Scipion for tomography: An expansion of Scipion software framework towards integration, reproducibility and validation in cryo-electron tomography.

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As happened some years ago with cryoEM-SPA, image processing in cryoET is far from having its workflows well defined and providing a smooth user experience. One of the main reasons is the heterogeneity among the different software packages developed by different groups and focused on different steps of the data processing. Even more, file formats are far from being standardized. Scipion framework was originally developed for cryo-EM SPA, and it is currently being extended with a batch of tomography plugins (referred as ScipionTomo from now on), with the same purpose: allow the users to be focused on the data processing and analysis instead of having to deal with multiple software installation issues and the inconvenience of switching from one to another, converting metadata files, managing possible incompatibilities, scripting... ScipionTomo is developed by a collaborative multidisciplinary team composed of Scipion team engineers, structural biologists and some of the developers whose software packages have been integrated. The result is an extension that combines the acquired knowledge of developing Scipion, the close collaboration with other developers, and the on-demand design of functionalities requested by the final users. In this talk, the current state and some highlights of ScipionTomo are shown. It's expected to be released in the following months, including other differential features such as the currently under development functionalities of alignment and picking consensus to get a refined result using the goodness of the best software packages.