Vahid Zohrehvandi Autodesk PLM Technical Specialist
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AUTODESK. UNIVERSITY

Rapid Fusion Lifecycle Deployment When Time Is of the Essence

Vahid Zohrehvandi Autodesk PLM Technical Specialist

Katelyn Wilson D3 Technologies PLM Solution Architect

About the speaker

Tony Zohrehvandi

Mr. Zohrehvandi is Technical Specialist at AUTODESK since Oct. 2015 based out of Frisco, TX. His experience includes PLM implementation, PLM integration to PDM and ERP systems, software/hardware architecture development, software deployment, process development, and deployment of PLM systems.. He has worked as a mechanical engineer for a discrete manufacturing company, IT Manager for a defense contractor, solution architect for a software development company, and PLM senior manager for a consulting firm. He has managed overall delivery of large enterprise PLM systems as a technical sales lead and project manager. His industry experience spans aerospace & defense, automotive, electronics and high tech, medical device, industrial equipment, and retail/consumer goods. He obtained a Master of Science in Mechanical Engineering from the University of Texas at Arlington.

About the speaker

Katelyn Wilson

Katelyn Wilson is a PLM Solution Architect for D3 Technologies. She studied Industrial Engineering at the University of Louisville, completing several co-op rotations in manufacturing, and graduated with her BSIE in August of 2015.

Katelyn enjoys learning and practicing Lean concepts and is a Certified Black Belt in Lean Six Sigma.

She currently serves as a Certified Fusion Lifecycle implementation specialist alongside the PLM team at D3 Technologies, delivering first-class product implementations.

Outside of work, Katelyn enjoys caring for her animals – 3 dogs, 22 chickens, 2 geese, 1 rabbit, and a few fish. She also enjoys watching scary movies and true crime documentaries, playing Beat Saber, and officiating weddings.

The PLM Story

Implementing Fusion Lifecycle PLM in a record speed taking advantage of out of box capabilities

The AURA Ventilator project team determined that a structured PLM tool was needed to facilitate product development and take the Ventilator to production in response to a ventilator shortage due to the COVID-19 pandemic in a record time.

Autodesk's Fusion Lifecycle solution was deployed on an extremely aggressive schedule. A prototype of the ventilator was completed using Fusion 360 software. Now it is time to build a functional PLM system that meets the project's critical needs and takes it into mass production using Items and BOMs, ECO, and NPI Workspace of Fusion Lifecycle.

How it Started

The Team

Morningbird media

Chance M Glenn Sr. is a provost and vice president for academic affairs at Univ. of Houston-Victoria and former dean of the College of Engineering, Technology and Physical Sciences at Alabama A&M University in Huntsville. He is also serving as a president and executive director of the Alabama A&M University Research, Innovation, Science and Engineering Foundation.

AUTODESK.
Make anything.

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D3 TECHNOLOGIES

FUSION LIFECYCLE

AUTODESK® FUSION 360™

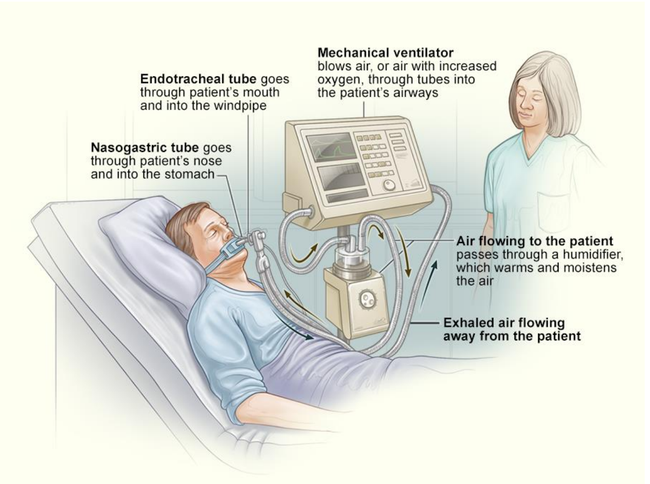
BOMMER

Corey Mack · 1st
A Creative Technologist to Advance Humanity

Antonette Jackson ·
Technical Product Manager

AURA – A Low Cost COVID-19 Ventilator

Given shortages of medical equipment, this machine was designed to be made with off-the-shelf parts, 3D printed components, and with some modular components. This enables this machine to use a variety of alternate parts should a source be exhausted. For example, first stage of the air filter is a HEPA filter for a vacuum cleaner. If this were to run out, a different air box would be 3D printed so a different filter could be used, since many of the off-the-shelf components are standardized. We will crowdsource the 3D printed components in two scenarios.



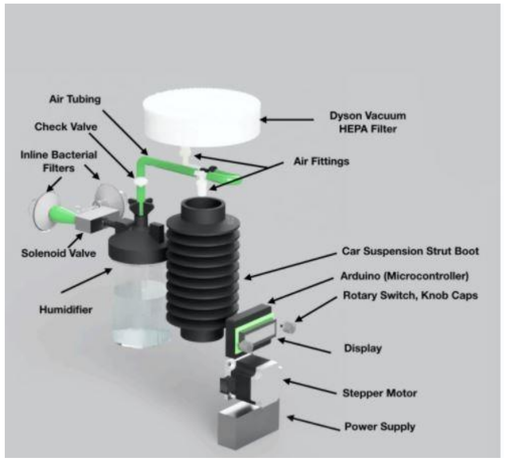
AURA – A Low Cost COVID-19 Ventilator

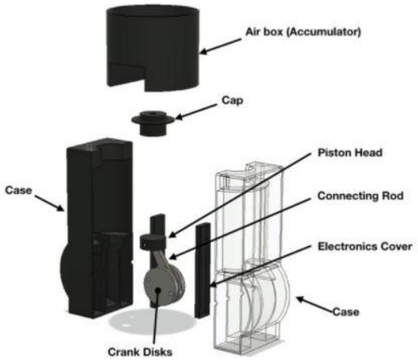
- **Features & Safety:**
- Intake Filter by Essentra
- Patient Inline Filters
- O2 Hookup
- Sensors by Honeywell
- Silicone Bellows Pump
- OLED Display (Monochrome)
- 4 Modes
  - Assisted Control (AC)
  - Pressure Control (PC)
  - Pressure Support (PS)
  - Constant Pressure (CPAP)
- Programmable Alarm

A low-cost

COVID-19 Ventilator

NOW IN DEVELOPMENT





The Stages of PLM Implementation

PLANNING

Develop a project plan to include activities, RACI, timeline, and status

REQUIREMENTS GATHERING

Using Items & BOMs, Change Order, and New Product Introduction Out of Box configuration to drive the requirements gathering process. Using what is already configured and capturing the delta based on what is needed to manage the Ventilator project production go live.

SOLUTION DEVELOPMENT

Functional document was developed and reviewed with the customer. Based on the feedback from the customer, adjustments were made, solution was architected, and technical document was developed.

TESTING, TRAINING, AND DEPLOYMENT

Solution was deployed in Fusion Lifecycle, it was validated with testing, presented to the customer with training combined, user acceptance tested, and planed for go live.

Planning – Simple Planning

Identify high level tasks, identify responsible, accountable, consulted and informed roles, specify solid due dates, provide status, and additional notes.

- **Simple Project Plan**
  - Activities
    - Requirements Gathering
    - Solution Architecture
    - Development
    - Testing
    - Deployment (Go-Live)
  - Identify Team Members
    - Project Champion
    - Project Lead
    - Support (Subject Matter Experts)
  - Due Dates
    - Hard target dates for completing each activity
  - Status
    - Not Started
    - In Process
    - Completed

Activity	Responsible		Due Date	Status	Notes
	Lead	Support			
High level project scope	Tony	Katelyn Juan	6/3/2020	Completed	The project scope consist BOMs Workspace update Workspace update with a
Schedule collaboration meetings and weekly status call	Katelyn		6/5/2020	Completed	
Develop requirement documents for New Product Introduction	Juan		6/8/2020	Completed	100% Completed, need t
Provide list of attributes needed to be added to Items & BOM Workspace	Juan		6/8/2020	Completed	100% Completed
Review change order Workspace and determine if additional attribute needed	Juan		6/8/2020	Completed	100% Completed
Review and finalize NPI requirement documents	Katelyn	Juan Tony	6/12/2020	Completed	100% Completed
Review and finalize Items & BOMs additional attributes	Katelyn	Juan Tony	6/12/2020	Completed	100% Completed
Review and finalize Change Order additional attributes	Katelyn	Juan Tony	6/12/2020	Completed	100% Completed
Functional document based on requirements document	Katelyn	Juan Tony	6/19/2020	Completed	100% Completed
Create NPI Workspace configuration based on unctional document	Katelyn	Juan Tony	6/19/2020	Completed	Should be completed by

Requirements Gathering – Start with Basics

IDENTIFY BASIC NEEDS

Fusion Lifecycle comes with pre-built apps that are designed to match 80% of basic needs. These are pre-configured workspaces such as NPI, Items & BOMs, and Change Management.

DOCUMENT THE GAPS

Documenting additional attributes, changes to workflow, etc. to be used in developing solution architecture document.

REVIEW OOTB CONFIGURATION

Provide an overview of what these pre-configured workspaces provide to prepare for solution architecture and gap analysis.

REVIEW AND APPROVE

Review the final requirements document and get sign off from stakeholder before going forward. We must make sure we have a solid requirements document that would not deviate which could delay the implementation.

Solution Development – Minimize the Gap

DEVELOP FUNCTIONAL DOCUMENT

Functional document satisfies all the requirements that were signed off. In order to leverage what is already configured, workarounds can be recommended to stakeholders.

ARCHITECT THE SOLUTION

Once functional document is approved, architect the solution on how this will be implemented in Fusion Lifecycle, the overall technical vision for solution.

REVIEW AND EXPLAIN

Functional document explains how Fusion Lifecycle satisfies the requirements. This is the best time to review how FLC works to address requirements and explain any workarounds.

DEVELOP SOLUTION ARCHITECTURE DOCUMENT

This document provided step by step activities that are needed to implement the solution, from attributes, attributes types, workflows, and any configuration.

Remember FLC is scalable and additional features and capabilities could be added in the future without changing the what is already implemented.

Testing, Training, and Development – Overlap

DEPLOY THE SOLUTION

Start the implementation and perform validation testing as you go. This could be an iterative process until the requirements are satisfied.

USER ACCEPTANCE TESTING

User acceptance testing is a combination of testing and training combined. Anything comes out of testing that does not satisfy the requirements need to be added.

MOCK TESTING

Develop test script and perform mock testing of all the capabilities deployed.

GO LIVE AND HYPER CARE

Make sure by the go live data all systems are go and provide additional hyper care until stable

Phases/Stages

PROJECT KICK-OFF

06/03/2020

High Level Project Scope Development.

REQ. GATHERING

06/08/2020

Requirements captured and validated.

SOLUTION DEV.

06/19/2020

Functional document developed, solution architected, implemented and tested.

GO LIVE

07/01/2020

NPI, Items & BOMs, and ECO workspace are ready and functional for go live..

Summary

"The AURA project was created in response to a ventilator shortage due to the COVID-19 pandemic. The team determined that a structured PLM tool was needed to facilitate product development. D3 Technologies committed to support the project and was able to build out Autodesk’s Fusion Lifecycle on an extremely aggressive schedule. With D3’s exceptionally professional and expert support, the AURA project was able to build a functional PLM system that meets the project’s critical needs." – AURA