

# Literature Review of Ten Research Articles from Q1 on the Predictive Maintenance: An Effort to Find Main Issues and Future Research → Determining Road Map of Predictive Maintenance: A Literature Review

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Paper ID: 202

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# 01

## Classification of Maintenances

## Classification of Maintenances

Author(s), Year	1	2	3	4	5	6	7	8	9	10
Florian et al., (2021)	breakdown maintenance,	time-based maintenance,	CBM							
Pech et al., (2021)	CM,	Scheduled Maintenance,	CBM	Statistical-Based Maintenance,	PM,	PdM,	Smart Intelligent Predictive Maintenance			
Arena et al., (2022)	CM,				PM,	PdM,	ML-based PdM			
Vrignat et al., (2022)			CBM=PdM,			CBM=PdM,				
Javed et al., (2017)			CBM=PdM,			CBM=PdM,				
Olesen & Shaker (2020)	reactive maintenance (run till failure),				PM,	PdM,				
Zonta et al., (2020)	Analyze based in history: CM,				Analyze based in history: PM,	Analyze based in history: PdM,	& Analyze based on snapshot	Analyze based in history: Prescriptive		
Bousdekis et al., (2018)			CBM							
Davari et al., (2021)	CM = run-to-failure- maintenance				PM	PdM				
Moleda et al., (2023)	CM				PM	PdM	smart maintenance,		TPM,	RCM
	7	2	5	1	6	8	5	1	1	1

# 02

## Efforts to find main issues in PdM literatures: four questions

**Research Background.** Every article usually has their basic thinking before they do research, before finding out (propose) a research problem that needs to try to find solution in the research articles.

**Research Problem(s).** Research problem(s) comes after understanding where / what is the state-of-the-art of the research topics / theory thorough systematic literature review

**Method(s) of Improvement.** After understanding the problem as well as research background then every researcher gives their proposed solutions. Solutions sometimes just a bit or may be strategic and or local and or global solutions.

**Result(s) of Improvement.** It's about the results after conducted research to give improvement solution of the previous problem stated.

# Main issues in PdM system:

State-of-the-art of PdM

Computer science (including AI and distributed computing)

Industry 4.0

Smart and Intelligent Predictive Maintenance (SIPM)

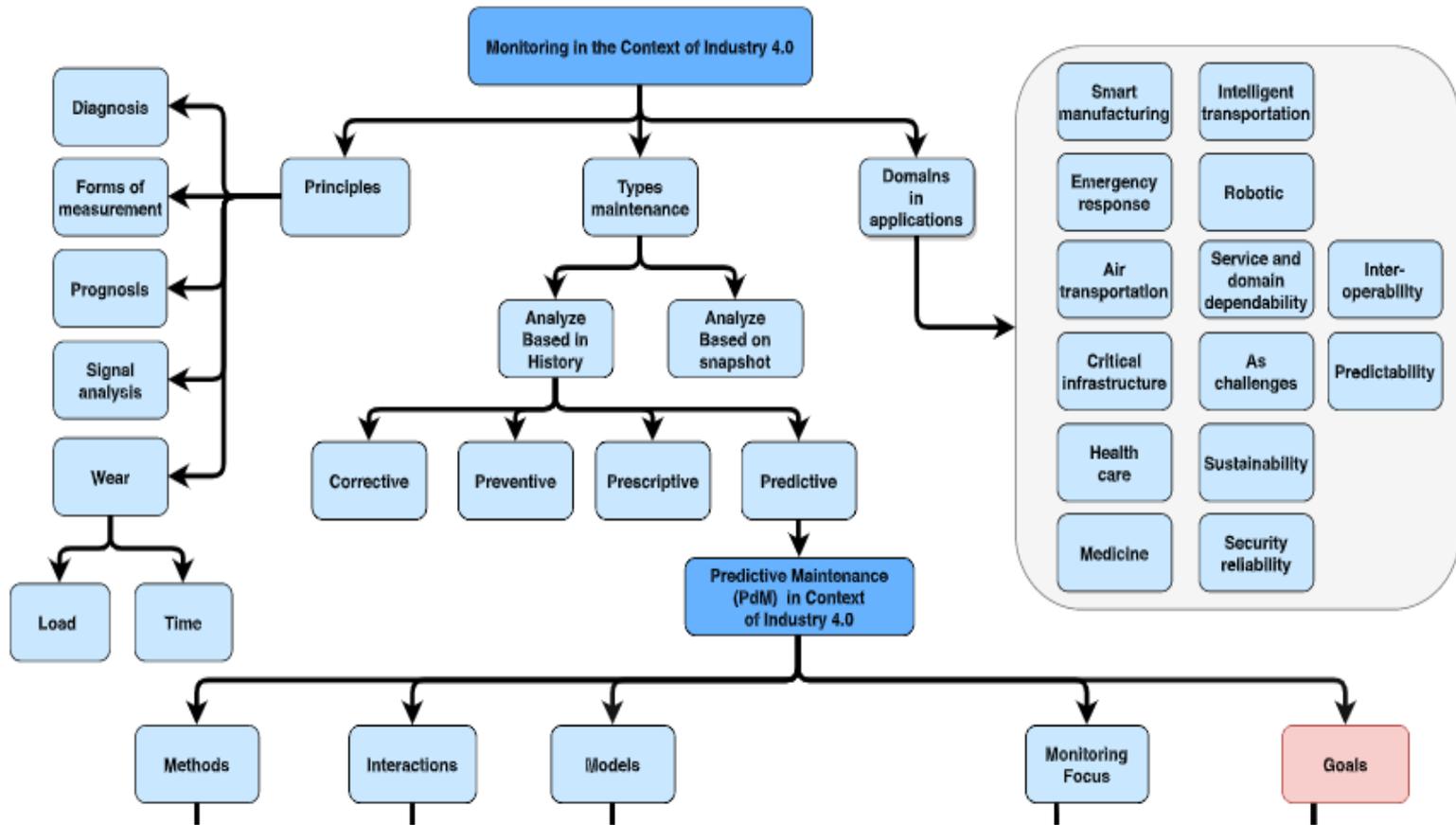
Intelligent Maintenance System (IMS)

Mathematical Model of PdM

Maintenance optimization

# 03

## Future research in the PdM system



A Reference for Maintenance (Zonta et al., 2020)

So, it is not an exaggeration to conclude that there is a need to understand what are the PdM approaches and the objectives of PdM in the literature, as a next step of this research.

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