
SAFETY REVIEW BOARD

Safety

The state in which risks associated with aviation activities, related to, or in direct support of the operation of aircraft are (1) **REDUCED** and (2) **CONTROLLED** to an acceptable level.

Source: ICAO Annex 19 & Safety Management Manual (SMM) 4th Edition

From vision to realization



Safety Performance Management



Prerequisites for the Aviation Service Provider:

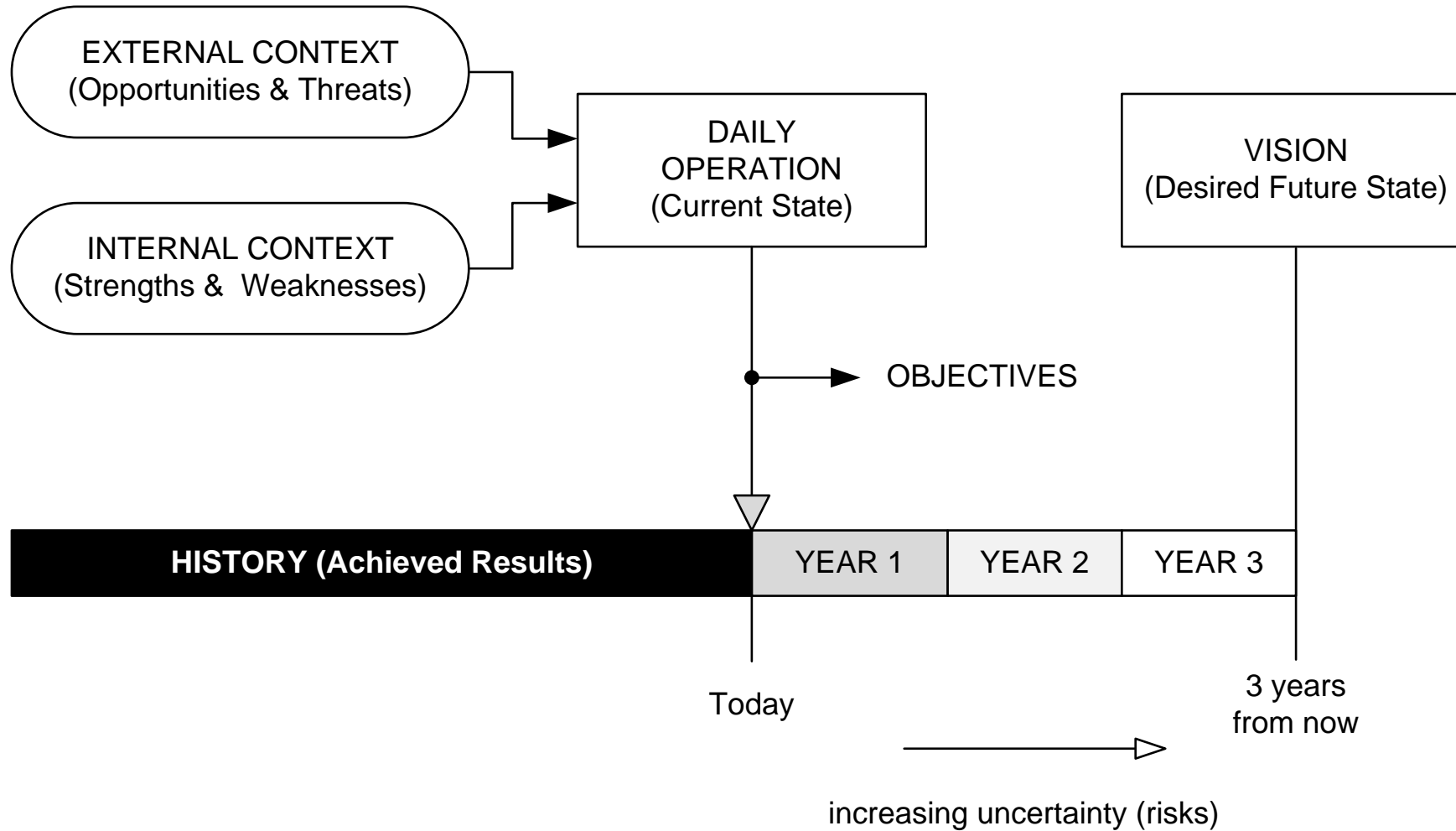
1

an **INTERNAL DRIVE TO IMPROVE** its performance.

2

convinced that performance measurement is an **APPROPRIATE TOOL** for this purpose.

From vision to realization



Safety Objectives

Initiatives to improve safety awareness, competence and performance

- **PROJECT OBJECTIVES** (one-time achievements / project results / milestones)
- **PERFORMANCE OBJECTIVES** (recurring achievements / process results / ongoing)

Outcome (Result) Indicators

Identify issues and trends in past performance

1. **HIGH CONSEQUENCE outcome indicators** (accidents, major and minor injuries)
2. **LOW CONSEQUENCE outcome indicators** (near misses, occurrences, FDM-triggers, non-compliances, non-conformances, complaints, audit findings)

“Just Culture”



IT'S NOT A DISASTER ...
... JUST A LEARNING EXPERIENCE.

Outcome (Result) Indicators

Identify issues and trends in past performance

3. **PROCESS / ACTIVITY outcome indicators** (process or activity results, risk mitigating measures)
4. **HUMAN CAPABILITIES / RESOURCES indicators** (competence, experience, adequacy and availability of resources)

“In safety, every single process/activity is important and counts. None is excluded!”

4 Tiers in Safety Performance Indicators



Tier	Tier 1	Tier 2	Tier 3 (*)	Tier 4 (*)
Description	High Consequence Outcome SPI	Low Consequence Outcome SPI	Process / Activity Outcome SPI	Human Capability / Resource SPI
Leading or Lagging	Lagging	Lagging	Leading	Leading
Actionable	No	No	Yes	Yes
Benchmarking (CSPI)	Yes	Yes	No	No
Specification (SPS)	No	No	Yes	Yes
Target setting (SPT)	No	No	Yes	Yes
Static or Evolving	Static	Static	Evolve over time	Evolve over time

Relevant SPI stakeholders



6	World-wide	ICAO	Global Aviation Safety Plan	Collecting data	
5	Europe	EASA	European Safety Plan	Collecting data	
4	State	NCAA	State Safety Plan	Collecting data	
3	Operator	Accountable Manager	Safety Management System	Collecting data	
2	Department	Responsible Manager	Standard Operating Procedures	Collecting data	
1	Individual	Crew / Staff	Actions leading to outcomes / results	"Creating data"	Exposed to hazards and safety risks

Be Safe – Be healthy – Be Happy !



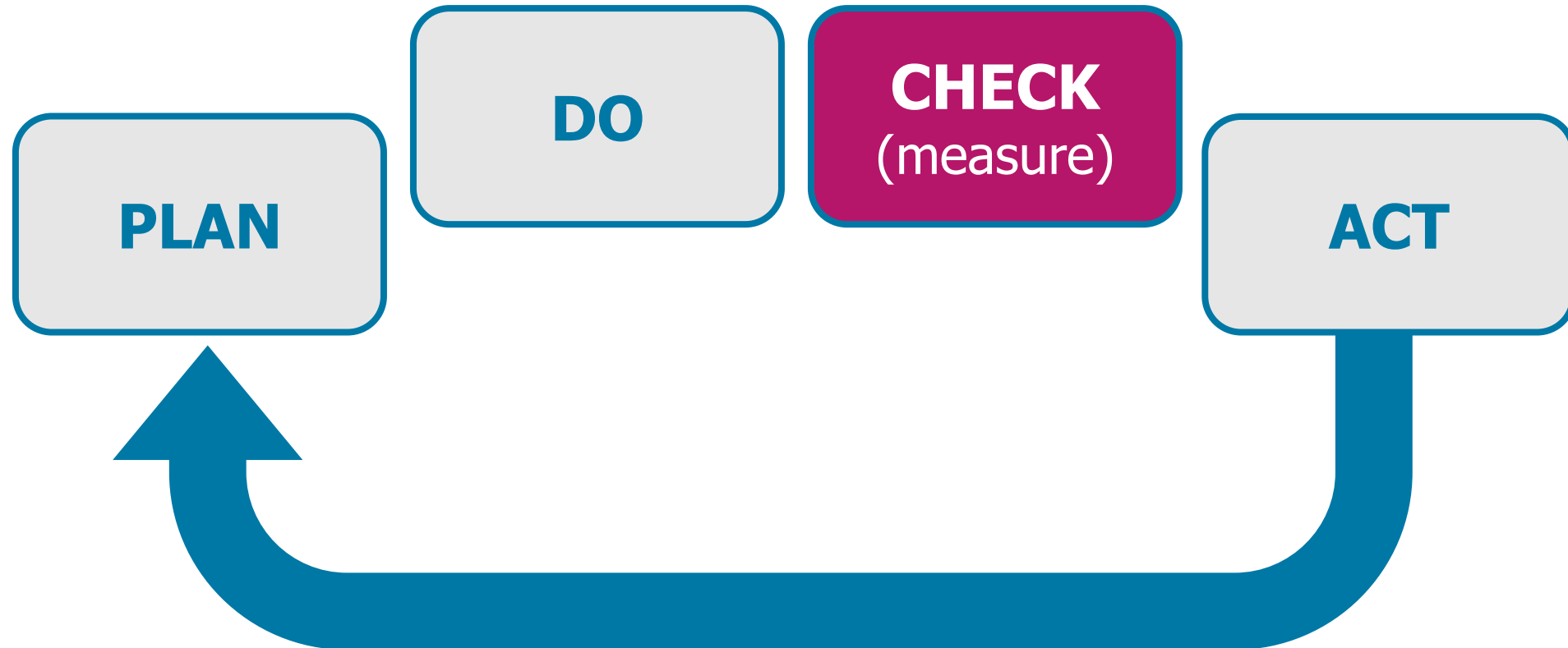
Safety is achieved by staff members at the workplace !

- ✓ Dispatches
- ✓ Ground Handlers
- ✓ Technicians
- ✓ Flight Crew
- ✓ Cabin Crew
- ✓ Task Specialists
- ✓ ATC controllers
- ✓ Etc.



Quality Management - PDCA

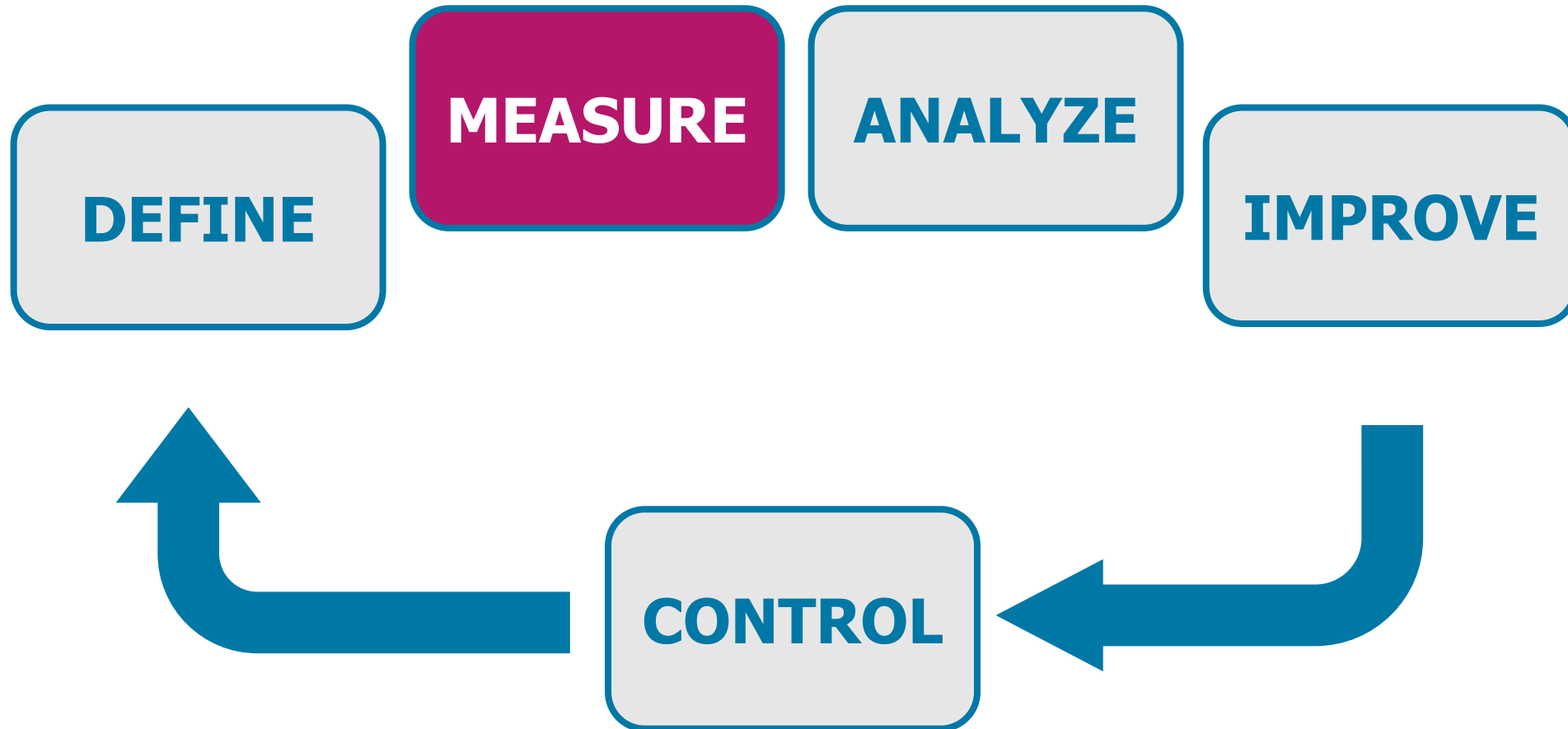
e.g. ISO 9001:2015 / AS9110C



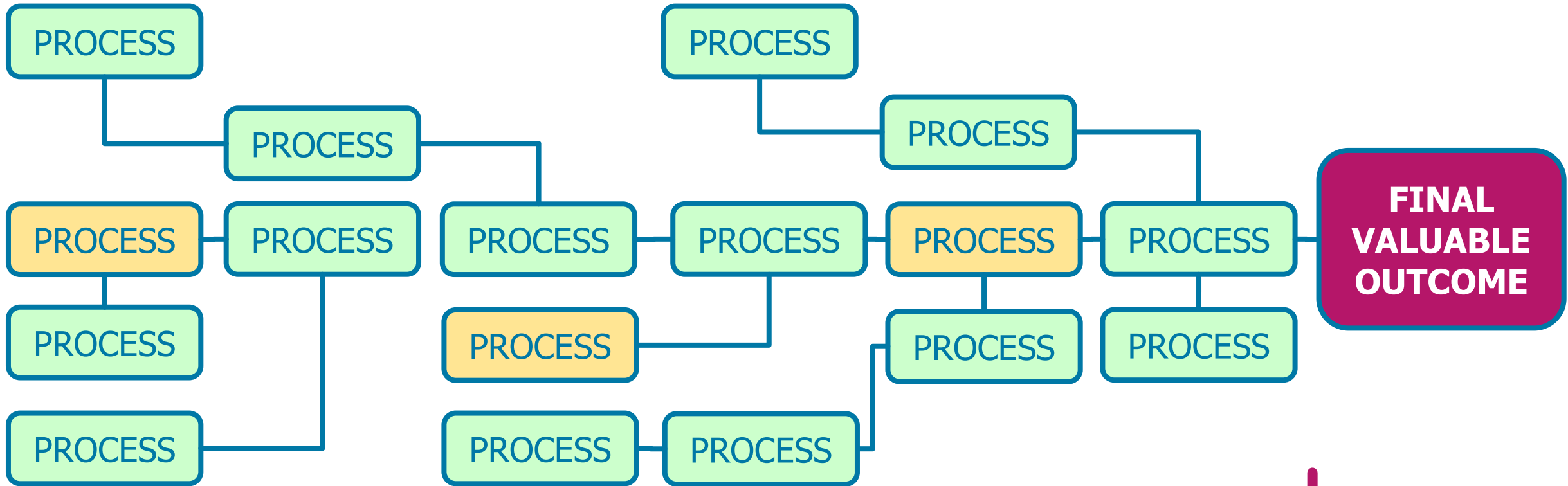
Process performance improvement – DMAIC



e.g. Lean / SixSigma

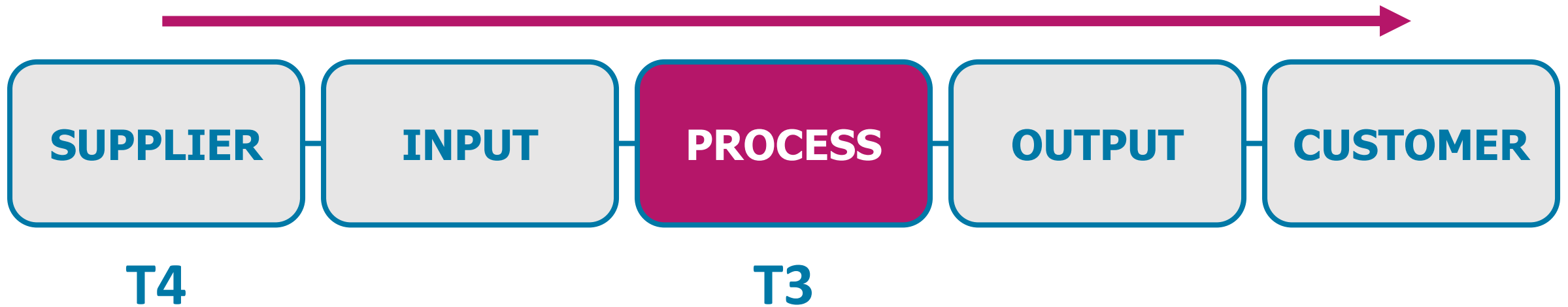


Interaction of processes



T3 & T4 | T1 & T2

Process description - SIPOC



- Activities and their sequence
- Resources / capabilities
- Operating manuals / checklists
- Risks & risk mitigating measures
- Process Performance Information

Safety Performance Indicator

A data-based safety parameter used for
(1) **MONITORING** and (2) **ASSESSING** safety performance.



Safety Performance Measurement & Monitoring Process

Sli.do Poll #4 and #5

SPI priority setting



SPI Feasibility	HIGH	3	1
	LOW	4	2
		LOW	HIGH
		Impact on Safety	

Safety Performance Dashboard



T1 SPI's

T2 SPI's

T3 SPI's

Process & Activity results

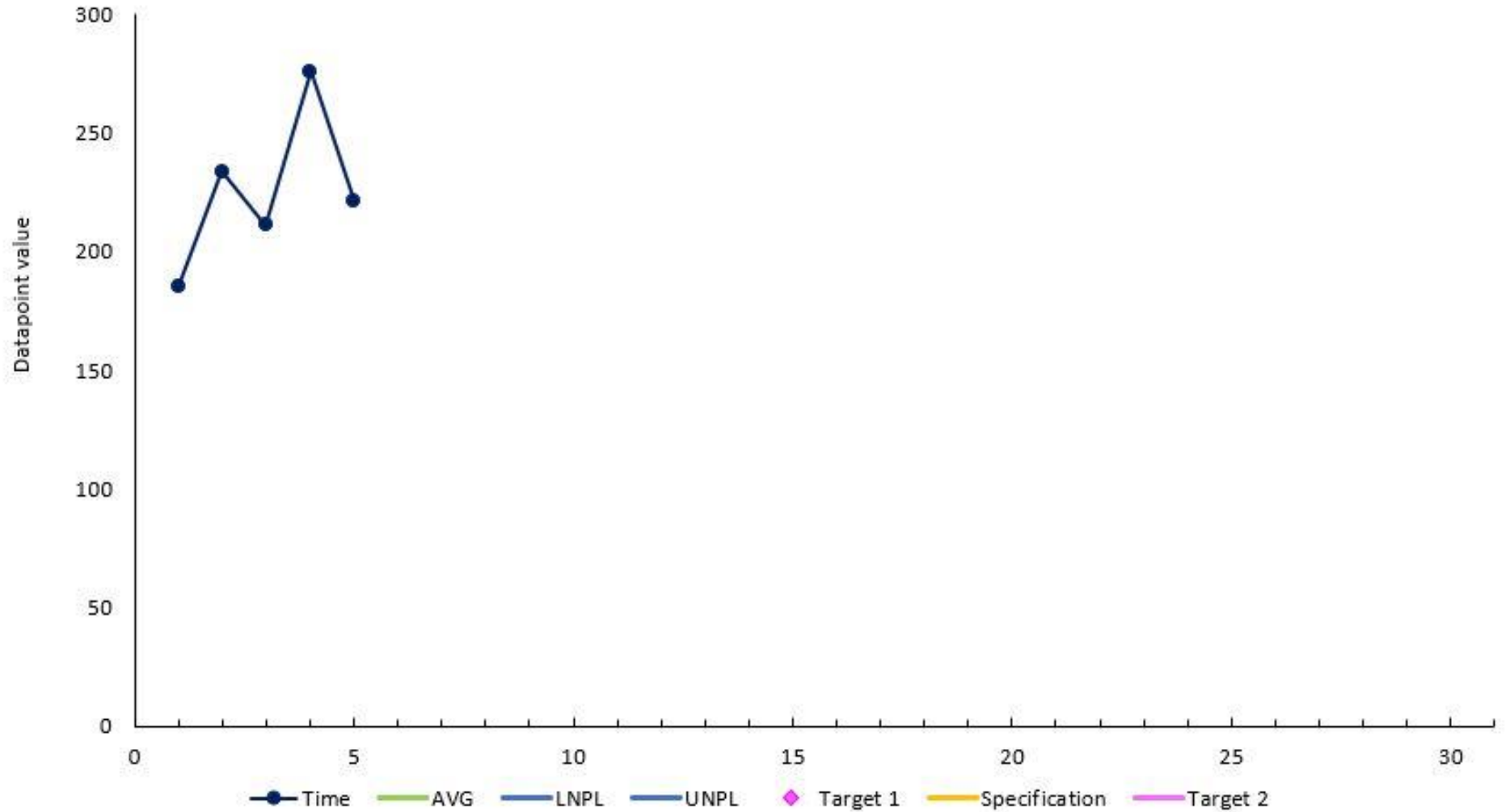
T4 SPI's

Human Capabilities & Resources

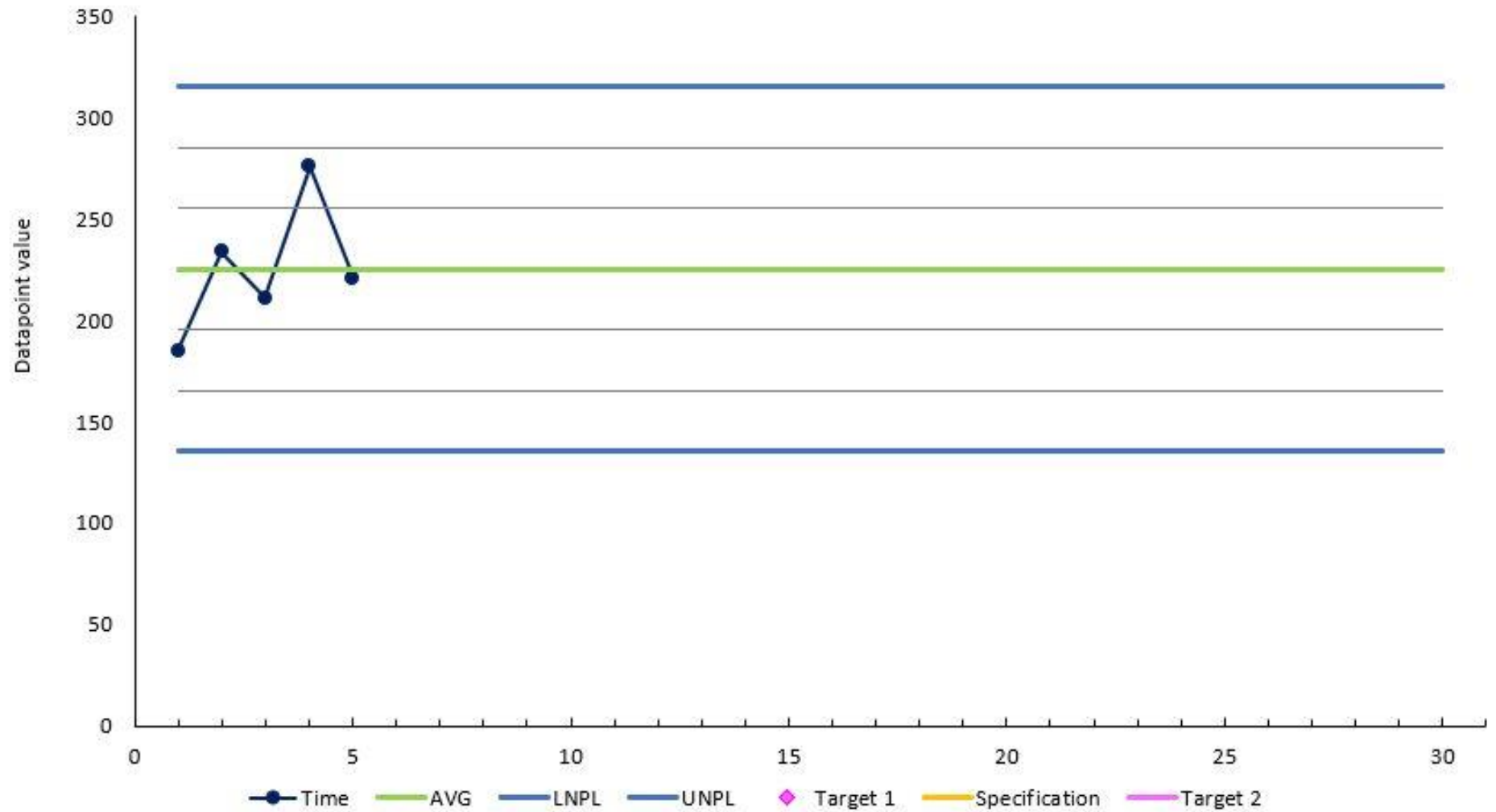
MILESTONES

Project
Achievements

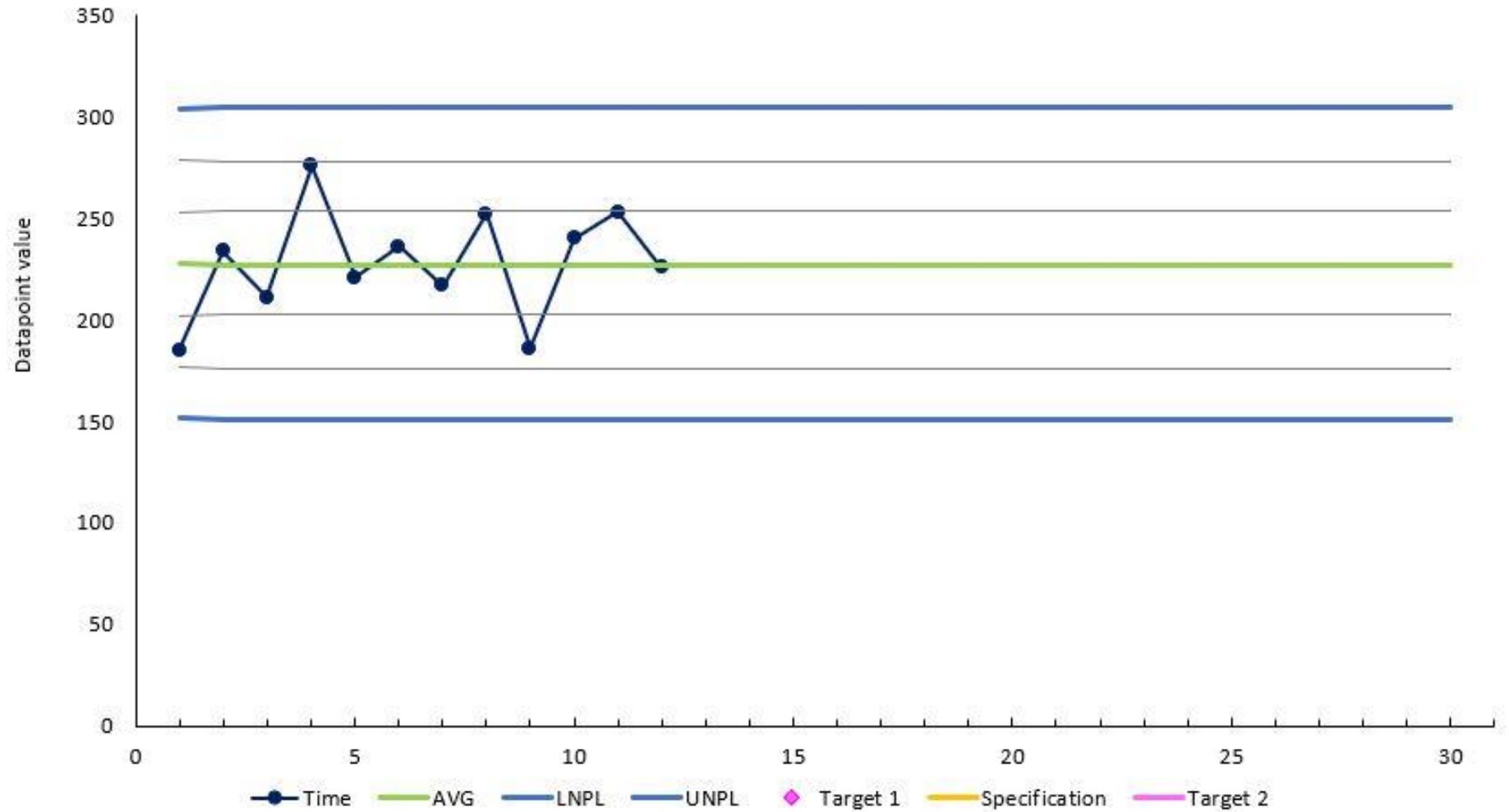
Process Control Chart



Process Control Chart



Process Control Chart



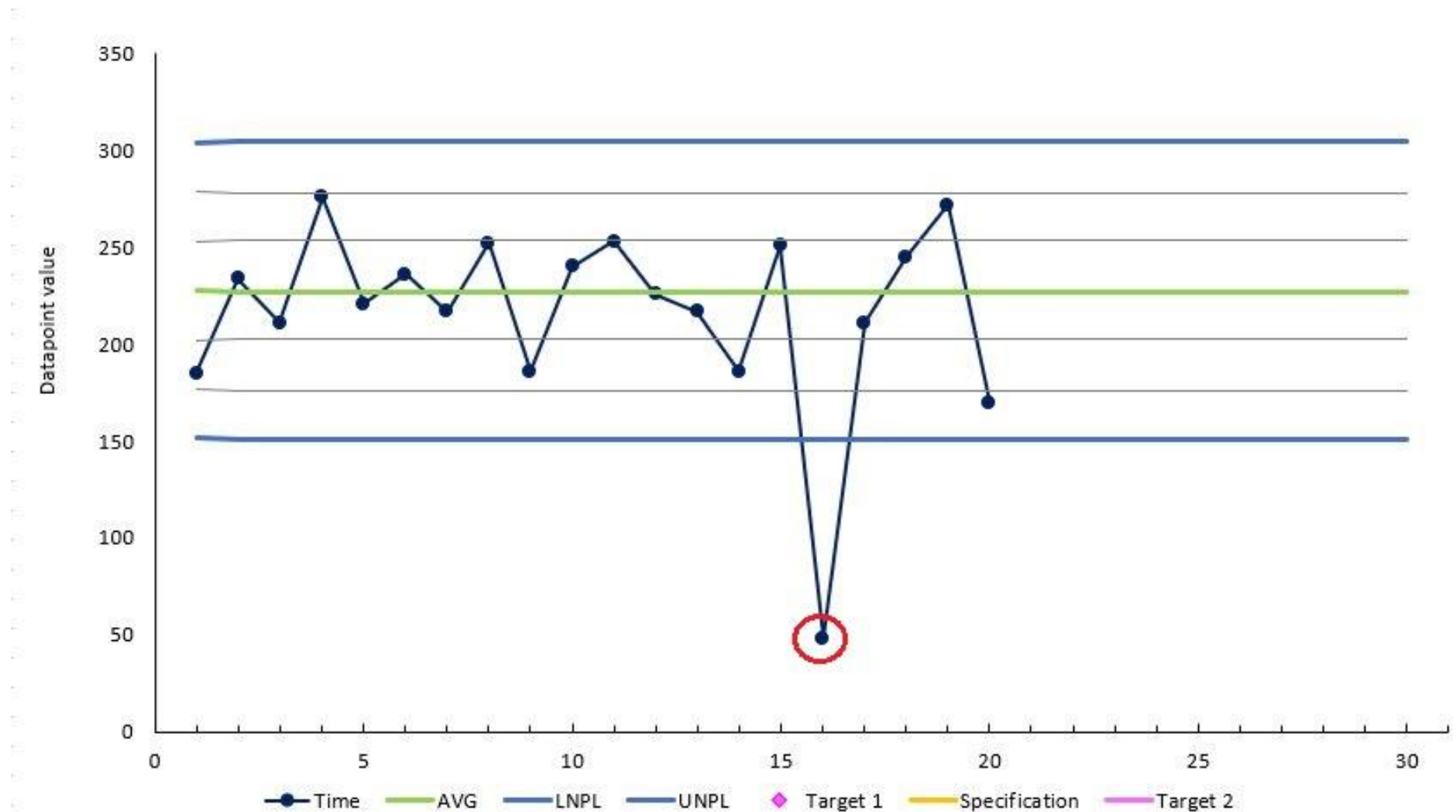
Monitor Safety Performance

Act on **SIGNALS** – not on **NOISE** (natural process variation)

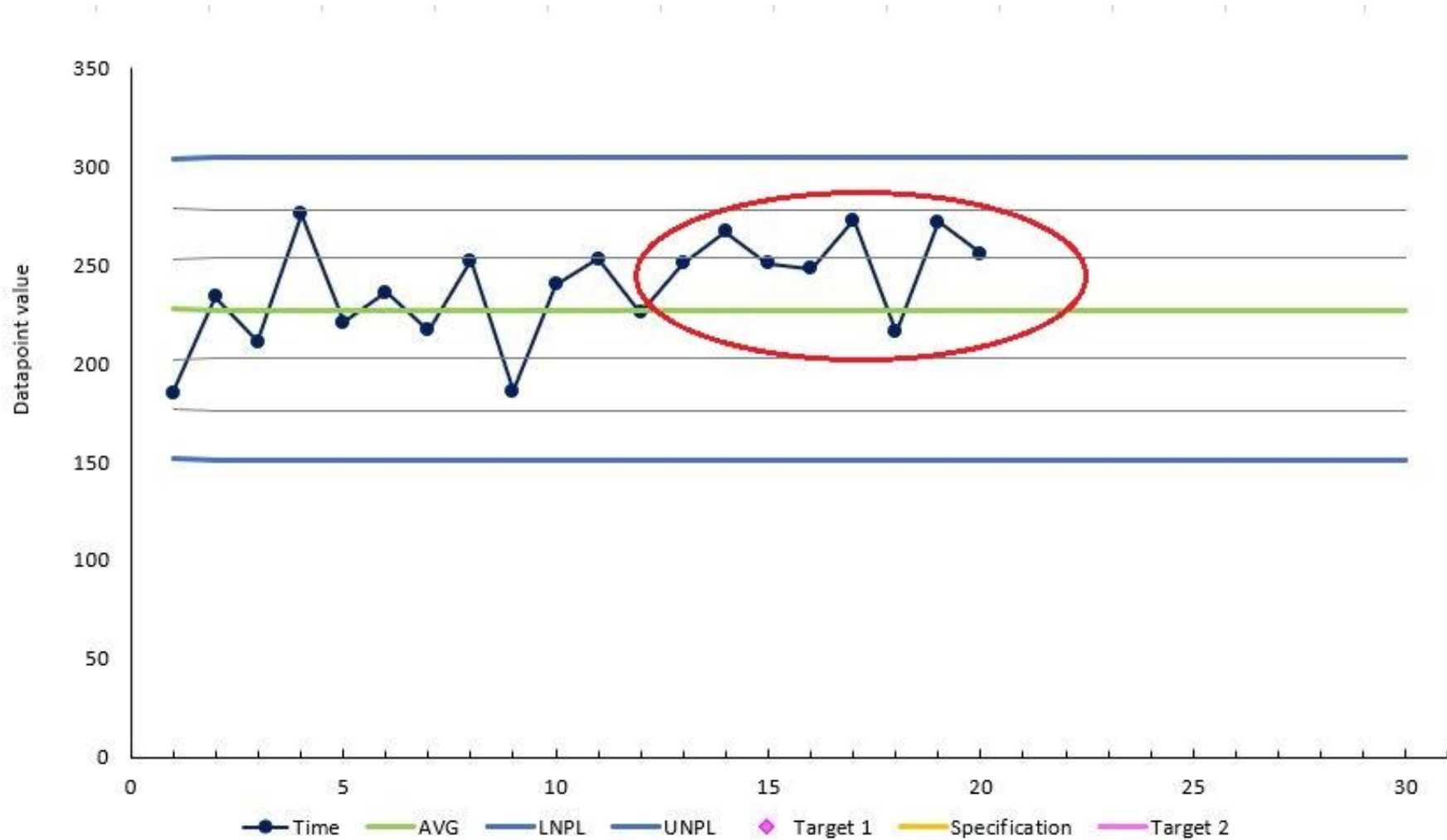
Identify PRACTICAL DRIFT.

Western Electric Rules – outliner

(1956)



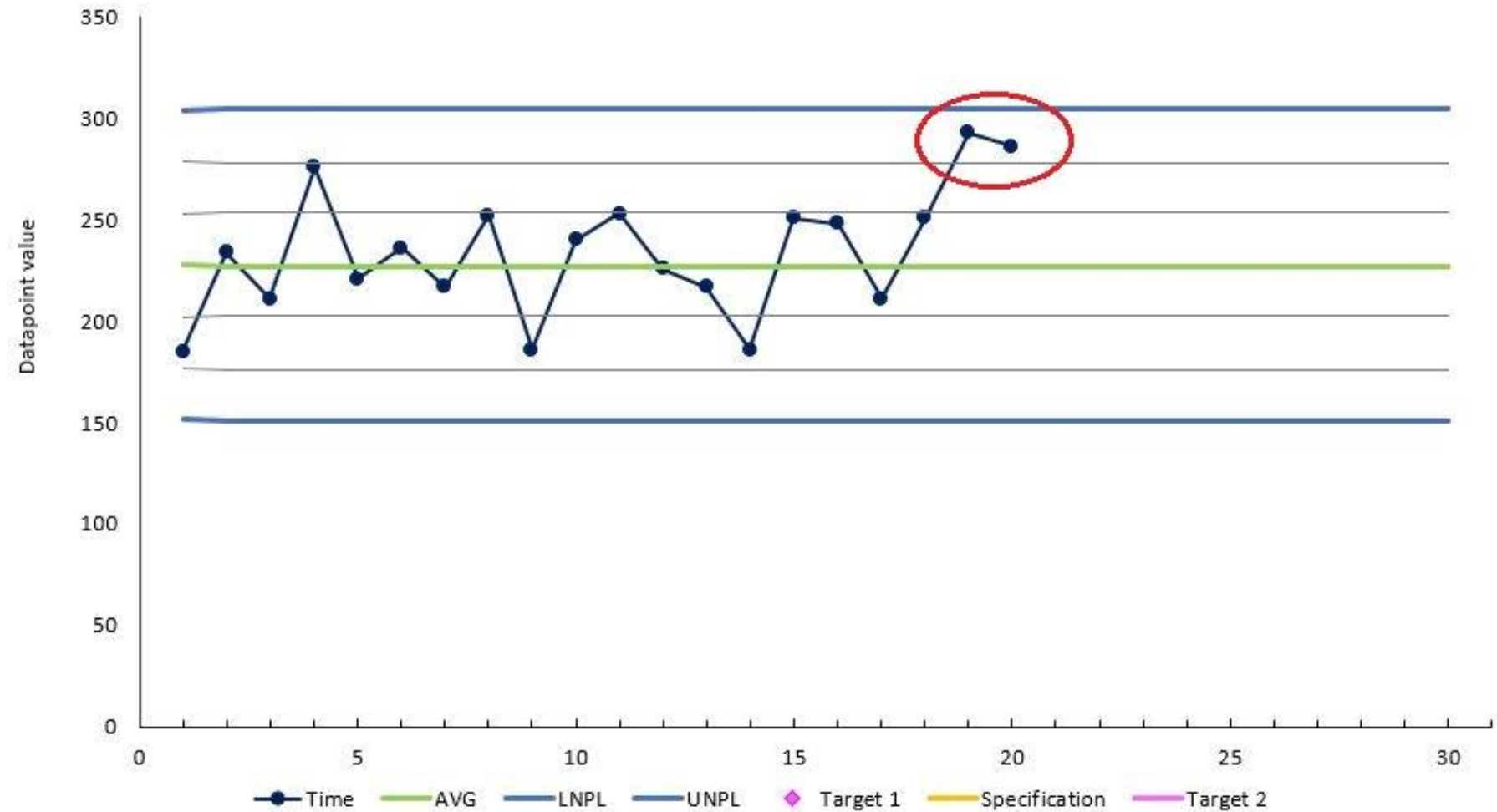
Western Electric Rules – long run



Western Electric Rules – short run



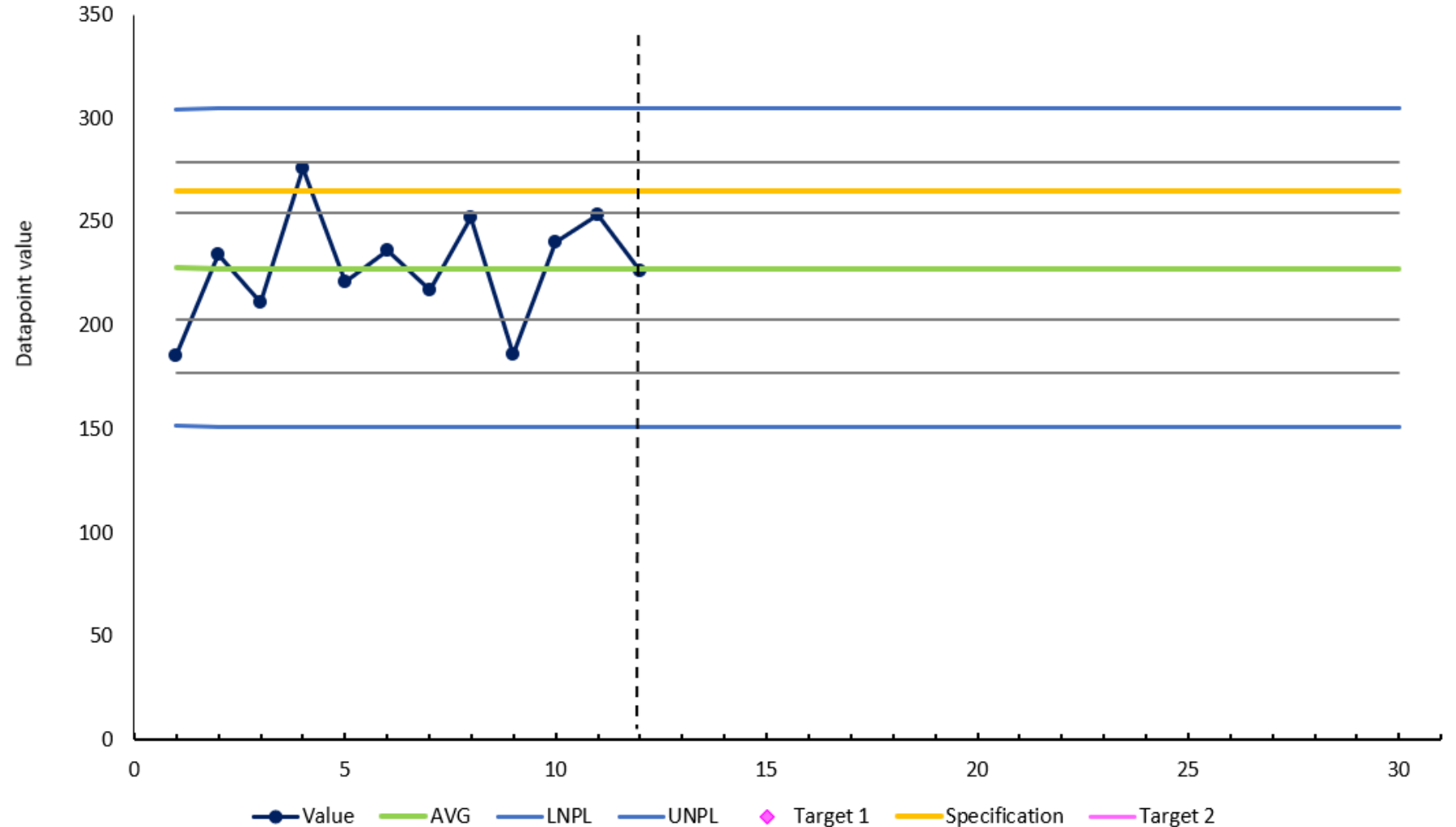
Western Electric Rules – ultra short run



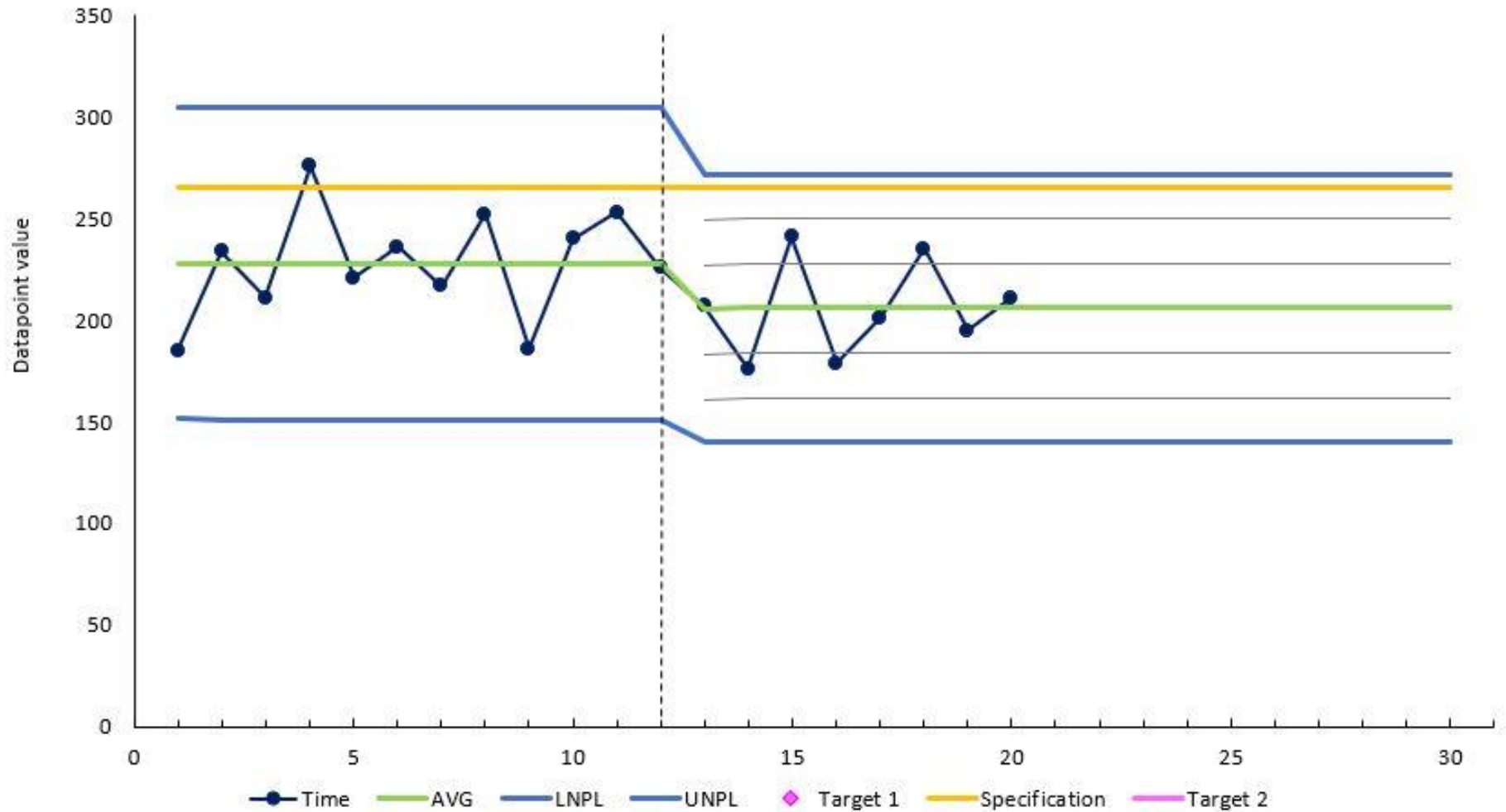
Safety Performance Specification

A specified performance that an organization
is **REQUIRED TO COMPLY** with or has **CHOSEN TO COMPLY** with.

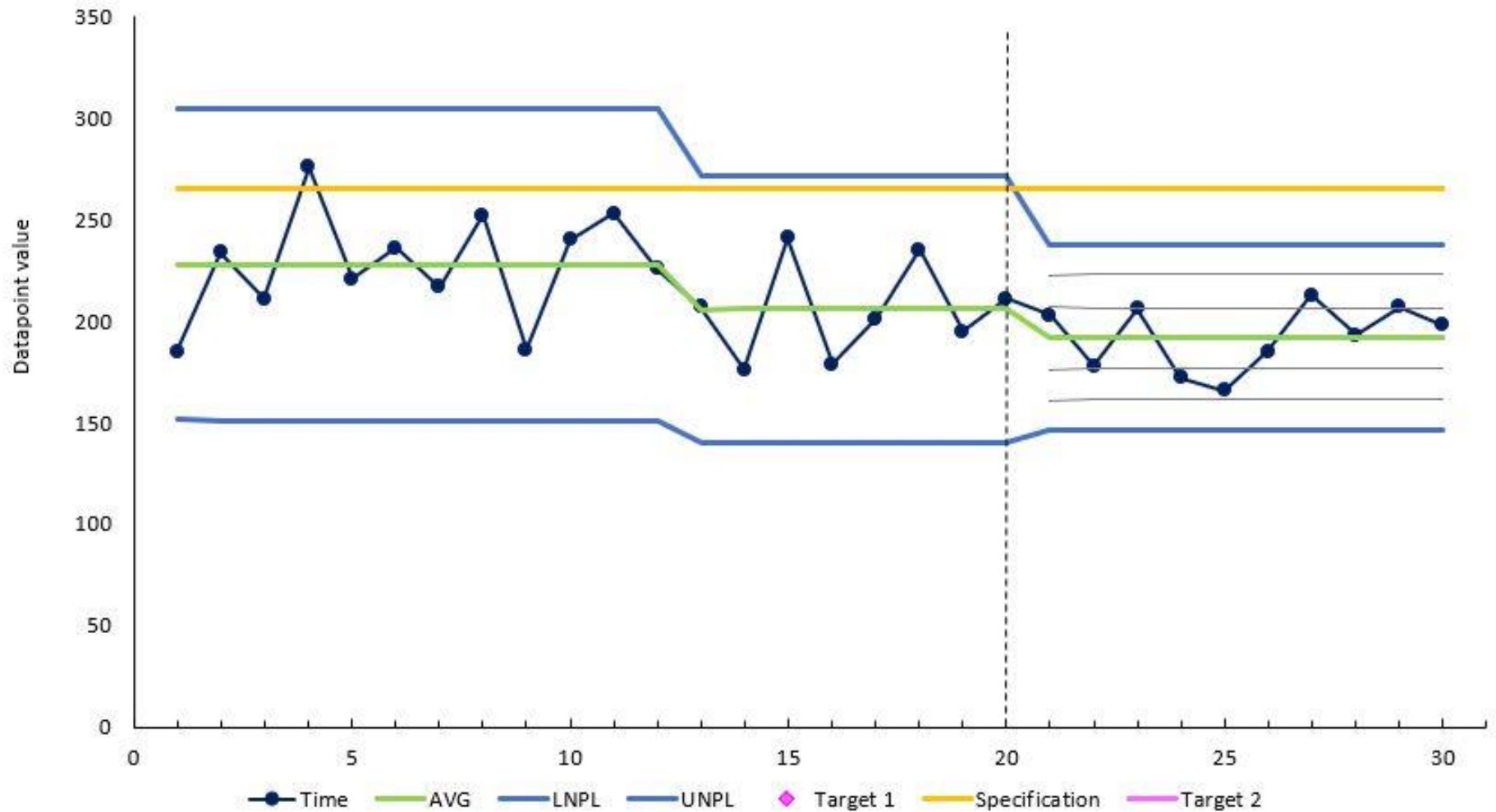
Demonstrating Process Capability



Demonstrating Process Capability



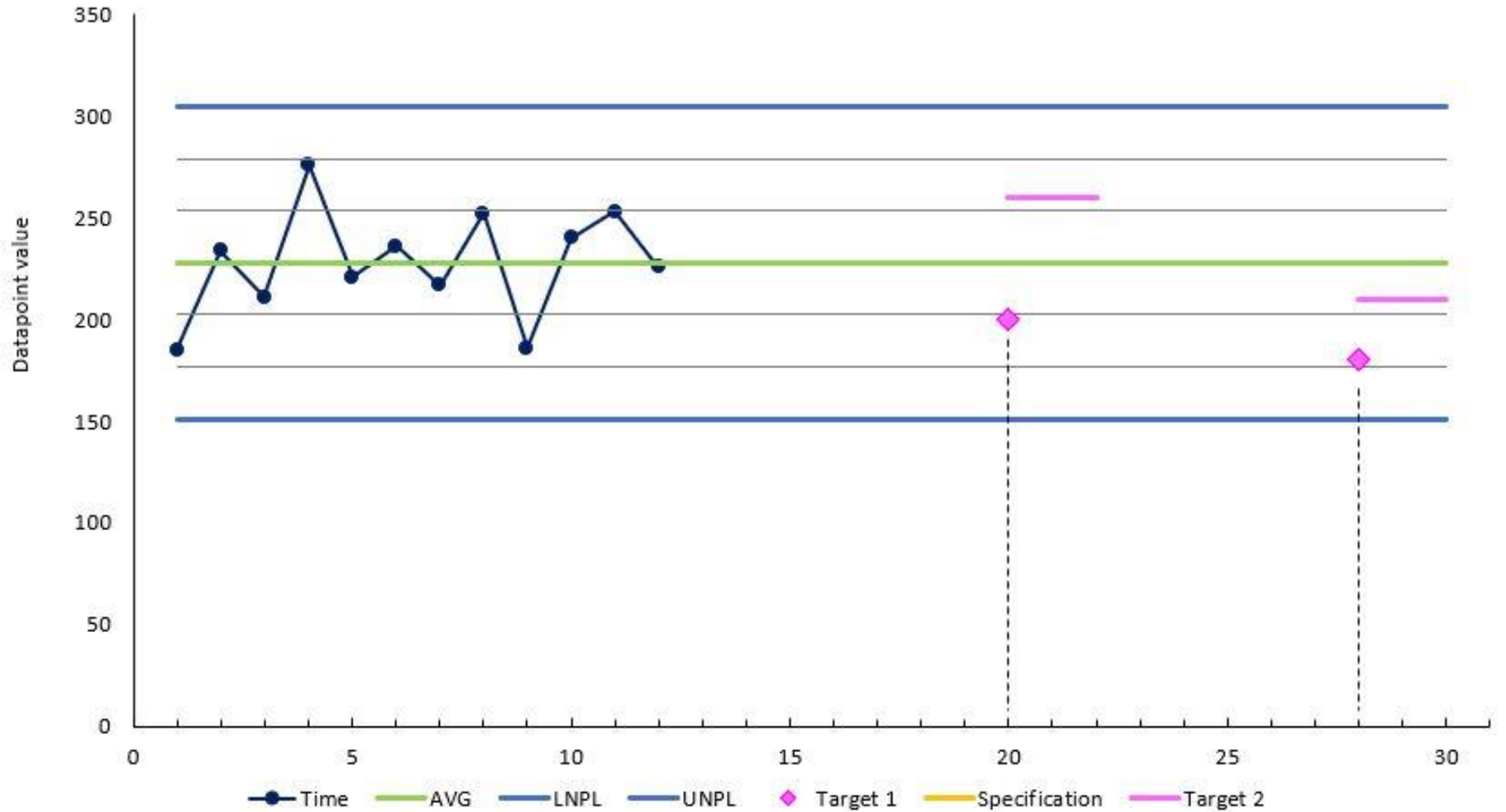
Demonstrating Process Capability



Safety Performance Target

A planned or intended performance level
over a given period of time that aligns with the safety objectives.

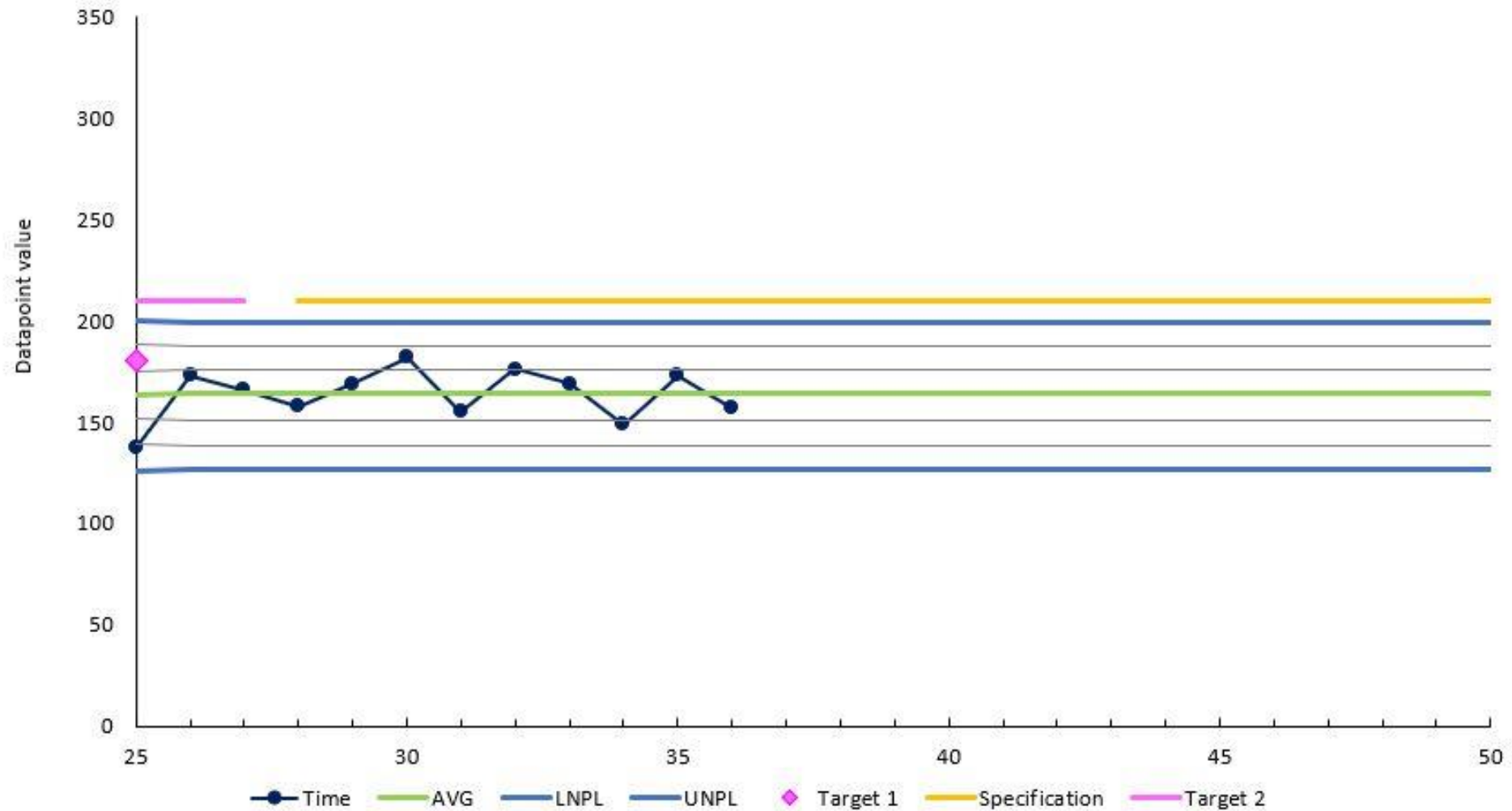
Gradual Process Improvement



Acceptable Level of Safety Performance

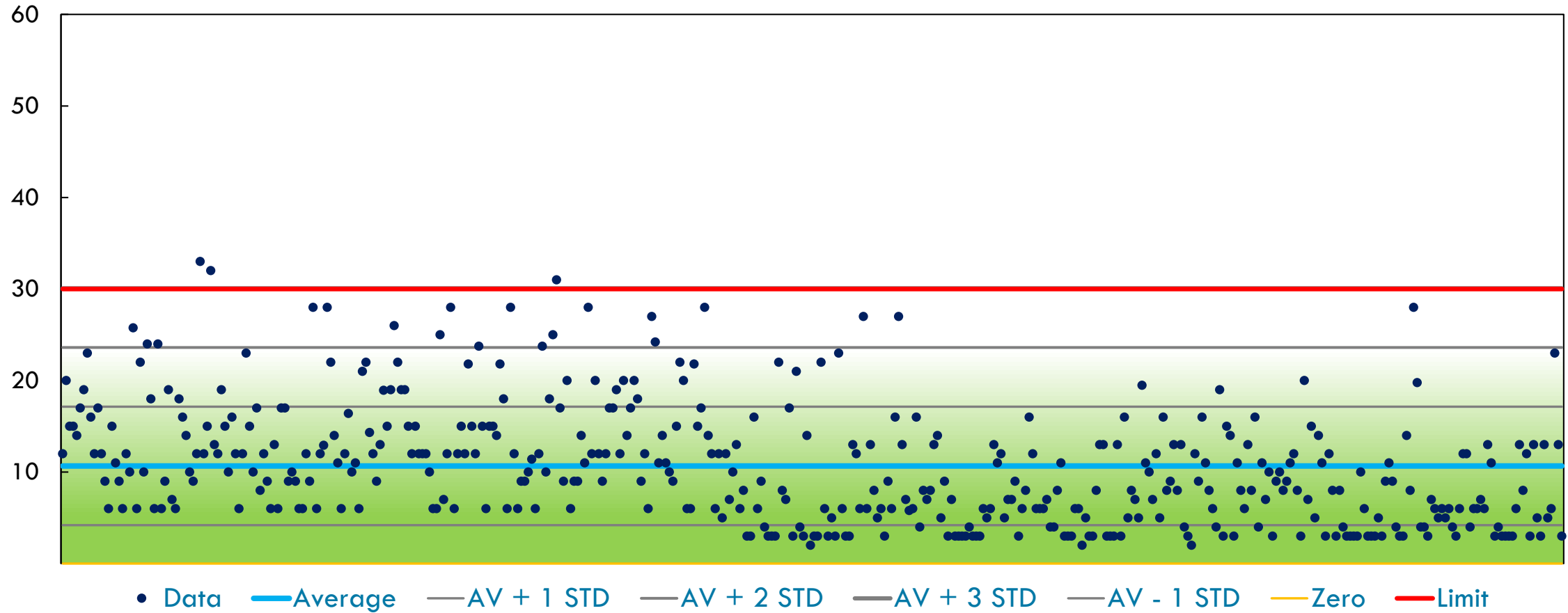
The Acceptable Level of Safety Performance (ALoSP)
may be expressed in terms of Safety Performance Specifications (SPS's).

Acceptable Level of Safety Performance



Example SPI

Flight Risk Assessment Tool (FRAT)



Safety

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Sli.do Poll #6 and #7