

Data-informed solar plant taxonomy and ML implementation



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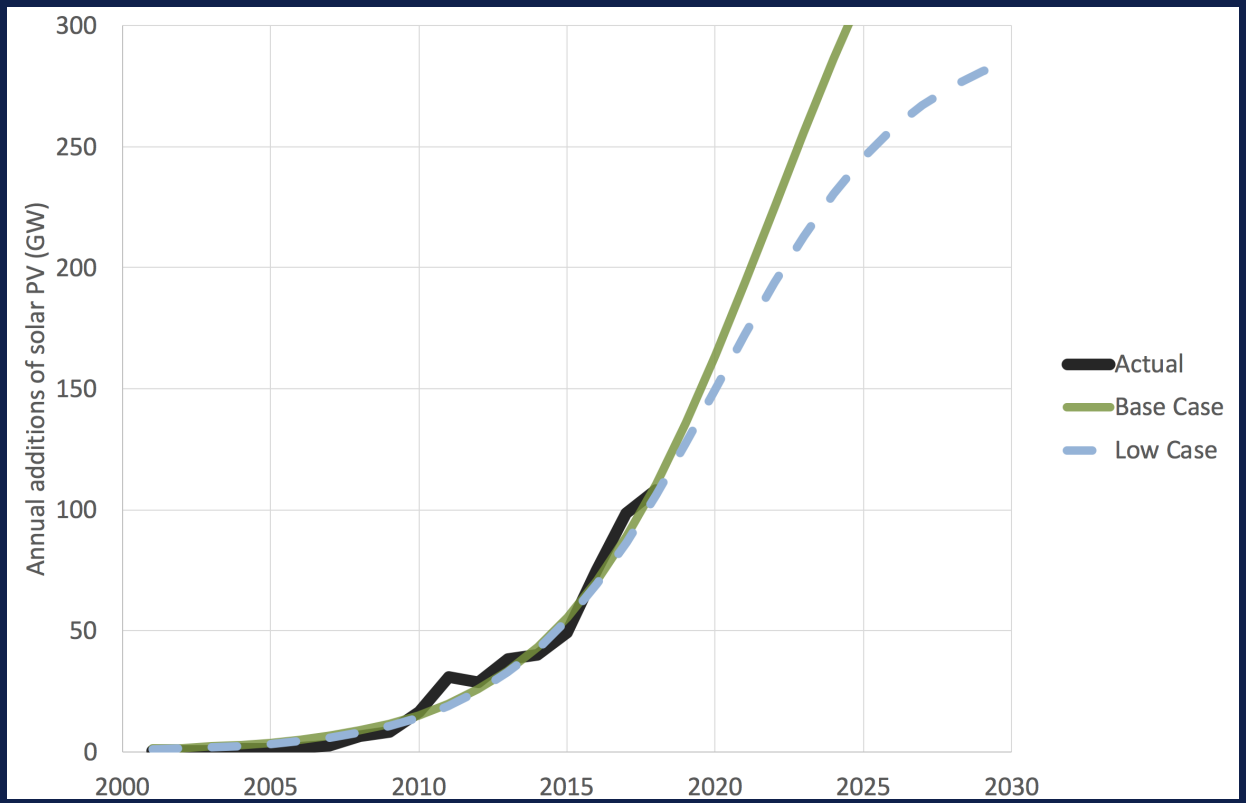
Why is standardisation important?



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Why is standardisation important now?



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Why develop a new taxonomy?

IEC 61850-7-420

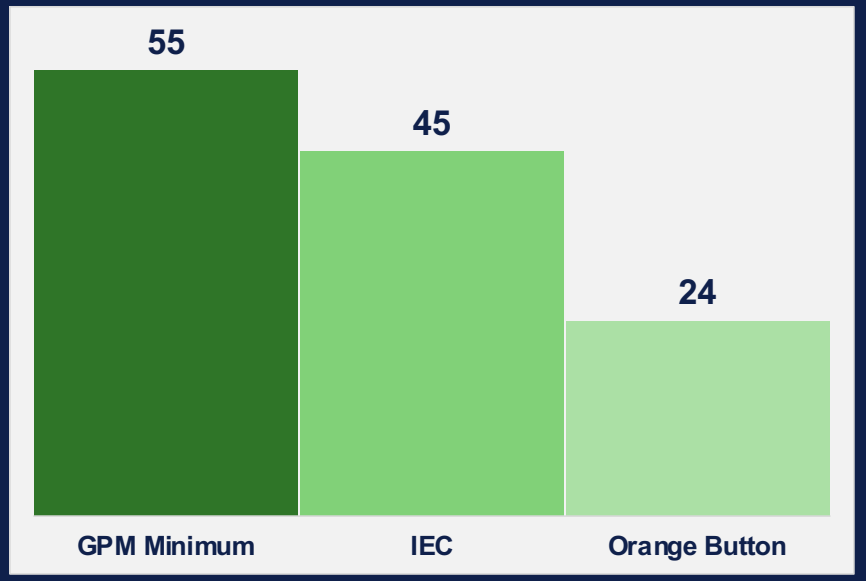
Widely recognised
Comprehensive

Not human readable
Logical Node concept vague

Orange Button

Open source
Human readable

Internally inconsistent
Asset clustering unclear



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How was the taxonomy developed?



Data Driven

Expert Advised

Site Tested

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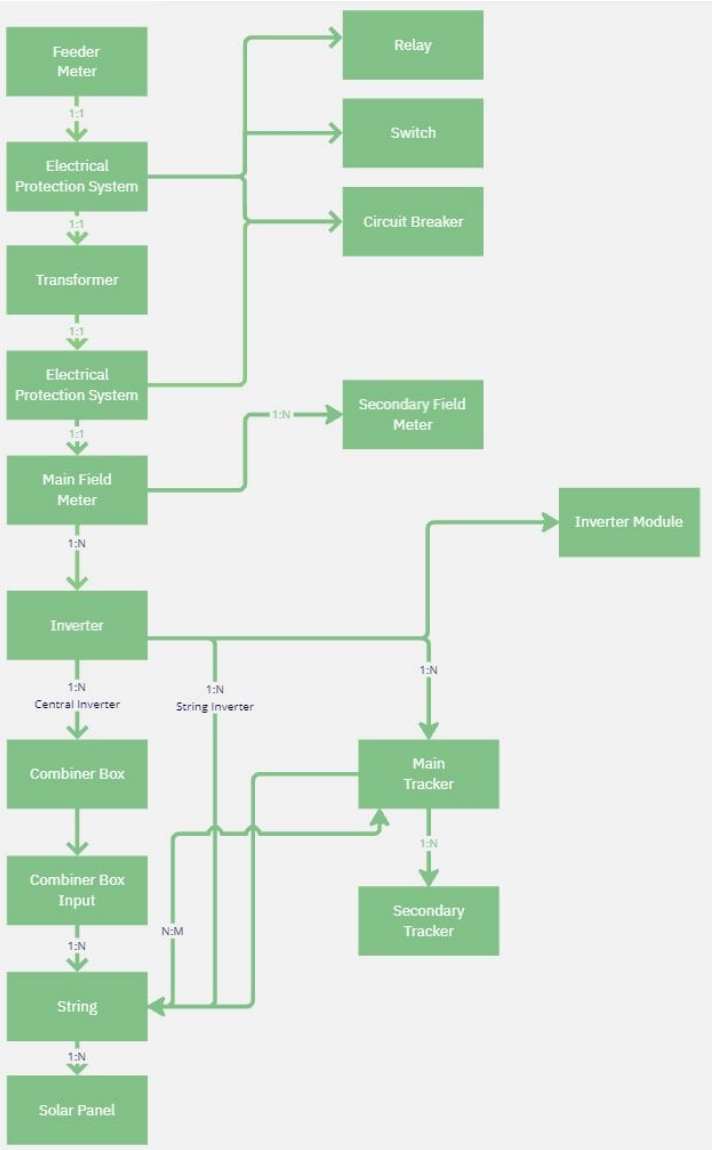
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GPM Solar Taxonomy

62 device types

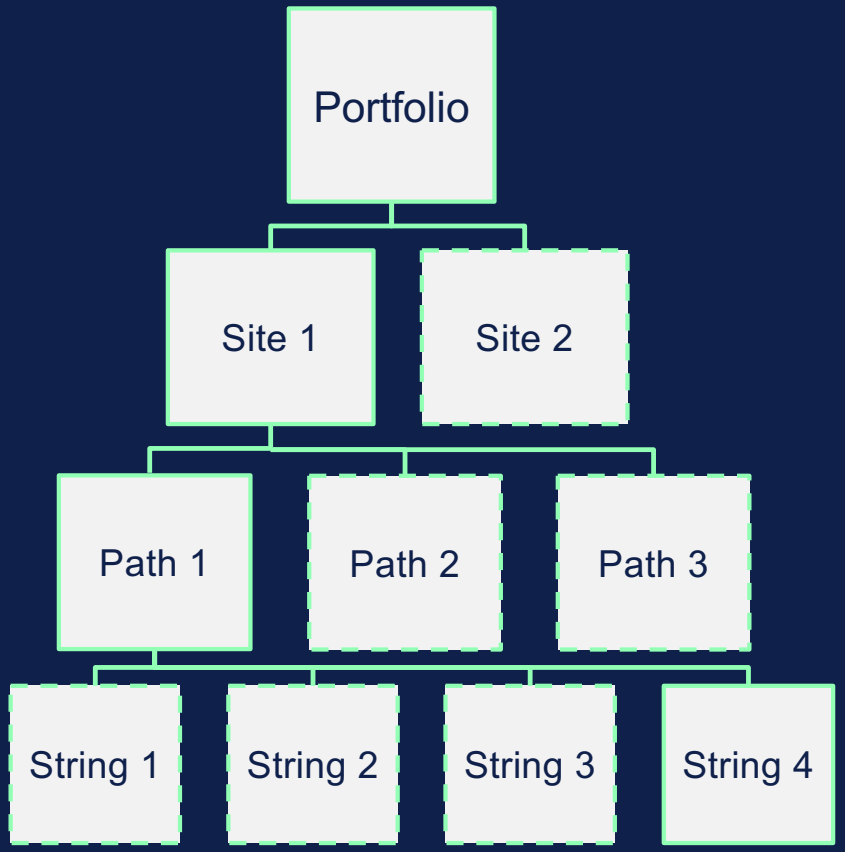
80 metadata tags

217 timeseries tags



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How does the taxonomy work?



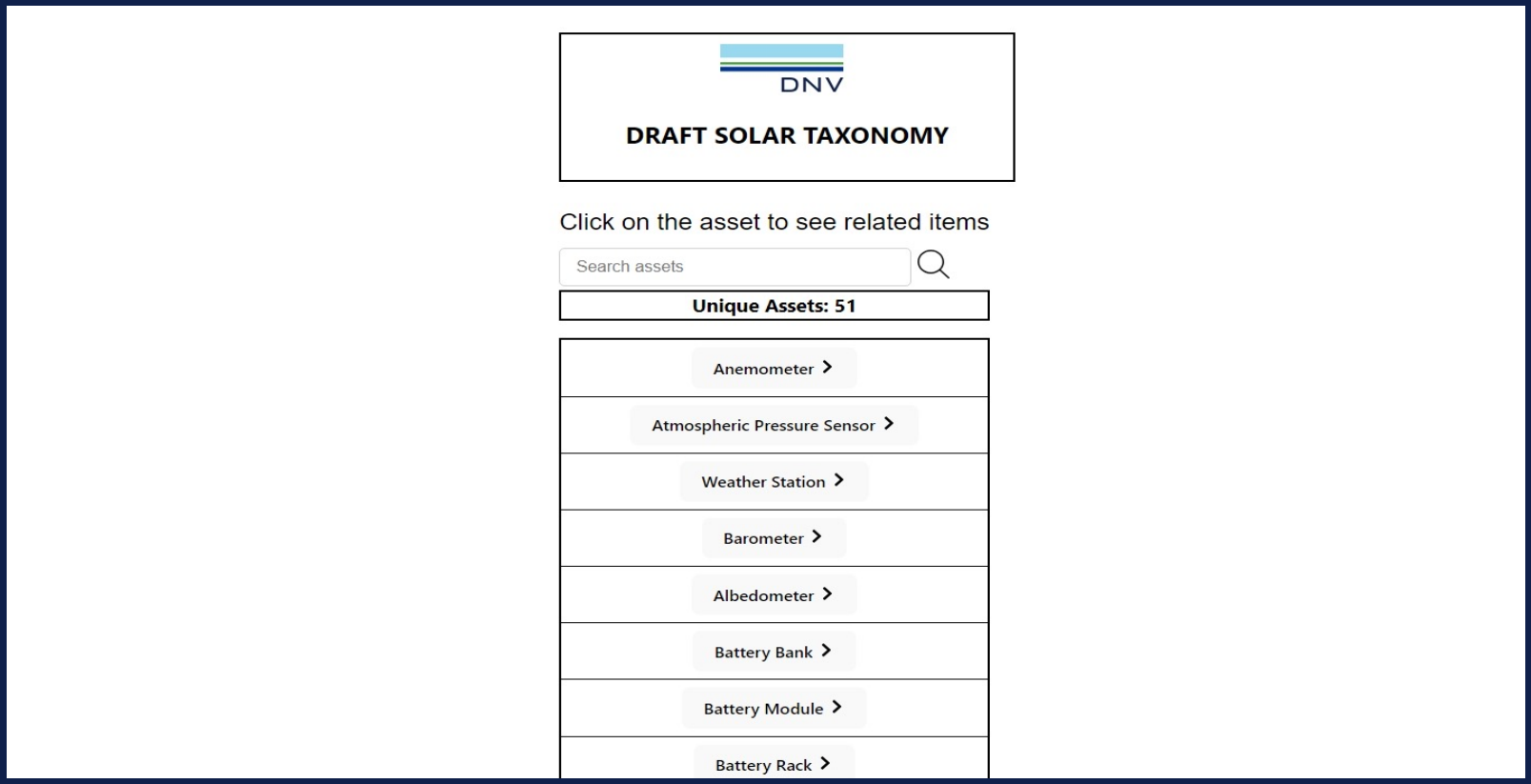
Portfolio.Site1.Path1_String4.CurrentDC_Avg

- CommQuality
- CommStatus
- OperationalStatus
- FailureCount
- AlarmStatus
- Warning
- CurrentDC
- PowerDC
- VoltageDC
- EnergyDC

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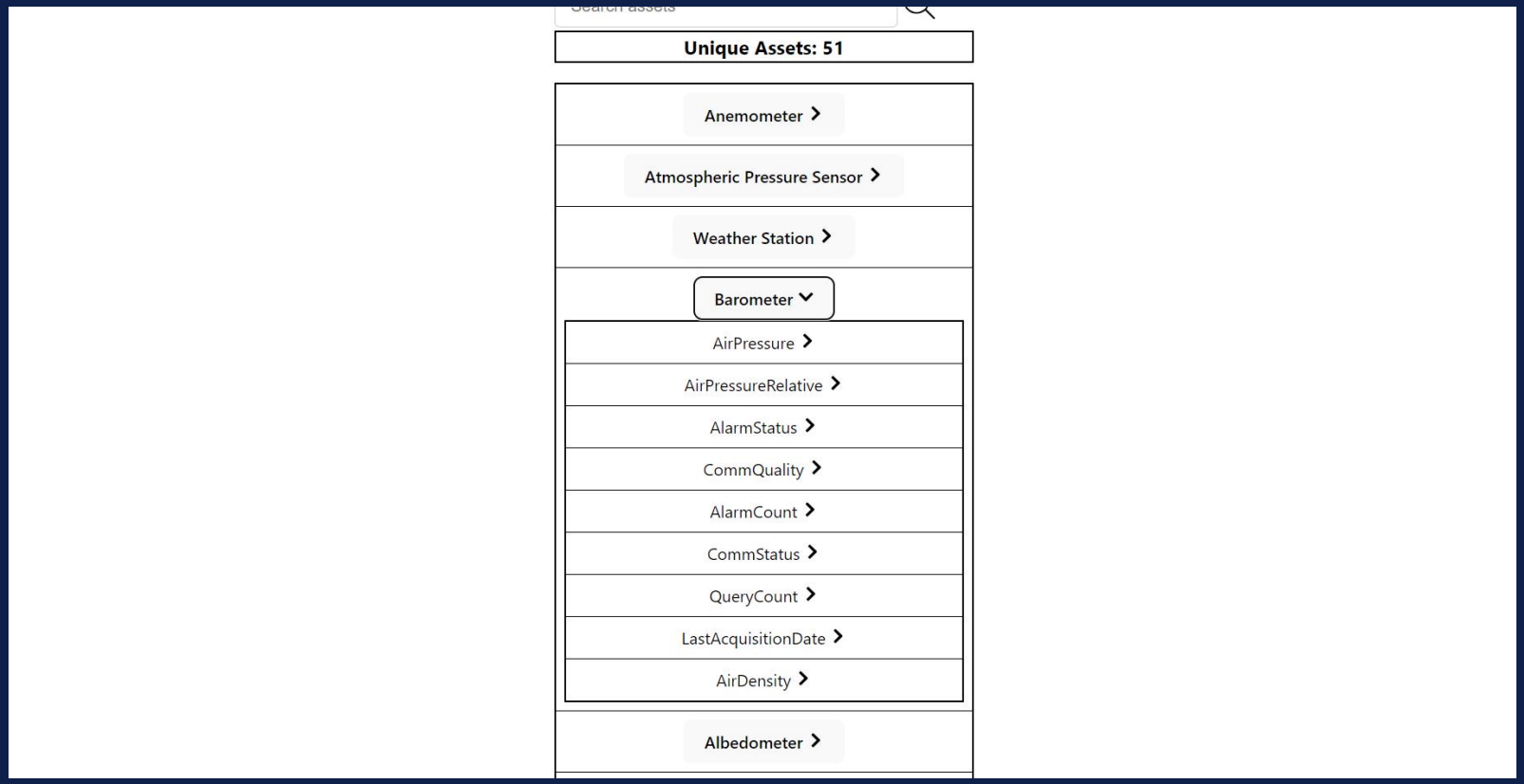
How can the taxonomy be used?



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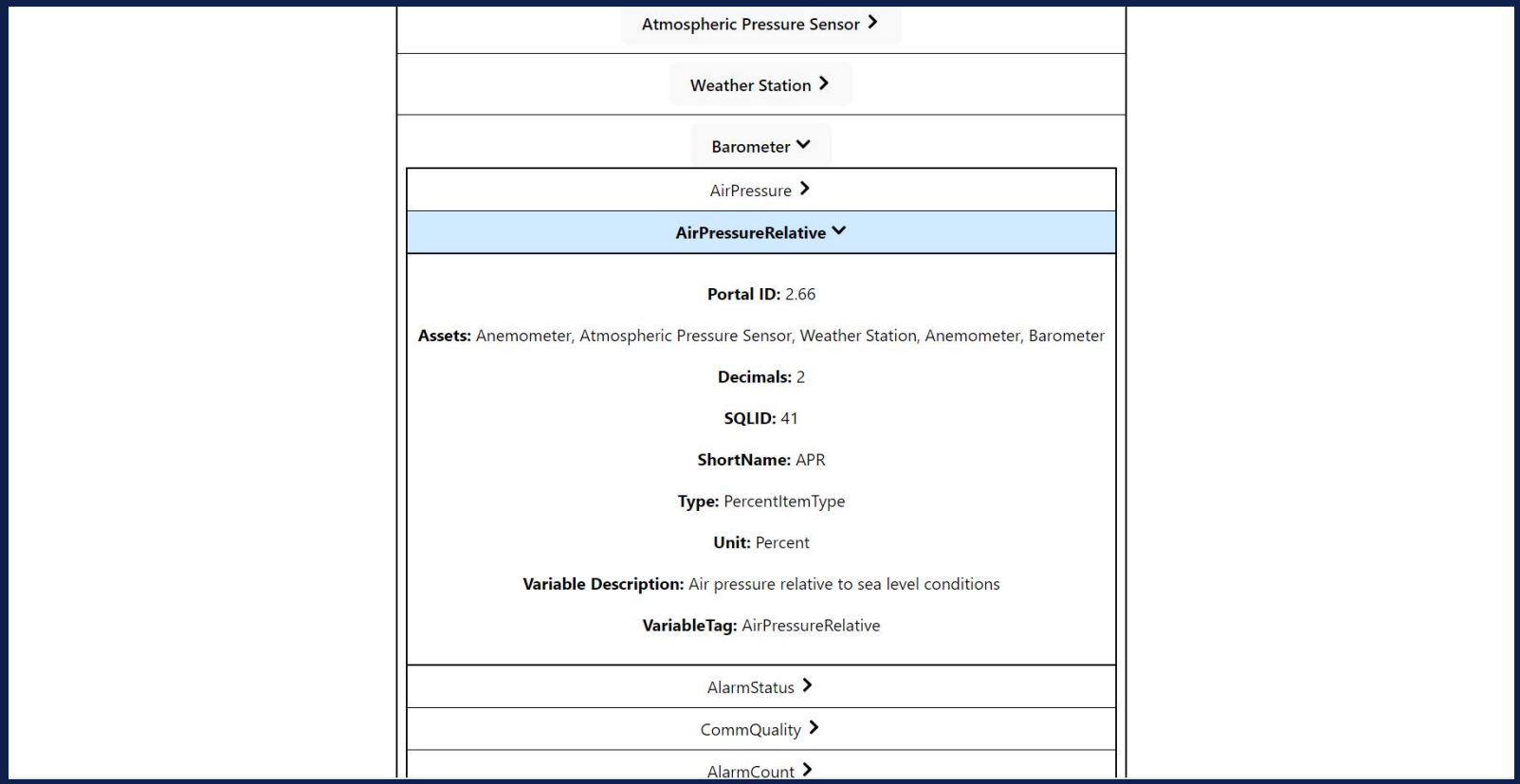
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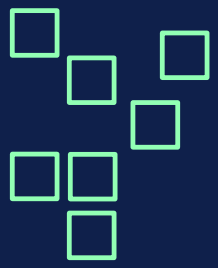
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How can the taxonomy be used?



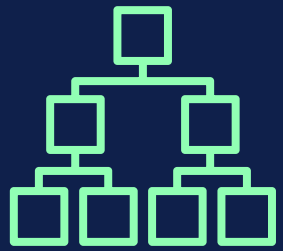
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Lineo



Unstandardised data tags



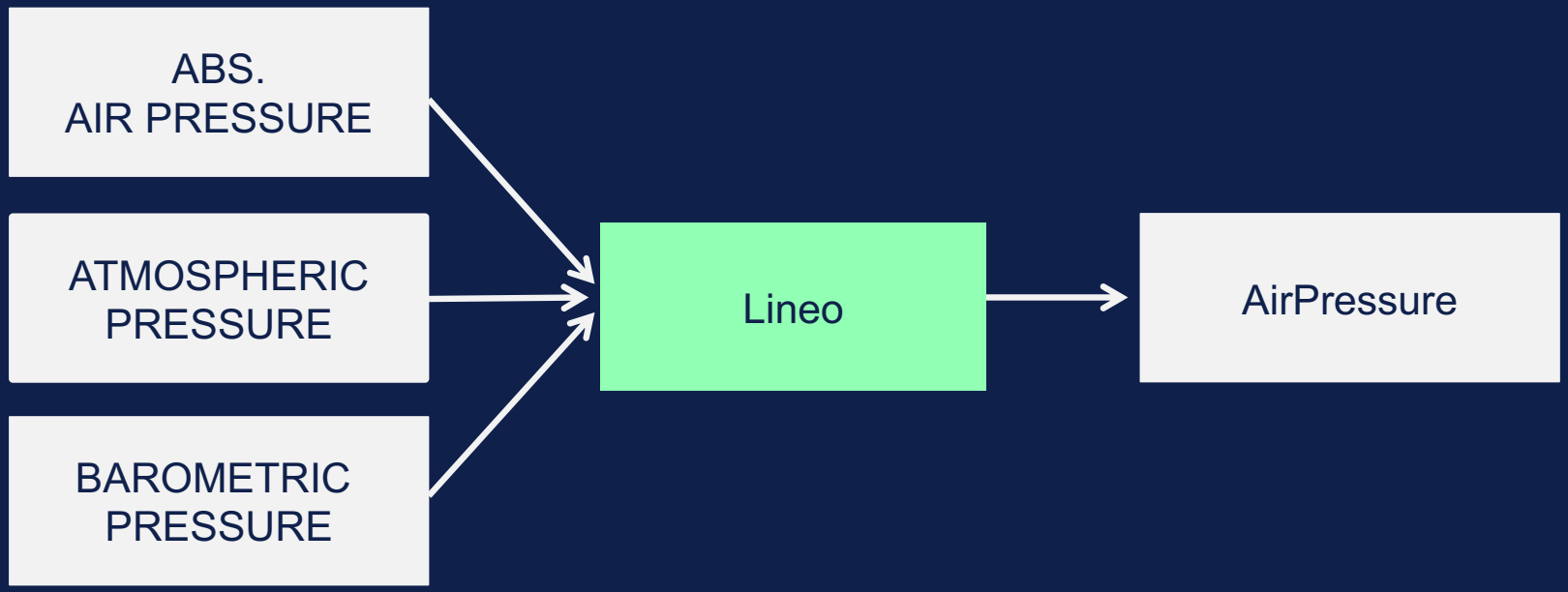


Standardised data tags

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Why develop Lineo?



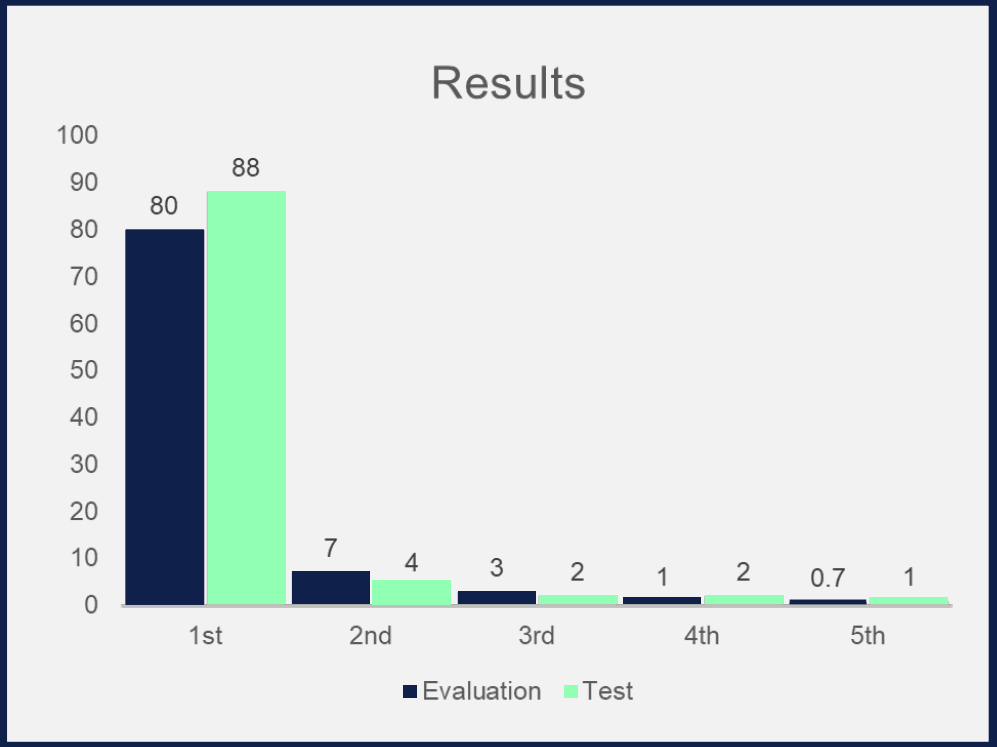
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How well does Lineo work?

Evaluation set: 10730 unique strings

Test set: 500 unique strings

Target set: 109 tags clustered by 46 assets



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Summary

- GPM has developed a new solar taxonomy
- Taxonomy developed because IEC and OB did not fulfill our needs
- Taxonomy is data driven, expert advised and site tested
- Taxonomy has a website frontend which will be publicly available
- ML tool called Lineo can automatically apply the taxonomy

- Please get in touch to collaborate on taxonomy!

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Thank you for listening

It’s time to take action. The future is now!

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