

Supplementary Material

The LONI Pipeline. The LONI Pipeline environment (Dinov et al., 2010), a graphical workflow environment for constructing and executing complex data processing protocols. To provide an extensible framework for interoperability of development styles, design specifications and analysis protocols of newly engineered resources, the LONI Pipeline employs a decentralized infrastructure, where data, tools and services are linked via an external inter-resource mediating layer. Thus, no modifications of the existing resources are necessary for their integration with other computational counterparts. The Pipeline eXtensible Markup Language (XML) schema forms the backbone for the inter-resource mediating layer. Each XML resource description includes important information about the resource location, the proper invocation protocol (i.e., input/output types, parameter specifications, etc.), run-time controls and data-types. This XML schema also includes auxiliary metadata about the resource state, specifications, history, authorship, licensing, and bibliography. The LONI Pipeline infrastructure (<http://pipeline.loni.ucla.edu>) facilitates the integration of disparate resources and provides a natural and comprehensive data provenance. It also enables the broad dissemination of resource metadata descriptions via web-services and the constructive utilization of multidisciplinary expertise by experts, novice users and trainees.

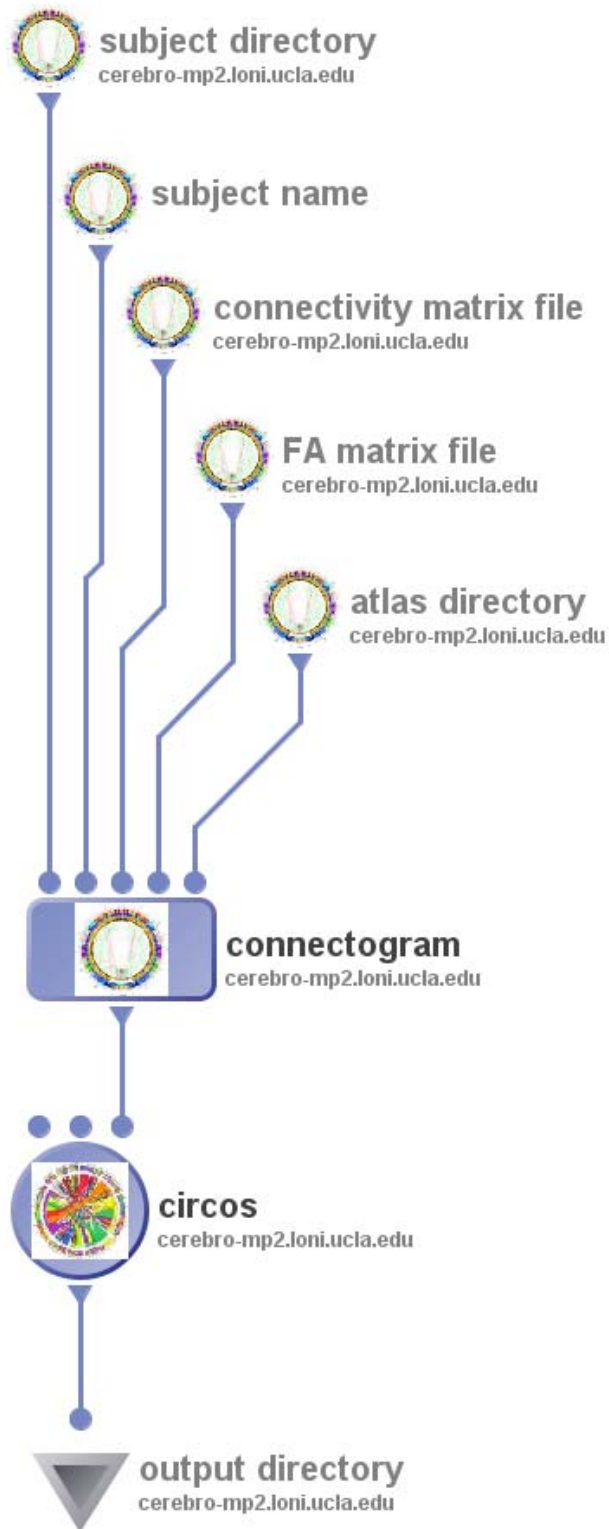
Connectogram generation. Supplementary Figure 1 illustrates the encapsulation of the connectogram generation workflow within the LONI pipeline environment.

Module description. Included in the workflow are two modules. The function of the first of these (“connectogram”) is to generate Circos input files based on user-provided inputs. The second module (“circos”) generates the connectogram based on the Circos input files generated by the connectogram module. The output connectogram image is written to the output directory.

Arguments.

<i>subject directory</i>	absolute path to the parcellated input MR volume example: <code>/ifs/connectogram/subjects</code>
<i>subject name</i>	name of the parcellated input MR volume example: <code>subject1</code>
connectivity matrix file	absolute path to the connectivity matrix file example: <code>/ifs/connectogram/inputs/CM.mat</code>
FA matrix file	absolute path to the FA matrix file (for link color encoding) example: <code>/ifs/connectogram/inputs/FA.mat</code>
atlas directory	absolute path to the atlas directory file example: <code>/ifs/atlas</code>
output directory	absolute path to the output directory example: <code>/ifs/out</code>

Example. A sample connectogram pipeline file is provided with this release.



Supplementary Figure 1. Connectogram generation workflow in the LONI pipeline environment

Supplementary Reference

Dinov, I., Lozev, K., Petrosyan, P., Liu, Z.Z., Eggert, P., Pierce, J., Zamanyan, A., Chakrapani, S., Van Horn, J., Parker, D.S., Magsipoc, R., Leung, K., Gutman, B., Woods, R., Toga, A., 2010. Neuroimaging Study Designs, Computational Analyses and Data Provenance Using the LONI Pipeline. PLoS One 5.