European Data Format

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The European Data Format (EDF) is a simple and flexible format for exchange and storage of multichannel biological and physical signals. It was developed by a few European 'medical' engineers who first met at the 1987 international Sleep Congress in Copenhagen. The EDF logo is derived from the congress logo which was the green pea from the fairy tale "The princess and the pea" by the Danish writer Hans Christian Andersen. With the support of professor Annelise Rosenfalck, the engineers initiated the European (EC funded COMAC-BME) project on Sleep-Wake analysis (1989-1992). They wanted to apply their sleep analysis algorithms to each others data and compare the analysis results. So, on a morning in Leiden in March 1990, they agreed upon a very simple common data format. This format became known as the European Data Format. In August 1990, all participating labs had contributed an EDF sleep recording to the project.

EDF was published in 1992 in Electroencephalography and Clinical Neurophysiology 82, pages 391-393. Since then, EDF became the de-facto standard for EEG and PSG recordings in commercial equipment and multicenter research projects.

An extension of EDF, named EDF+, was developed in 2002 and is largely compatible to EDF: all existing EDF viewers also show EDF+ signals. But EDF+ files can also contain interrupted recordings, annotations, stimuli and events. Therefore, EDF+ can store any medical recording such as EMG, Evoked potentials, ECG, as well as automatic and manual analysis results such as deltaplots, QRS parameters and sleep stages. The specs are stricter than EDF which enables automatic localization and calibration of electrodes. And EDF+ fixed a few major (Y2K problem, little-endian integers, comma vs dot) and minor omissions in EDF.

EDF+ was published in 2003 in Clinical Neurophysiology 114, pages 1755-1761. Since then, hundreds of EDF+ files and several EDF+ viewers became available on the internet. Applications till now are mainly in Clinical Neurophysiology, Sleep, and Cardiology. Formal standards from other specialisms can also be integrated into EDF+.

EDF and EDF+ are freely available without charge. The full specifications are in the above-mentioned publications as well as on this EDF website. The site also supports users and developers by offering free downloads of files and software, a list of EDF(+) compatible companies and further contact possibilities such as Yahoo's EDF group.

Files, software and utilities are most welcome, as are companies and developers that support EDF(+).
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