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Neutron Radiology Terminology in Imaging

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Neutron Imaging used to be a non-destructive testing (NDT) tool for decades and as such was listed with a few techniques in the ASTM standards. However, for the current state-of-the art in neutron imaging such NDT terminology, which mostly still refers to film detection, appears outdated in light of the digital imaging at advanced, large-scale neutron source facilities. We note that these digital imaging applications are the dominate activities of ISNR board members and comprise most of the WCNR presentations for more than a decade. Additionally, the rapidly increasing number of techniques and methods qualifying neutron imaging today combined with the outdated terminology have led to increasing confusion and lack of coherence in the use and creation of terms, which is required to clearly characterize measurement methods, developments, and applications.

Therefore, the board of the ISNR, at the last WCNR in 2014 in Grindelwald, Switzerland, established a working group to study issues of terminology. While corresponding higher order terms and definitions have been discussed and presented at the ITMNR in Beijing in 2016, an attempt for an extensive catalogue and system for a terminology in neutron imaging to be issued by the ISNR shall be presented and opened for discussion.

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Fig. 1 top: Context of Terminology for ISNR with respect to higher-level general umbrella terms like Radiology, Imaging, Radiography etc.; bottom: use of the term imaging over the last 210 years

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