

The background of the slide is a dark blue field filled with glowing, interconnected lines that resemble a network or data flow. In the upper left quadrant, there is a teal rectangular box containing the "mtc" logo in white, with "Manufacturing Technology Centre" written below it in a smaller font.

mtc
Manufacturing
Technology Centre

NDT for AM

Ben Dutton
EASA-FAA AM
8 - 12 Nov-2021
Virtual

EASA - AM



Federal Aviation
Administration

‘NDT for AM’ Ben Dutton MTC

Content for future publication: Please contact Ben Dutton for further information.

Publication references:

1. Leach, R. (Ed.), Carmignato, S. (Ed.). (2020). Precision Metal Additive Manufacturing. Boca Raton: **CRC Press**. <https://doi.org/10.1201/9780429436543> (Chapter 9: Non-destructive evaluation for additive manufacturing)
2. Dutton, B., Vesga, W., Waller, J., James, S. and Seifi, M., “Metal Additive Manufacturing Defect Formation and Nondestructive Evaluation Detectability,” in **Structural Integrity of Additive Manufactured Parts**, ed. N. Shamsaei, S. Daniewicz, N. Hrabe, S. Beretta, J. Waller, and M. Seifi (West Conshohocken, PA: ASTM International, 2020), 1–50. <http://doi.org/10.1520/STP162020180136>.
3. Everton, S., Dickens, P., Tuck, C. and Dutton, B., ‘Using Laser Ultrasound to Detect Subsurface Defects in Metal Laser Powder Bed Fusion Components’, **JOM**, 2017, DOI 10.1007/s11837-017-2661-7.
4. Dutton, B. & Vesga, W., *Editors of Division 5-Non-Destructive Testing/Evaluation of ASM Handbook, Volume 24A, Additive Manufacturing Design and Applications. (Expected publication 2023)*

Standard references:

1. ISO TC261/ASTM F42 JG59 DTR 52905, ‘Additive Manufacturing — Non-Destructive Testing and Evaluation — Standard Guideline for Defect Detection in Metallic Parts’ (Lead by B. Dutton) To be published early 2022
2. ISO TC261/ASTM F42 JG60 DTR 52906, ‘Additive Manufacturing — Non-Destructive Testing and Evaluation — Standard Guideline for Intentionally Seeding Flaws Metallic Parts’ (Lead by B. Dutton) To be published early 2022
3. BSI PAS 6011-2019 ‘Non-destructive testing (NDT) for use in directed energy deposition (DED) additive manufacturing processes – Guide’ (Led by BSI, proposed by B. Dutton) Published
4. ASTM E3166 (E07 WK47031), ‘New Guide for Nondestructive Testing of Metal Additively Manufactured Metal Aerospace Parts After Build’ (Lead by Jess Waller and I contributed) Published
5. ASTM E07 WK62181, ‘New Guide for Standard Guide for In-Situ Monitoring (IPM) of Metal Additively Manufactured Aerospace Parts’, (Lead by Surendra Singh) Contributing.
6. ISO/TC 261/ASTM F42 JG76, WD 52927:2020(E) ‘Additive manufacturing — General principles — Main characteristics and corresponding test methods’, Contributing.
7. WK75329 – ‘New Practice for Nondestructive Testing (NDT), Part Quality, and Acceptability Levels of Additively Manufactured Laser Based Powder Bed Fusion Aerospace Components’, Contributing.

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