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fiber-optics for ratings + measurement

Application of fiber-optics to FERC Order 881 on ambient-adjusted ratings (AAR) and dynamic line ratings (DLR)

MOTIVATION

Reduction of the **financial and operational hurdles** towards implementing AAR and DLR

Straightforward and scalable solution to recent **FERC Order 881** and the subsequent NOPR on DLR (AD22-5-000)

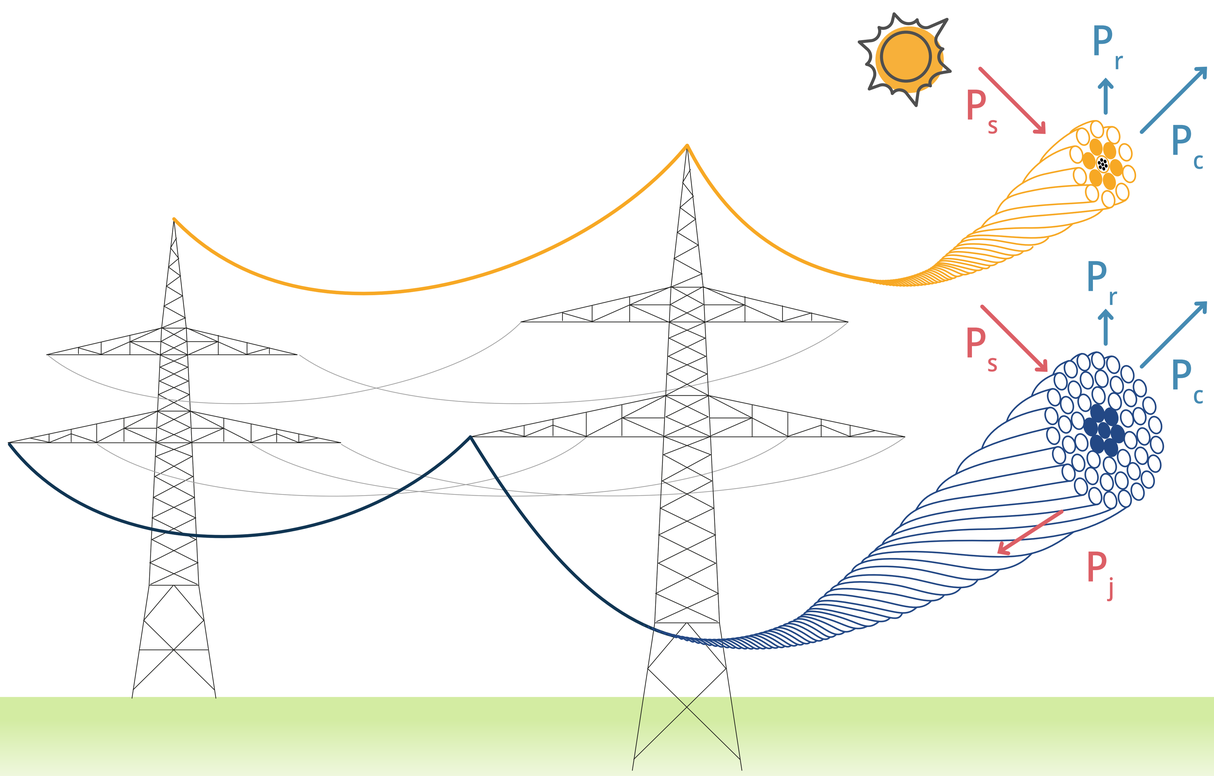
METHODS

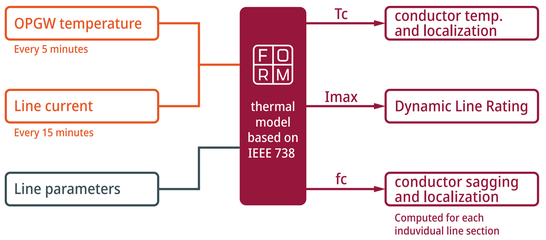
Continuous and direct measurement of ambient weather conditions **along the entire transmission line**

Utilization of transmission operator's **existing fiber-optic infrastructure** (optical ground wire – OPGW)

No installation required on the transmission line → no **maintenance and upkeep**

Secure fiber-optic data transmission → **resilient to cyber- and physical attacks**





CONCLUSIONS

FORM has been **validated through a four-year pilot study** on three 380-kV transmission lines

50Hertz is integrating FORM in SCADA for operation **on three of their 380-kV transmission lines**

APPLICATION

Continuous measurements = More accurate ratings

No discrete sensors = Fast and scalable implementation

No wireless data transmission = Secure and reliable

Let's connect

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