BINDT THz User Group

Terms of Reference

Aim
The aim of the THz User Group of the British Institute of Non-Destructive Testing is:

To promote and advance techniques utilising THz technologies to inspect components, materials and structures, and to recommend standardisation and best practice as appropriate.
THz technologies refers to all types of instrumentation utilising electromagnetic signal at frequencies between 100 GHz and 10 THz.

Objectives
The following high-level objectives have been agreed as immediate priorities for the group:

1. To understand and describe/document end-user requirements for applications that may be solved by THz methods. (Note: each type of application will have different requirements.)
2. To manage industrial end-user understanding of the capabilities and limitations of THz technologies, and which technologies suit different applications.
3. To identify and document barriers to the introduction of THz technologies in NDT.
4. To road-map different THz technologies, including terminology definitions, best practice guides, and current state of maturity in each case.
5. To assess technology readiness level and commercial readiness of different THz technologies.

Sub-objectives (methods of progress towards the above objectives):

- Special issues of journals, workshops, seminars, etc.
- Review of state of the art in THz inspection.
- Production of a guide of agreed terminology.
- Recommendation of best practice.
- Recommendation of procedures for component and system specification.
- Recommendation on best format for data presentation and recording.
- Development of a list of the recommended practices against which organisations (i.e. equipment manufacturers) may show compliance.

The following additional objectives have been identified:

- To provide guidance on electromagnetic simulation methods.
- To build, or reference, a library of THz dielectric properties of materials, available for general use.
- To highlight the advantages and disadvantages of THz inspection, and to provide guidance on when it is worth using in place of other techniques.
- To capture industry-based studies in order to showcase the range of possible techniques.
- To provide best practice for storage of the data (how to deal with data volumes, server, archive, etc.)

Scope
The scope of the group: Electromagnetic inspection technologies employing frequencies in the range 100 GHz – 10 THz.

Membership
Membership of the Group is open to anyone who has an interest in THz or associated techniques for inspection. Neither membership of BINDT nor being based in the UK is a requirement.

Organisation
The THz User group shall operate under the Terms of Reference approved by the BINDT NDT Technical Committee. On any issue involving committing BINDT staff or resources the Group must make a recommendation to the BINDT NDT Technical Committee. On matters concerning technicalities and documents related to the Group topic, the Group may make a decision by voting amongst its members.

Chair
The Group shall be directed by a Chair who shall be a voting member of BINDT and will be appointed by the NDT Technical Committee of BINDT.

Voting
At any meeting of the Group a resolution may be adopted by a simple majority of those present. Each organisation represented is entitled to one vote. In case of equality, the Chairman shall have a second or casting vote. At the discretion of the Chair, a vote may be carried out by correspondence following proposal at a meeting of the group. In the case of amendment to the Group's Terms of Reference a resolution may only be adopted with the support of not less than two thirds of those present who are entitled to vote and any amendment must be submitted for approval to the NDT Technical Committee of BINDT.

Reporting
The THz Users Group reports through its Chair to the NDT Technical Committee of BINDT.

ICNDT status
This group is listed as an International Specialist Group by the International Committee on NDT (ICNDT)… https://www.icndt.org/ICNDT-Activities/Specialist-International-Groups