



The FABER Action Working Group 1 (WG1) convened for a two-day intensive technical session focused on establishing the structural foundation for a revolutionary fatigue research database. Led by the Action Chair and the WG1 Leader, the meeting successfully moved the project from conceptual framework to a detailed technical architecture ready for implementation.

### Technical Scope & Progress

The primary focus of the session was the standardization of **S-N data** structures. The group achieved significant milestones in defining how the database will handle complex experimental variables, including:

- **Loading Conditions:** Support for multiaxial load cases, random loading, and load blocks.
- **Environmental & Thermal Factors:** Integration of thermal load data and various heat treatment records.
- **Material Characterization:** Inclusion of adjacent experimental data such as surface roughness, residual stresses, and hardness.
- **Future-Proofing:** The architecture is specifically designed to facilitate the eventual deployment of **AI and Machine Learning (ML)** models across the consolidated dataset.

### Key Outcomes & Next Steps

1. **Deliverable Timeline:** The finalized structure is being prepared for submission as a formal deliverable to the **COST Association** by July 2026.
2. **Technical Implementation:** Conversion of the agreed-upon structure into **MySQL tables** is underway.
3. **Critical Development Need:** The current "bottleneck" is the development of the user input interface. The group is actively seeking developers and enthusiasts to lead the interface implementation phase.
4. **Stakeholder Review:** A public presentation of the system is planned for the summer months to allow for a critical review and ensure the functionality meets industry and academic needs before full-scale deployment.

### Call for Collaboration & Support

The FABER Action currently involves approximately 220 members, but further expertise is requested in the following areas:

- **Software Development:** Specifically for interface implementation and post-processing tools.
- **Expert Review:** Domain experts to provide feedback on the database functionality.
- **Sponsorship:** As COST Actions focus on networking, the project is open to corporate partnerships to support the R&D costs associated with building this infrastructure.