

February 9, 2022

Optimizing Wiring Routes in Airplanes

System Overview

Team Name: *Maze Runners*

Team Members and % contribution:

Tarini Thiagarajan	20 %
Riley Ylagan	20 %
Aanchal Singh	20 %
Vincent Lebovitz	20 %
Michael O'Lear	20 %





System & Subsystems

- System: Electrical Wire Routing Optimization (EWRO) Software Application
- Subsystems
 - Graphical User Interface (GUI)
 - Input processing function
 - Output processing function
 - Weighting constraint analysis of electrical wire routing placement
 - Mathematical model for providing analytical solution of spline equations

Input & Output Structure

Inputs

Wiring constraints
(i.e. curvature, separation)

Quantitative table

2D matrix

CAD aircraft model for mapping

3D CAD aircraft model
(Solidworks)

or

3D mesh generation (Pygmsh)

Blackbox

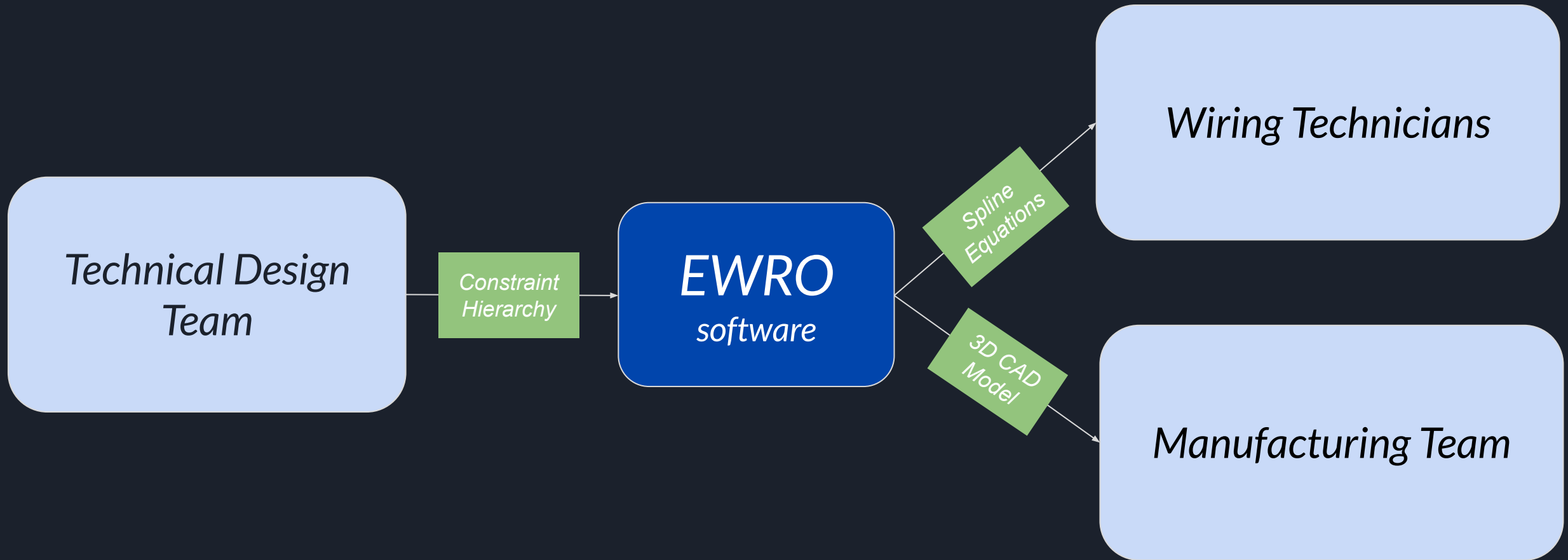
EWRO
software

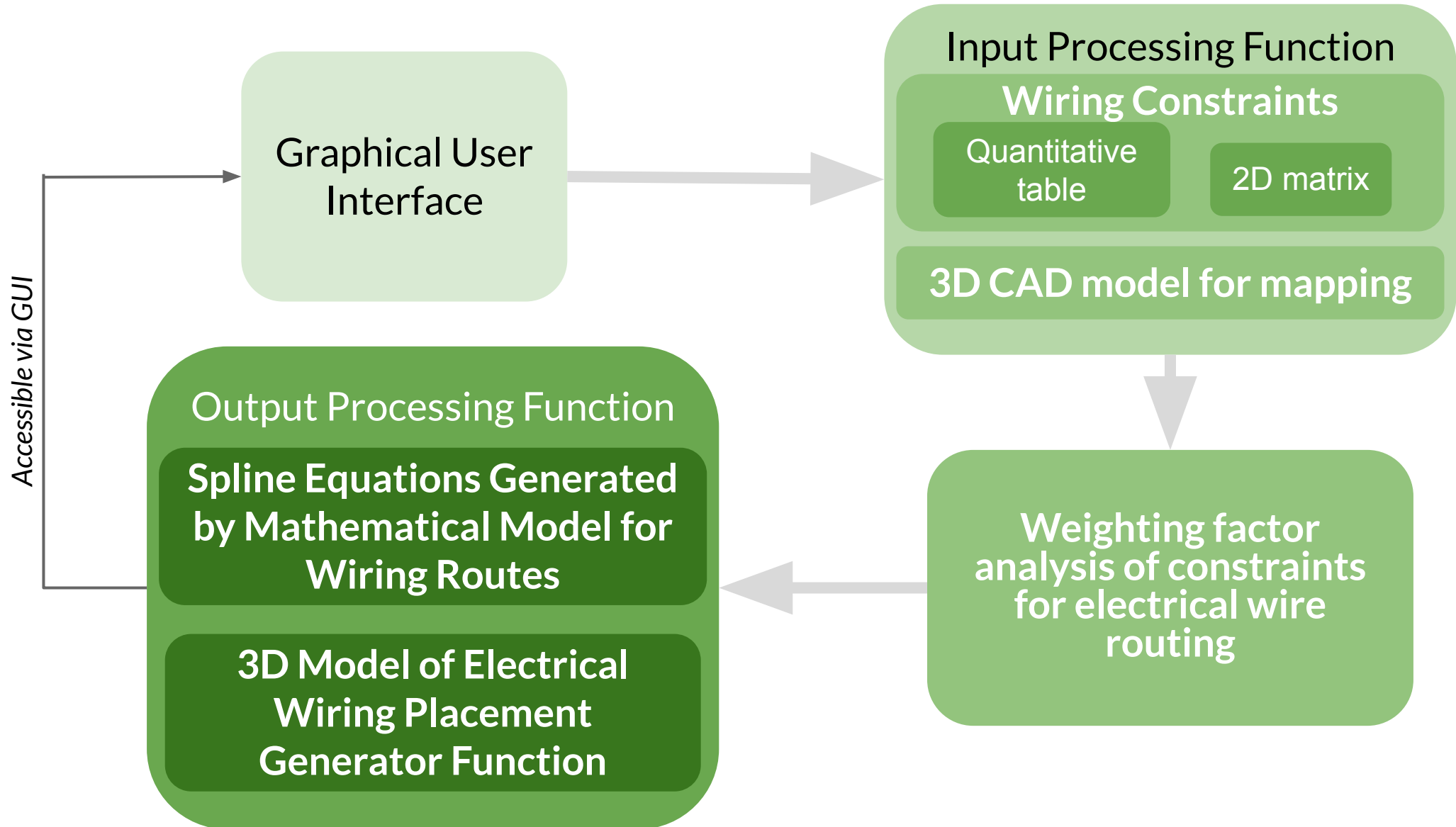
Outputs

A set of cubic
spline equations

3D CAD model

System Interactions





Questions?

