RSMLx Excel Plugin Documentation

2014

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Introduction

RSMLx is a Windows based Excel plug-in for viewing and quantifying Root System Markup Language (RSML) files. Once installed, RSML files can be read directly into Excel, with quantification and thumbnail image output performed automatically.

Installation

The RSMLx source code is contained within the RootNav .NET solution, where it makes use of the RootNav libraries for reading RSML files and producing thumbnail images. RSMLx can be compiled directly from within Visual Studio, or can be installed using the pre-compiled installer. If using the installer, first unzip the installation folder, and run setup.exe. You will be prompted to install the plug-in.

Running the Excel Plugin

Once installed, RSMLx appears as Ribbon tab at the top of Excel (Figure 1).

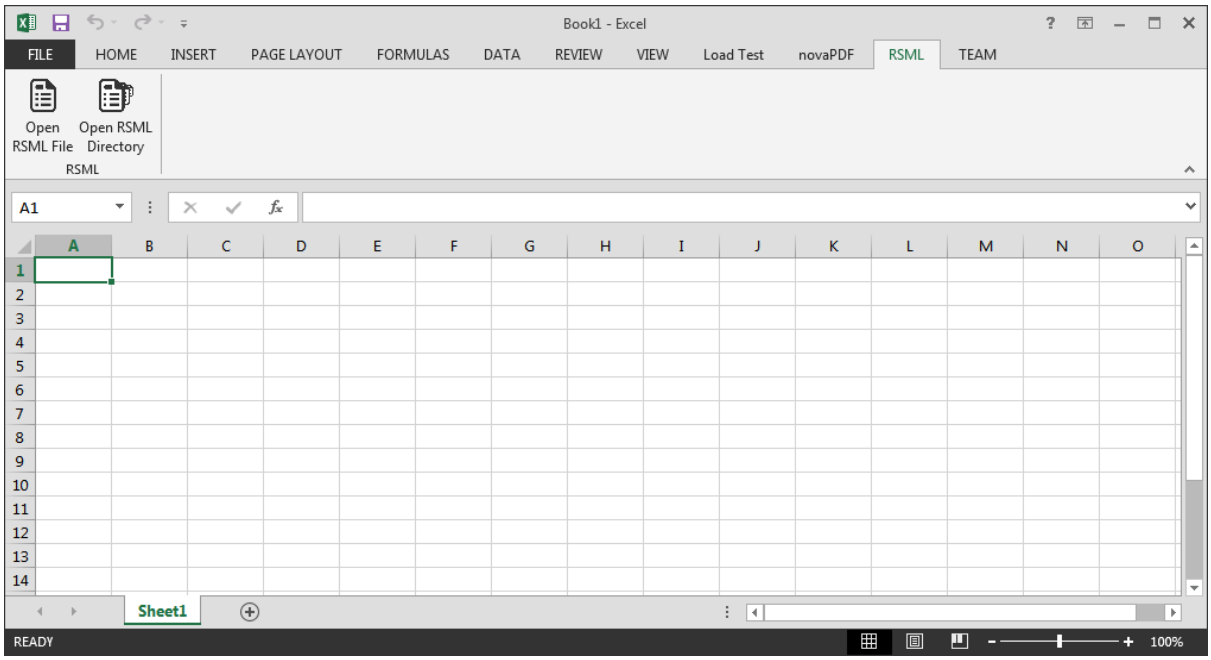

Figure 1: The RSML tab appears at the top of Excel on the Ribbon interface. Selecting this will provide the option to load one or more RSML files.

Opening RSML Files

RSMLx can load one or more files simultaneously. If the "Open RSML File" is selected,

then a single file is loaded, including detailed information on each plant contained within that file. The plugin will also output thumbnail images that depict each plant, and the overall file appearance. A load file dialog will appear, from which you should select a single RSML file, the information pertaining to that file will then appear within the Excel sheet (Figure 2). If

multiple files are loaded consecutively, then each will be added to a new sheet, rather than overwriting the old one.

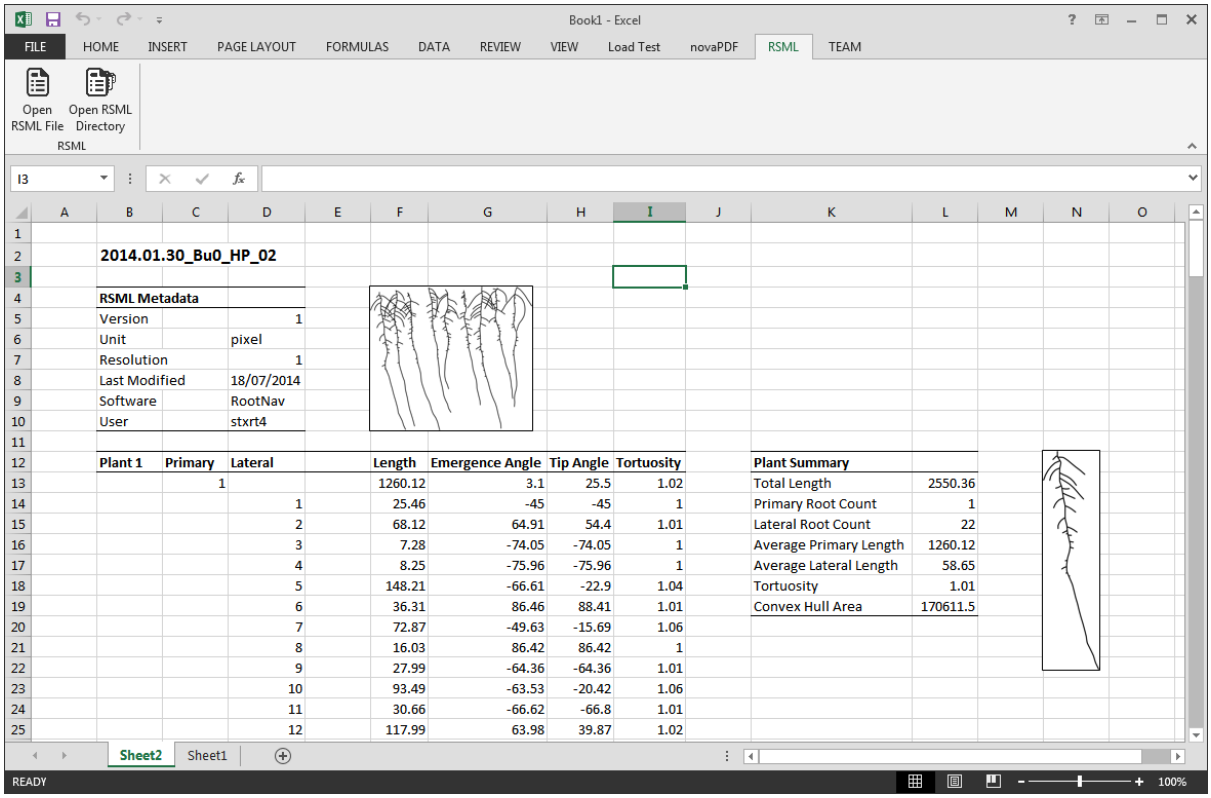

Figure 2: When individual RSML files are loaded, detailed measurements are provided along with thumbnail previews of the plant geometry.

Opening RSML Directories

For multiple RSML files, each one can be loaded simultaneously. Rather than selecting all RSML files, choose the directory that contains them, the plugin will then find all files, and produce a list of them, ordered by file id. A selection dialog will then appear, that can be used to choose which files within the chosen directory should be quantified (Figure 3).

The list of IDs can be filtered by entering text into the filter box, then a number of items can be selected. Multiple selection is achieved in the same way as files in Windows, Shift for continuous selection, Ctrl for individual selection or deselection.

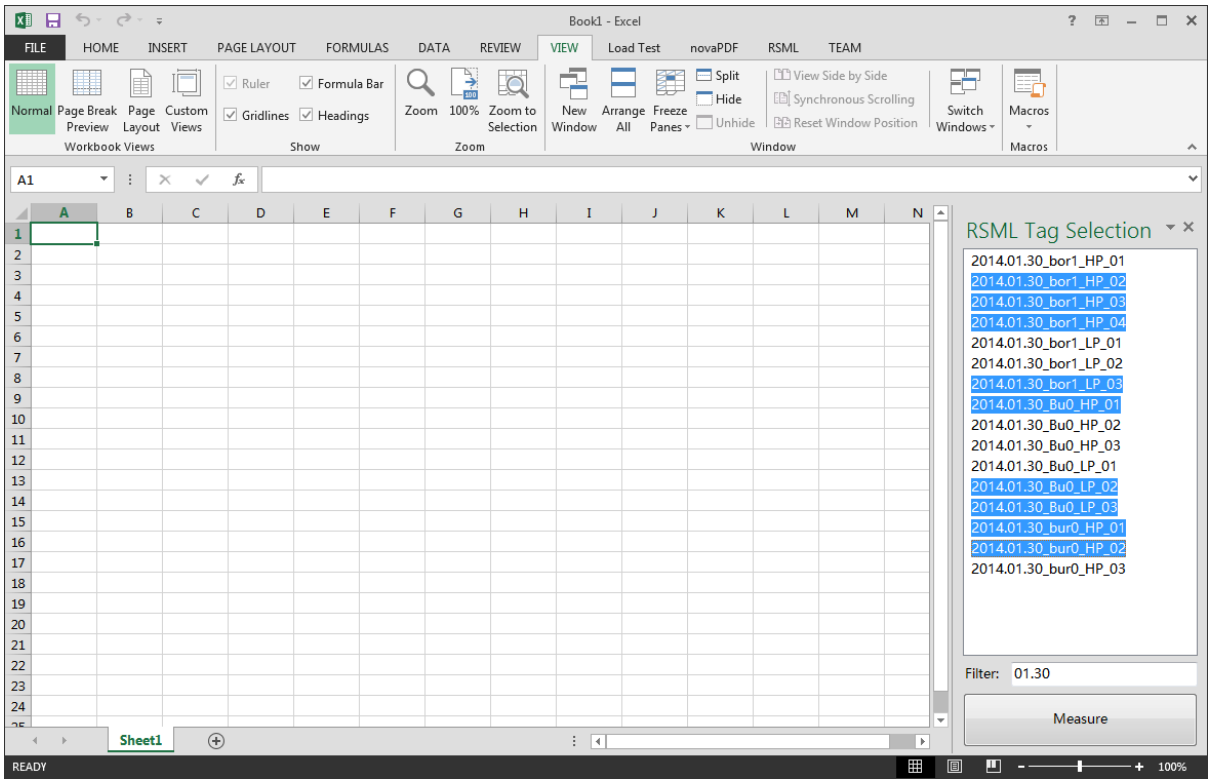

Figure 3: Multiple RSML files can be loaded from the tag selection toolbox that will appear once a folder is selected. Tags can be filtered using the text box, then measured by clicking the Measure button.

Once the measure button is clicked, the plugin will calculate traits over the entire set of RSML files (Figure 4).

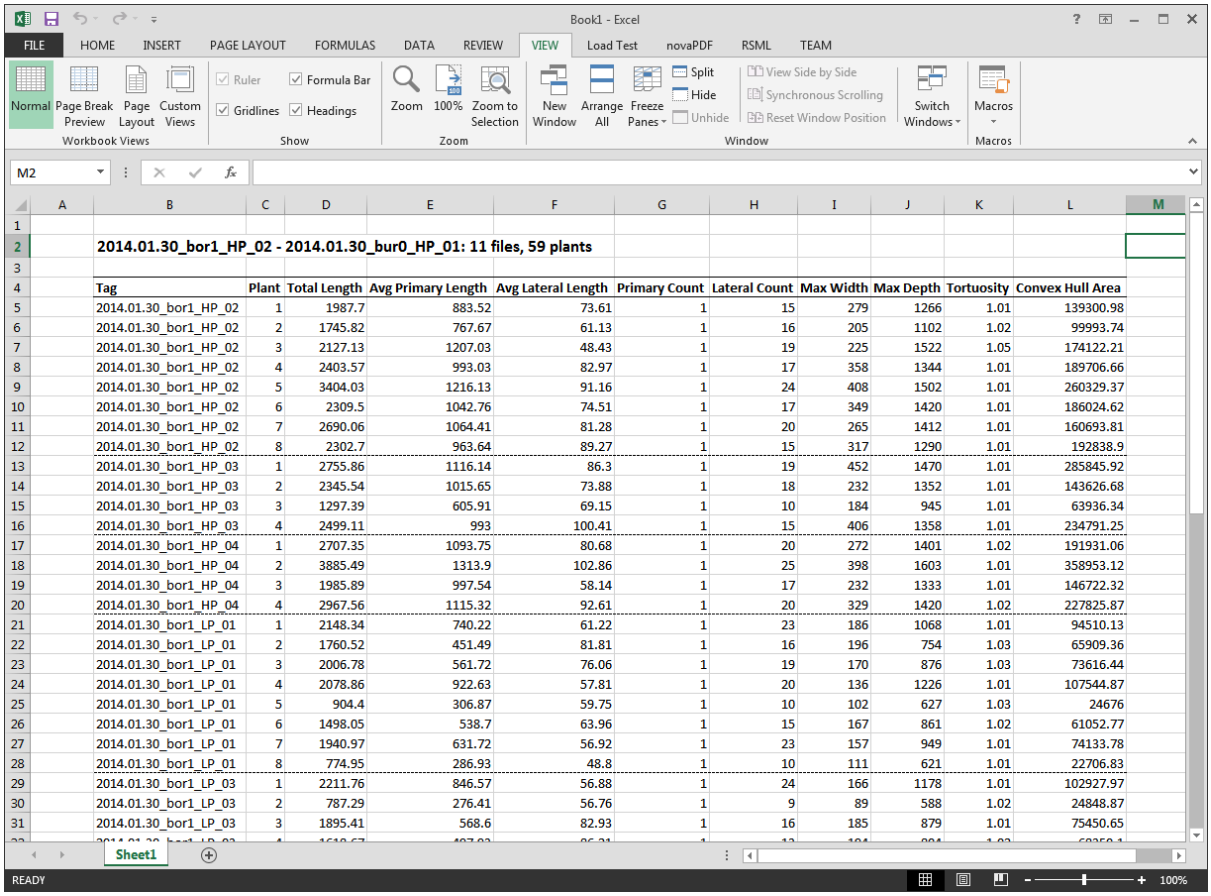

Figure 4: The form of the spreadsheet produced for multiple files differs from that produced for single files. This is aimed at making analysis of multiple files as quick as possible inside Excel.

Contact

Details on the tool, its development and other RSML compatible software can be found on the RootSystemML website at http://rootsystemml.github.io/. For queries about the development of this plugin specifically, please contact michael.pound@nottingham.ac.uk.