Development of A Provider Feedback SSIS Dashboard Using SAS Analytic Modules for Transparent and Reusable Workflows on Veteran Affairs Health Care Data

Tao He[1] , Celena Peters[1] , Zachary Burningham[1], Chris Leng[1], Tina Hyun[1], Brian C. Sauer[1]

[1]SLC VAMC, Health Services Research and Development (IDEAS) Center and Division of Epidemiology, Department of Internal Medicine, University of Utah

Objectives

• SQL Server Integration Services (SSIS) is a platform to help extract, transform and load data for analytic treatment and display in SQL Server Reporting Service (SSRS) and SharePoint, respectively. Microsoft, however, has limited analytic capabilities.

• We developed a Java tool to extend SSIS platform functions and provided SAS support in our SSIS dashboard package.

• Based on this tool, we now support reuse of existing SAS analytic modules into the SSIS platform.

• We present our SSIS workflow that leverages SAS analytics for VA operational decision support.

Methods

• The Veterans Affairs maintains a SAS GRID that supports parallel processing.

• A SSIS dashboard is designed provide information on VA patients opioid use.

• Patient historical opioid use is estimated using the SAS Medication History Estimator (MHE) Module (Figure 1).

• A command tool "*SASGridLauncher*" is developed to remotely submit SAS tasks into the SAS Grid servers. The tool's commands are shown in (Figure 4).

• The tool is configured in SSIS (Figure 3) and can easily detect and flag errors during execution in SAS Grid

• We tested the SAS launcher by exploring statistical associations between patient and provider gender (Figure 2).

Conclusions

• We demonstrate the ability to launch and use Transparent ReUsable Statistical Tools (TRUST) developed in SAS in our Microsoft SSIS generalized workflow.
• This generalized framework supports transparent and reproducible patient and provider process monitoring
• Since the framework is generalized it supports rapid deployment of process monitoring in new domains

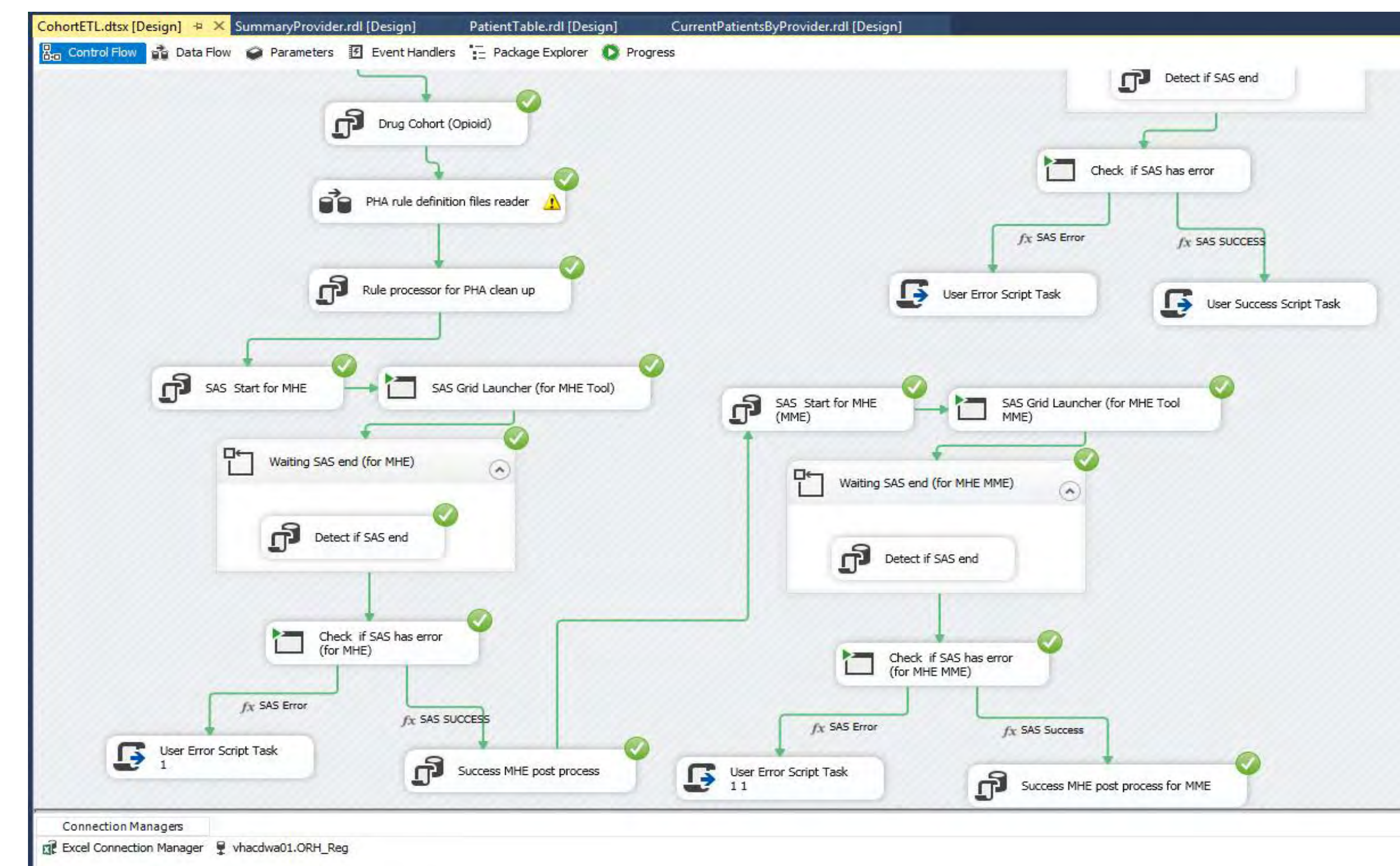### Figure 1. Design and Execute SSIS Dashboard with MHE SAS Modules

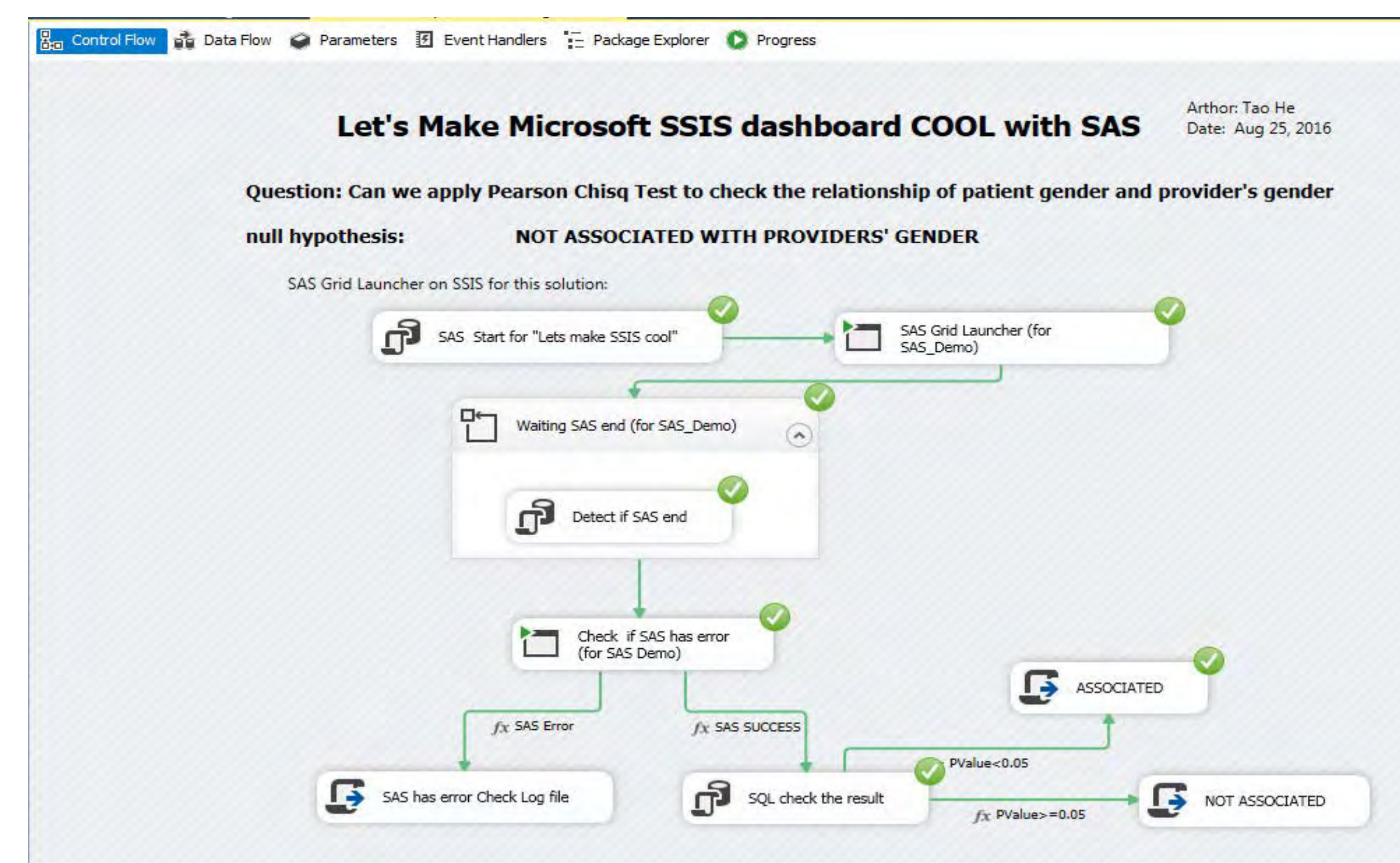### Figure 2. Design and Execute SSIS Dashboard with SAS Chisq Test
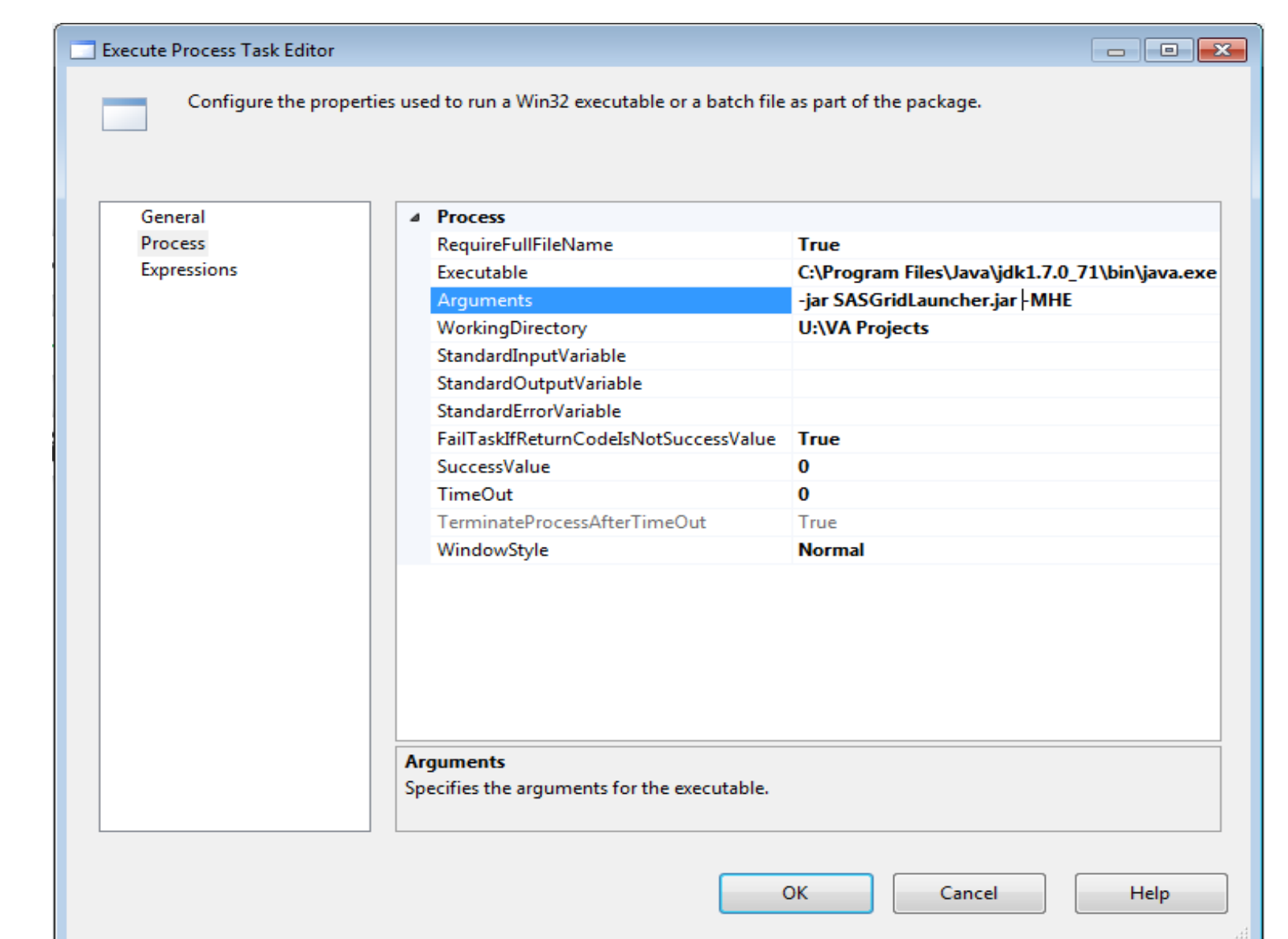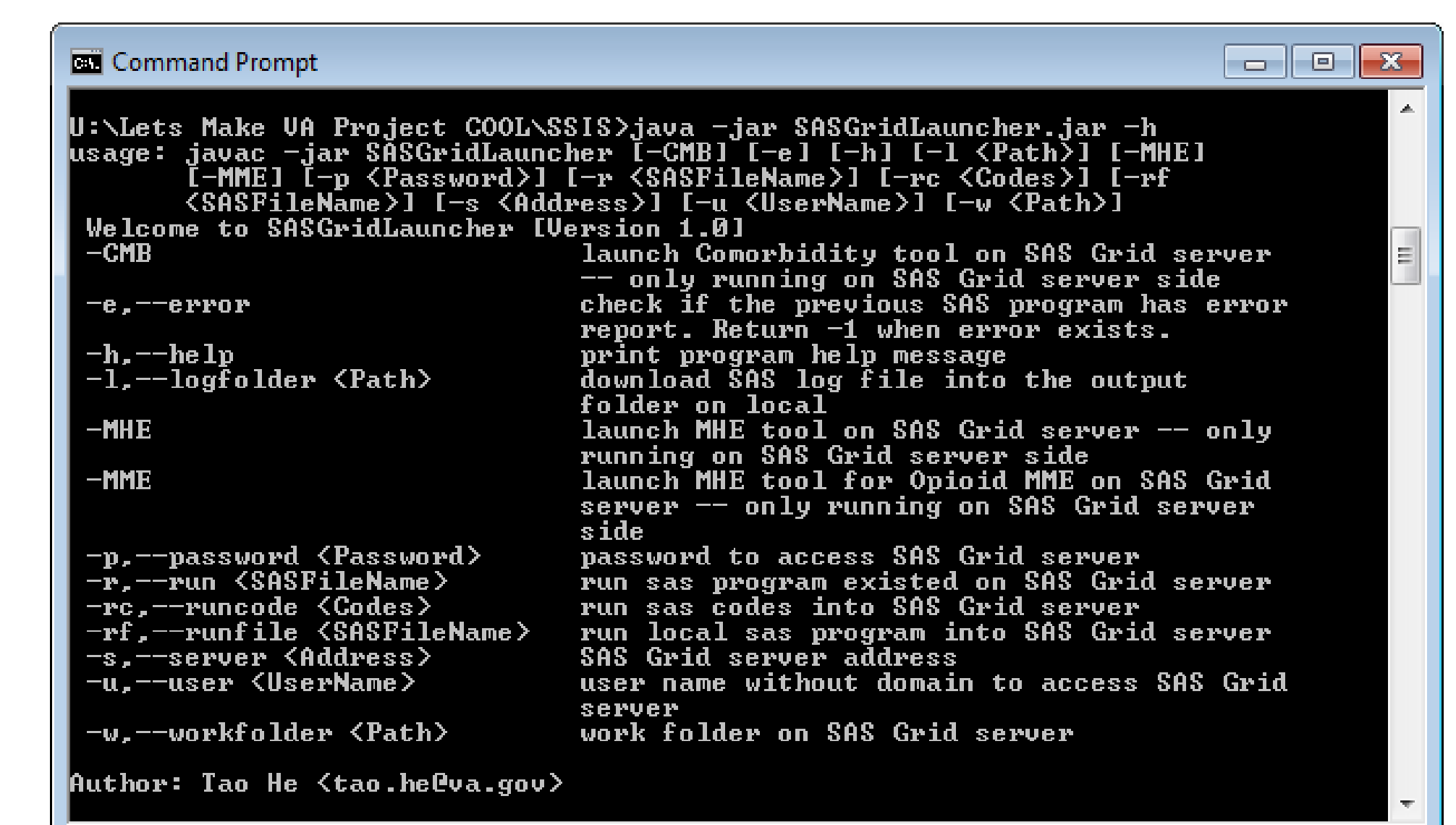

Figure 3. SSIS Configuration

Figure 4. "SASGridLauncher" Commands

Contact Information

• Tao.He@va.gov (Tao.He@utah.edu)