

October 22, 2017

Mountains and Plains on FHIR

#26 Sepsis Prediction System



INTRO

DESIGN

DEVELOPMENT

TIMELINE

Team Technical Presentation Deliverable 2

David Hills - Dev / QA

William Lyman - Dev / Server

Carol Rice - Dev / Architecture

Kevin Brandt - PM / QA

Dr. Nemati / Dr. Engels / Madhu - Mentors

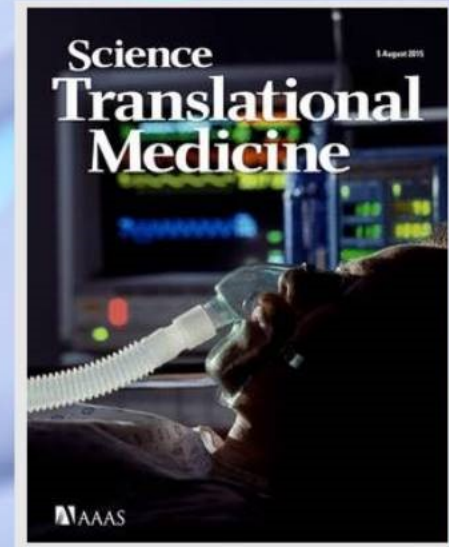
INTRO

Important Healthcare Terms for this Project:



- Sepsis - A condition when the body's response to an infection causes injury to itself.
- TREWScore - A machine learning discovered score that has a high accuracy of predicting the onset of sepsis for early treatment.

Overview



05 August 2015
Vol 7, Issue 299

<http://stm.sciencemag.org/content/7/299/299ra122>

Overview

1

Introduction

2

Function and Screen Prototypes

3

Architecture and Tools

4

Timeline



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DESIGN

High Level Function and Screen Prototypes

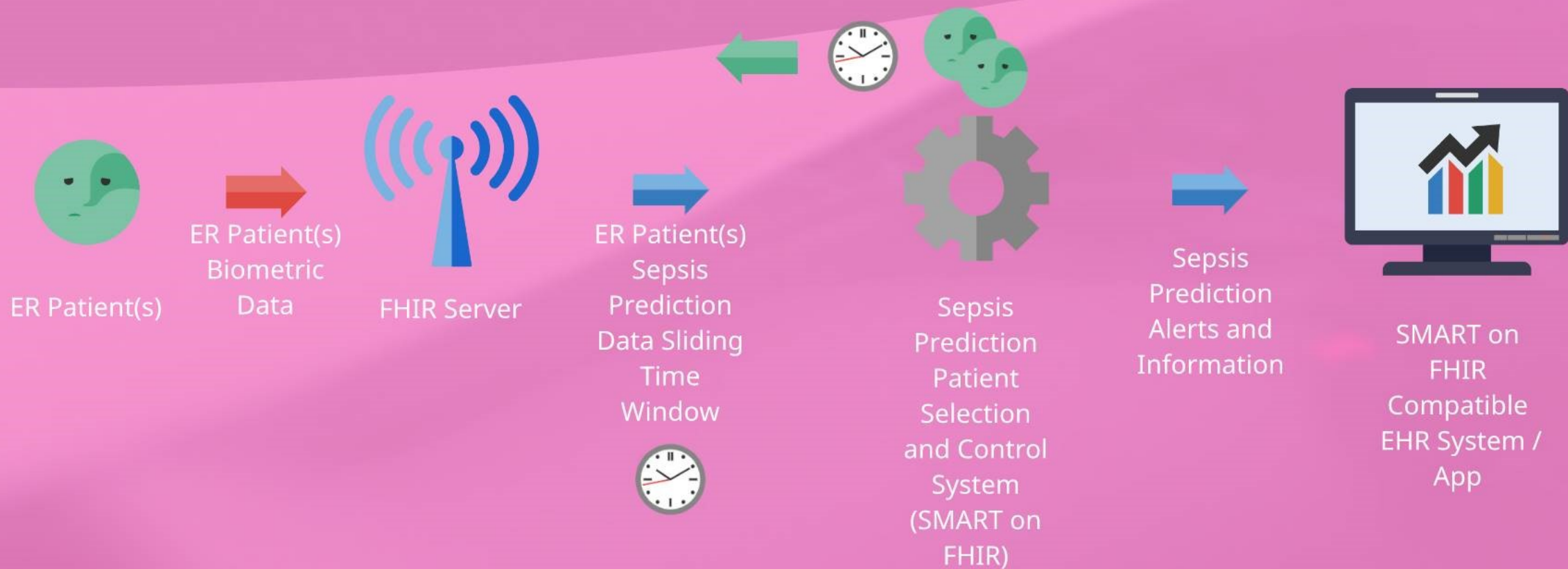
SCREENS

FUNCTION



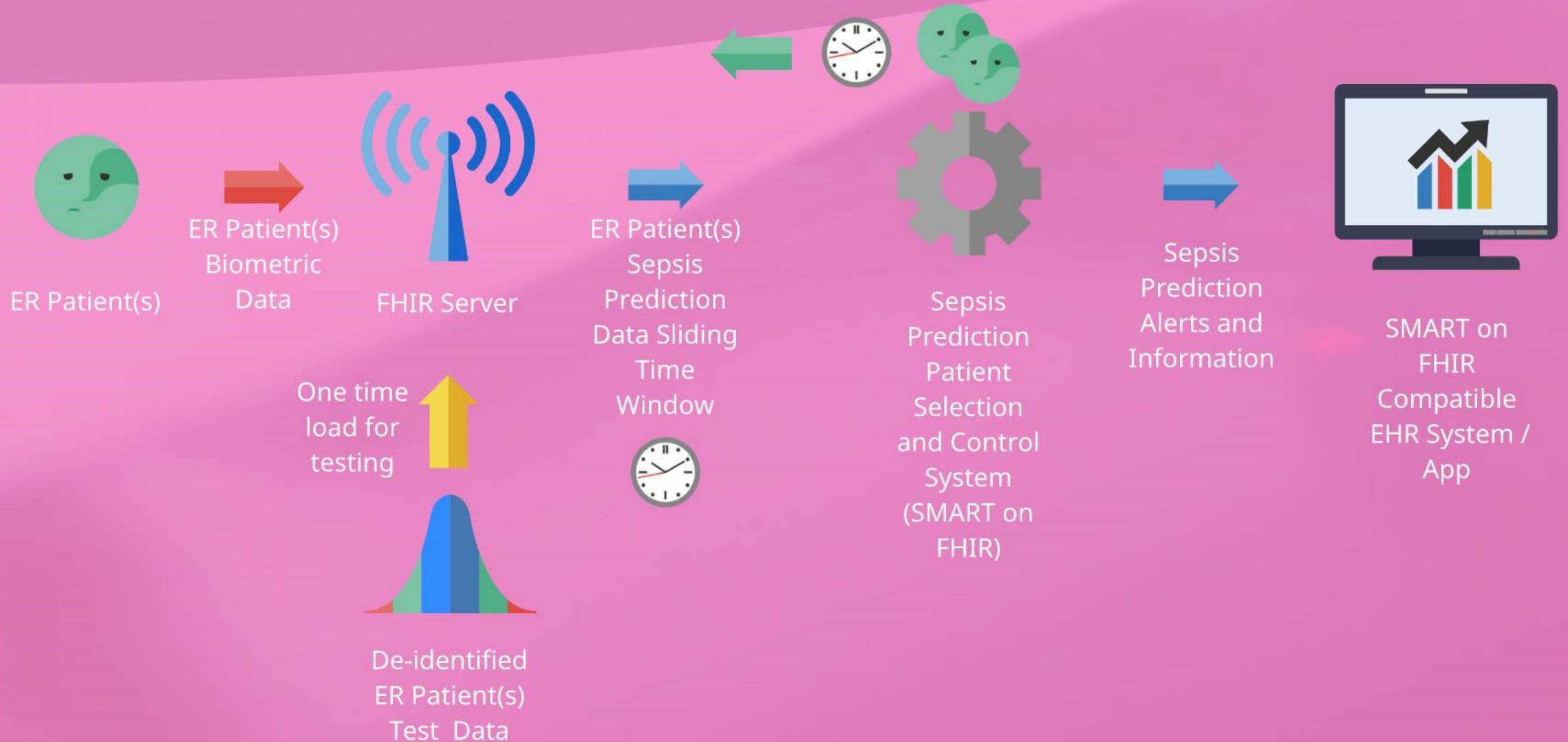
FUNCTION

Overview and Data Flow



FUNCTION

Overview and Data Flow



SCREENS

Draft Screen Prototypes



Patient Selection and Time
Window Setting



Patient Alert



DEVELOPMENT

Architecture And Tools Overview

Tools

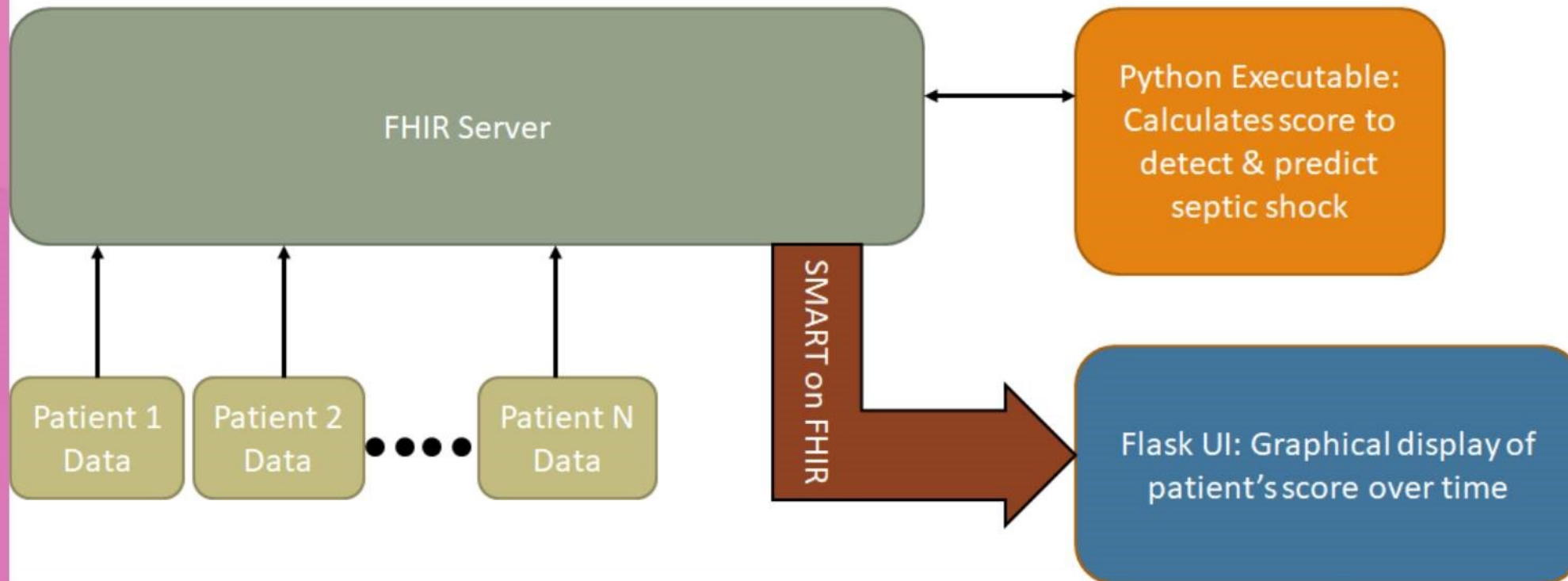
Architecture



Architecture

SMART on FHIR

SMART on FHIR: Prediction & Detection of Septic Shock



Tools

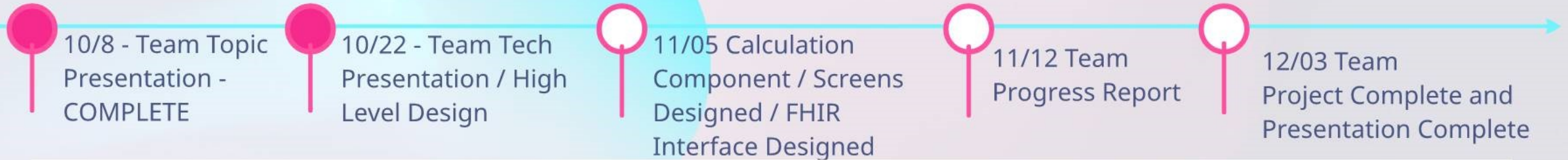
Tools and Platform



- Platform (test): Debian Linux on Google Cloud
- **FHIR Server (test): HAPI FHIR (Java)**
- **Prediction System Language: Python and client-py for connectivity**
- **Prediction Library: Python from Dr. Nemati**
- IDE: Pycharm by JetBrains
- Presentation tool: Prezi + Debut Recording
- Screen prototype tool: Pencil Software
- UI for SMART on FHIR: Flask and C3.js
- Architecture diagram: Powerpoint

TIMELINE

Major Milestones and Gantt



Sepsis Prediction System

Select a period to highlight at right. A legend describing the charting follows.

Start: 10/9/2017

Selected Date: 10/22/2017

Day Highlight: 14

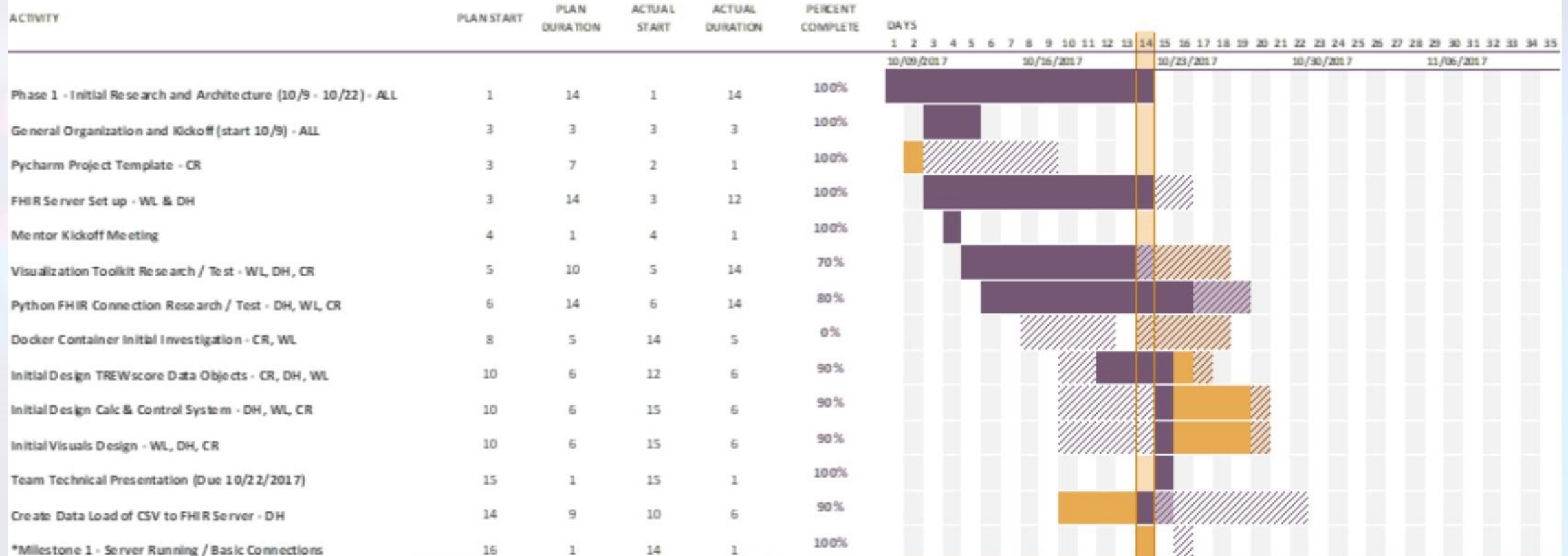
Plan Duration

Actual Start

% Complete

Actual (beyond plan)

% Complete (beyond plan)



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