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Correction

Correction: Melgaard et al. Fault Detection and Diagnosis Encyclopedia for Building Systems: A Systematic Review. *Energies* 2022, *15*, 4366

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Error in Table

In the original publication [1], Table 10 was difficult to read and has therefore been modified to make distinguishing between the classes easier. The updated Table 10 can be seen below. Besides these, there was a mistake in Table 11 as published. **Due to a miscommunication, the table did not indicate the different types of references, as written in the table caption.** The corrected Table 11, ***along with an updated table caption***, appears below.

Table 10. Proposed generalized definition template for confusion matrix of FDD (multiple faulty and one nonfaulty class).

		Predicted Class N_P				
		Negative (Non-Faulty) $N_{P,N}$	**Positive (Fault 1)** $N_{P,P,cp}$	...	**Positive (Fault n−1)** $N_{P,P,cp}$	**Positive (Fault n)** $N_{P,P,cp}$
	Negative (Nonfaulty) $N_{T,N}$	T_N (No alarm)	$F_{P,cp}$ (False alarm)			
True class N_T	**Positive (Fault 1)** $N_{T,P,ct}$	$F_{N,ct}$ (Missed alarm)	$T_{P,ct} = T_{P,1}$ (Alarm)			
	⋮		$F_{P,ct,cp}$ (Misdiagnosed alarm)	$T_{P,ct}$ (Alarm)	$F_{P,ct,cp}$ (Misdiagnosed alarm)	
	Positive (Fault n − 1) $N_{T,P,ct}$				$T_{P,ct} = T_{P,n-1}$ (Alarm)	
	Positive (Fault n) $N_{T,P,ct}$					$T_{P,ct} = T_{P,n}$ (Alarm)

check for updates

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Table 11. The performance evaluation metrics with an underscore are the names suggested for future applications. The references in the column "Specified name of the metric and equation" specify precisely how the metric is calculated and the name used for the metric. The references in the column "Specified name of the metric but not the equation" only state the metric's name but not the equation applied to calculate it.

	Specified Name of the Metric and Equation	Specified Name of the Metric but Not the Equation	Performance Evaluation Metric	Equation
	[96,104,105,111, 150,155,156,158, 160,161,163,168, 170]		Confusion matrix	-
			Used in FD (1 nonfault class and 1 fault class)	
Global	[104,105]		Correct rate (CR)	$\frac{T_P+T_N}{N}$
	[104]		Misclassification rate (MisCR)	$1-\frac{T_P+T_N}{N}=\frac{F_P+F_N}{N}$
Local	[153]	[57,164,168,171]	Fault-detection rate (FDR)	$\frac{T_P}{T_P+F_N}=\frac{T_P}{N_{T,P}}$
		[154]	Correct rate	
	[84]	[70]	Detection accuracy	
		[101]	Classification accuracy	
	[104,105]		Hit rate	
	[104]		Recall	
	[104]		True-positive rate	
	[153]		False-alarm rate	$\frac{F_P}{F_P+T_P}=\frac{F_P}{N_{P,P}}$
	[84,104,105,154]	[57,111,168,171]	False-alarm rate (FAR)	$\frac{F_P}{F_P+T_N}=\frac{F_P}{N_{T,N}}$
			Used in FDD (1 nonfault class and multiple fault classes)	
Global	[56,57,94,95,151, 152,155,156,158]	[161,163,166]	Accuracy	
	[150]	[96,104,105]	Correct rate (CR)	$\frac{T_N+\sum T_{P,ct}}{N}$
	[165,169,190]	[159,160]	Correct diagnosis rate	
		[101]	Classification accuracy	
		[162]	Diagnosis rate	
	[165,169,190]	[159]	False-diagnosis rate (FaDR)	$1-\frac{T_N+\sum T_{P,ct}}{N}$
	[94]		Macro-F1 (MF1) [191]	$\frac{\sum_{c=1}^{N_c-1} F1}{N_c}$
	[95]		Matthew's correlation coefficient (MCC)	$\frac{T_N*\prod T_{P,ct}}{\sqrt{N_{T,N}*\prod N_{T,P,ct}*N_{P,N}*\prod N_{P,P,cp}}}$
	[95]		G-mean	$\sqrt{\prod PREC}$
Local	[155,161]		False-alarm rate	$\frac{\sum F_{P,cp}+\sum F_{P,ct,cp}}{\sum F_{P,cp}+\sum F_{P,ct,cp}+\sum T_{P,ct}}=\frac{\sum F_{P,cp}+\sum F_{P,ct,cp}}{\sum N_{P,P,cp}}$
	[56,104,105]	[167]	False-alarm rate (FAR)	$\frac{\sum F_{P,cp}}{\sum F_{P,cp}+T_N}=\frac{\sum F_{P,cp}}{\sum N_{T,N}}$
	[155]		Fake-alarm rate (FaAR)	$\frac{\sum F_{P,cp}}{\sum F_{P,cp}+\sum F_{P,ct,cp}+\sum T_{P,ct}}=\frac{\sum F_{P,cp}}{\sum N_{P,P,cp}}$
	[155,156]		Misdiagnosed-alarm rate (MisR)	$\frac{\sum F_{P,ct,cp}}{\sum F_{P,cp}+\sum F_{P,ct,cp}+\sum T_{P,ct}}=\frac{\sum F_{P,ct,cp}}{\sum N_{P,P,cp}}$
	[155]		Missed-detection rate (MDR)	$\frac{\sum F_{N,ct}}{\sum F_{P,cp}+\sum F_{P,ct,cp}+\sum T_{P,ct}}=\frac{\sum F_{N,ct}}{\sum N_{P,P,cp}}$
	[156]		Misdiagnosed normal rate (MisNR)	$1-\frac{T_N}{T_N+\sum F_{P,cp}}=1-\frac{T_N}{\sum N_{T,N}}$
Local (calculated per class)	[95,156]		Precision (PREC)	$\frac{T_{P,ct}}{N_{P,P,cp}}$ *or* $\frac{T_N}{N_{P,N}}$
	[157,167,170]		Diagnosis ratio	
	[104,156]		Recall (REC)	$\frac{T_{P,ct}}{N_{T,P,ct}}$ *or* $\frac{T_N}{N_{T,N}}$
	[59]		Sensitivity index	
	[95]		Sensitivity	
	[111]		Successful diagnosed ratio	
	[104,105]		Hit rate	
	[157,167,170]		Detection ratio	
	[156]		F1-score (F1)	$\frac{2*PREC*REC}{PREC+REC}$
	[95]		F-measure	
	[56]		False-negative rate (FNR)	$\frac{F_{N,ct}}{F_{N,ct}+\sum_{cp=1}^{N_c-1} F_{P,ct,cp}+T_{P,ct}}=\frac{F_{N,ct}}{N_{T,P,ct}}$
	[56]		False-positive rate (FPR)	$\frac{\sum_{cp=1}^{N_c-1} F_{P,ct,cp}}{F_{N,ct}+\sum_{cp=1}^{N_c-1} F_{P,ct,cp}+T_{P,ct}}=\frac{\sum_{cp=1}^{N_c-1} F_{P,ct,cp}}{N_{T,P,ct}}$

Text Correction

Due to the corrections made to Table 11, some corrections have been made to **Section 5.2.2. Performance Evaluation Metrics**.

The previous text was:

The performance evaluation metric with an underscore is the name suggested for future application to avoid confusion. The references in bold specified precisely how the metric was calculated and the name of the metric. The references without bold text only stated the name of the metric, and not the numerical calculation.

The new text is:

The performance evaluation metrics with an underscore are the names suggested for future applications. The references in the column "Specified name of the metric and equation" specify precisely how the metric was calculated and the name used for the metric. The references in the column "Specified name of the metric but not the equation" only state the metric's name but not the equation applied to calculate it.

The authors state that the scientific conclusions are unaffected. This correction was approved by the Academic Editor. The original publication has also been updated.

Reference

1. Melgaard, S.P.; Andersen, K.H.; Marszal-Pomianowska, A.; Jensen, R.L.; Heiselberg, P.K. Fault Detection and Diagnosis Encyclopedia for Building Systems: A Systematic Review. *Energies* **2022**, *15*, 4366. [CrossRef]