WPSA Operations – Disruption tools for operations

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Operational tools for disruptions

Top European priorities:
1. Development and investigation of **high performance scenarios** compatible with future W-PFCs.
2. **Avoidance and mitigation of disruptions and runaways**
3. Fast ion physics
4. Development and validation of **high level real-time control strategies**

Disruption triggers:
- User friendly control room GUI to check disruption trigger on previous pulse(s)
  -> increase trust and understanding of the trigger (early trigger vs. false positives)
  -> at higher currents, there will likely be standard disruption protection setup + scenario specific setup

Disruption categorization:
- Support post-pulse analysis (in speed and quality) by identifying potential disruption causes
- Disruption database to support operator training, monitoring of trends, improve strategies

Disruption avoidance/mitigation strategies:
- Expect strong experimental programme +
- Machine Protection considerations to set up boundary conditions for standard operations and exceptions for dedicated experiments
- Carbon machine -> post-disruption clean-up (pulse/ECWC) and machine checks (e.g. displacement)

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