# Streamline the collaboration - From Whitepaper targets (TFL) to Sharable Scripts

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## ABSTRACT

The Standard Analyses and Code Sharing working group relies on the distributed volunteers to review, develop, test and qualify standard scripts for general use. Volunteers should be able to easily find ways to contribute, either by improving our processes or working directly on the development and qualification of standard scripts for the tables, figures, and listings (TFL) defined in the white papers. There are six project teams formed in the working group to collaborate and achieve the goals. Particularly, there are SAS and R language sub-teams currently in the Repository Content and Delivery (RCD) project and Script Metadata for Sharing sub-team in Repository Governance and Infrastructure (RGI) project. This poster will show the structure of the repository in the GitHub environment, look at the targets (TFL) defined in the whitepaper, the scripts developed for the targets, the guidelines for qualifying scripts, the steps for contributing scripts and a new way of accessing, sharing and executing scripts with script metadata using R phase package.

## THE SIMPLE VISION

### Background: Standard Gap

Vision: Fill the Gap on Analysis and Display Standards

- **CDISC**
- **FAST**
- **PhUSE**

### Background: Common Toolbox

Vision: From Everyone Building Their Own Tools to Shared Tools

- **Repository**
- **Metadata**
- **Data**

### Overview: Script Repository

Vision: Collaboration patterns and Shared Reusable Code library

- **Industry**
- **Academia**
- **PhUSE Repository**

https://github.com/phuse-org/phuse-scripts

## FROM THE TARGETS IN WHITEPAPERS

### Example: Mean Changes–Boxplots

- Visualize changes over time, and changes from baseline
- Assess the impact of outliers
- Easy to see treatment differences
- Summary table complements box plot

### Final White Papers: [https://www.phuse.eu/ccs-deliverables](https://www.phuse.eu/ccs-deliverables)

## THROUGH QUALIFICATION PROCESS

### Roles

- **Contributor:** Anyone with skill & interest
- **Developer:** A volunteer familiar with our objectives
- **Reviewer:** A volunteer familiar with our objectives
- **Tester:** Contributors to our white papers

### States

- **Contributed:** Script received from any source
- **Developed:** A volunteer is progressing the script
- **Reviewed:** A volunteer is reviewing the script
- **Qualified:** Successful review, ready for public use

## TO SCRIPTS IN THE REPOSITORY

### R shiny and phase package

- **Shiny** is an R package for building interactive web apps straight from R.
- The phase package helps finding, downloading and executing scripts.

- **PhUSE Repository:** [http://code.phuse.org](http://code.phuse.org) or [https://code.google.com/p/phuse-scripts](https://code.google.com/p/phuse-scripts)

## CONCLUSIONS

- Industry standards have evolved over time for collected (CDASH), observed (SDTM), and analysis data (ADaM).
- Shared learning of improved methodologies can lead to earlier safety signal detection and better safety profiles.
- Our working group volunteers are delivering standard data displays based on industry input and review.
- We have established an open-source repository for sharing SAS and R scripts across the industry.
- We now aim to deliver standard scripts that can be used across the industry to deliver standard displays & analyses.
- Script metadata provides the information about the script's purpose, version, execution environment, inputs, outputs, review history, ratings, etc. It makes it easy to share, access and execute scripts in the repository.
- The phase R package provides a web application framework for further building a platform for sharing and accessing the scripts in the repository. R, RStudio and R shiny are the important tools for the statistical computing environment.
- Building R packages with metadata is the first step to make script repository into CRAN alike (Comprehensive R Archive Network) for the shared scripts.