DEFINING BIG DATA ARCHITECTURE FRAMEWORK

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Objectives:

Big Data are becoming a new technology focus both in science and in industry and motivate technology shift to data centric architecture and operational models. There is a vital need to define the basic information/semantic models, architecture components and operational models that together comprise a so-called Big Data Ecosystem.

The proposed poster intends to provide a consolidated view of the Big Data phenomena and related challenges to modern technologies, and initiate wider discussion.

On-going activities:

On-going research at the University of Amsterdam to define the Big Data and Data Intensive technology domain what is specifically targeted to provide a strong basis for developing advanced education courses and curricula on Big Data and Data Intensive technologies.

Results:

The poster will present a current understanding about a nature of Big Data that may originate from different scientific, industry and social activity domains and propose improved Big Data definition that includes the following parts: Big Data properties (also called Big Data 5V: Volume, Velocity, Variety, Value and Veracity), data models and structures, data analytics, infrastructure and security.

The poster will illustrate the perceived paradigm change from traditional host or service based to data centric architecture and operational models in Big Data.

The Big Data Architecture Framework (BDAF) will be proposed to address all aspects of the Big Data Ecosystem and includes the following components: Big Data Infrastructure, Big Data Analytics, Data structures and models, Big Data Transformation and Lifecycle Management, Big Data Security.

The proposed approach and BDAF has been presented to the NIST Big Data Working Group and follows ongoing developments at other standardization bodies and industry associations.