

AMERICAN ASSOCIATION OF PHYSICISTS IN MEDICINE (AAPM)
BIG DATA SUBCOMMITTEE (BDSC) OF THE DATA SCIENCES COMMITTEE (DSC)
OPERATIONAL ONTOLOGY FOR ONCOLOGY (O3)
FORMERLY KNOWN AS OPERATIONAL ONTOLOGY FOR RADIATION ONCOLOGY (OORO)

Constructing large, comprehensive data sets from “real world” data holds the promise to enable learning from each patient how to better care for future patients.

Lack of professional society endorsed, consensus based, standardization that identifies what limited set of essential items, value sets and interrelationships would be needed to support the majority of clinical practice and research applications is a barrier. It impedes ability to coalesce technical efforts in constructing interoperable systems that simplify gathering this information as part of routine practice.

The operational ontology for oncology (O3, formerly known as Operational Ontology for Radiation Oncology-OORO) is being constructed to address this barrier. While under operating under American Association of Physicists in Medicine (AAPM), it is carried out in partnership with and has been endorsed by the American Society of Radiation Oncology (ASTRO), Canadian Association for Radiation Oncology (CARO) and the European Society for Therapeutic Radiation Oncology (ESTRO). The collaboration benefits from leadership from multiple societies, utilizing the insights and skills of physicians, physicists, and other professionals to identify a prioritized, set of key elements, attributes and relationships to serve as a standard.

These 56 current members of the AAPM’s Big Data Science Committee (BDSC) have prepared an initial recommendation for the O3 with the 1st use case focused on prostate cancer. The O3 will not be static. It will evolve with a series of disease site focused efforts. It is currently being expanded with disease site specific elements for head and neck cancer, breast cancer, and central nervous system cancers.

Link to the O3 Taxonomy: <https://aapmbdsc.azurewebsites.net/>