FIRE for free (FFF) – how to make large and valuable seismic reflection data sets easily available

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The data from Finnish Reflection Experiment FIRE are like data from many other similar large seismic reflection programs. After the first years use of the data is rather limited, despite the fact that acquisition was expensive and the scientific value of the data is still high. More often the main reason is not that the data are unavailable in principle, they are just too complicated to use in practice.

The Institute of Seismology of the University of Helsinki started in March 2016 - with the financial support of the Ministry of Education of Finland – the FFF project to overcome these obstacles by building up a data base and a related interactive web site for easy downloading of seismic data and supporting material of the FIRE program. We hope that this will encourage our colleagues everywhere to use the data and help our students, by using the data, to learn the great importance of seismic images of the crust. The project started in March 2016 and by the end of the year we assume that there will be a prototype available for testing. After feedback from users, the upgraded data base and web site will be ready by the end of 2017.

The seismic files in the data base will include raw field data, edited field data, DMO and NMO stacks as well as migrated sections. Additional material includes for example coordinate files, observer's logs, line maps and, as much possible, other relevant geological and geophysical material. Our goal is also to make available plots of the sections in different scales, so that a person not familiar with seismic data could use them easily. An important step is creation of the edited field data in which the headers of the SEG-Y shot gathers already include all relevant parameters, like coordinates, station numbers etc...,which usually are in the auxiliary files. These gathers include only proper shot gathers with reliable observer's log information, no tests or misfires. As this phase usually takes most of the time, especially if you are not familiar with details of acquisition, we hope that availability of these edited shot gathers would lower the threshold for using the data and test with new processing schemes.

Whereas the handling of the seismic data is quite straightforward, creation of a good interactive web site may produce some challenges. However, we are sure that we can manage these and hopefully in the end, link our data base with the extensive EPOS-ERIC seismic data base in the future.