Design and status of a next generation miniSEED format

John Clinton (1), Chad Trabant (2), Lion Kishcher (3), and the FDSN WGII
(1) Swiss Seismological Service (SED), ETH Zürich, Switzerland (john.clinton@sed.ethz.ch), (2) IRIS, USA, (3) Department of Earth Science, ETH Zürich, Switzerland

Since its adoption by the International Federation of Digital Seismograph Networks (FDSN) in 1987, the SEED (Standard for the Exchange of Earthquake Data) format has become and still serves as the canonical format for passive source seismological data, and increasingly also for other datasets. In operational environments, for both data archival and exchange, it is common to handle the time series and related metadata components of this format separately, known respectively as miniSEED and dataless SEED. In 2013 the FDSN adopted a new, XML-based standard known as StationXML to replace and extend dataless SEED. This new metadata standard provides much greater flexibility and was an important step in allowing future modifications to aspects such as the identifiers used to match time series data and metadata. In 2016, through Working Group II of the FDSN, work began to define the next generation of miniSEED, the time series component of the standard. While the current version of miniSEED has served the community very well for nearly three decades, the crucial issue motivating a change are limitations with the key identifiers. Specifically, identifiers capable of representing deployments with a very large number of nodes in addition to more instrument types are currently missing. Addressing these issues requires changes to key fields in miniSEED that render it incompatible with the current release. Such a small, but disruptive change affords the opportunity to address a number of historical issues and create new capability to address future needs. We aim to define a next generation format that fulfills the the primary use case of permanent archival, exchange and subsetting/selection of data supported by current miniSEED. This poster will report on the planning, design and current status of this next generation format.