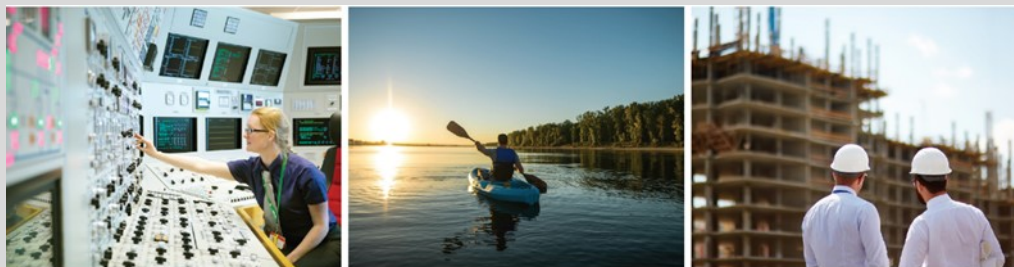


Tennessee Valley Authority



Scaling a UAS Program

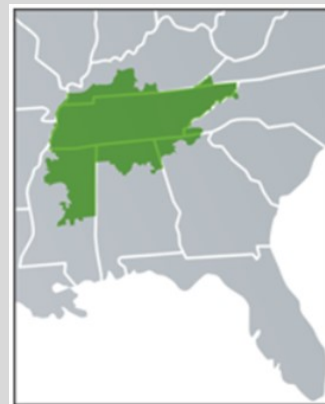


Federal corporation serving 10 million people in portions of 7 southeastern states

73 generation sites, 254 units, 16K miles transmission line

154 local power companies & 54 direct serve industries and federal facilities

- ◆ Energy
- ◆ Environment
- ◆ Economic Development



In the past 18 months:

- ◆ Internal UAS department established
- ◆ Drone fleet has grown from 2 to 35
- ◆ 26 licensed, TVA-trained pilots
- ◆ Safety enhanced, keeping workers on the ground, out of confined spaces and hazardous conditions
- ◆ \$2M in cost savings

Prior History, rough start at TVA...

Phase 1 – CI Team Formation and Use Case Development

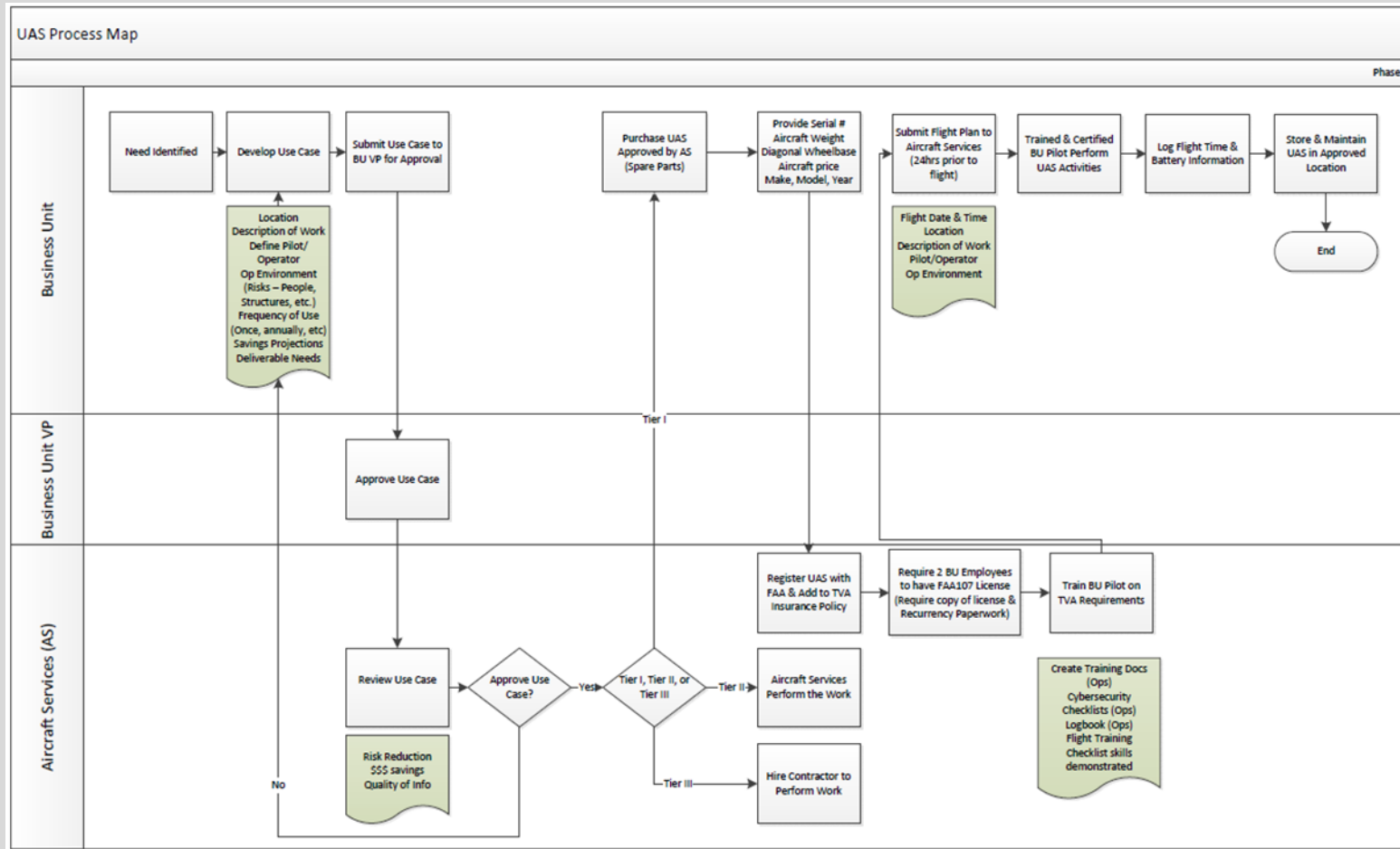
Phase 2 – Process Map and SPP Development

Phase 3 – Flight Testing and Program Development

Phase 4 – Department Implementation and Execution



Process Map





- ◆ **Initial funding- July 2019**
- ◆ **SPP signed August**
- ◆ **First permanent position filled August 2019**
- ◆ **Two additional positions added; fourth position in April 2020**



Tier 1

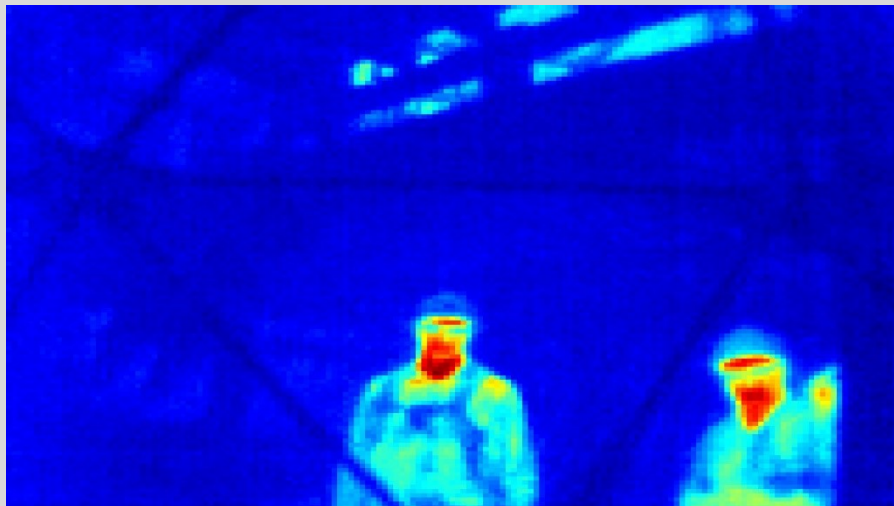
- ◆ self dispatch, cross-trained employees
- ◆ less complex aircraft and missions
- ◆ Internal TVA training:
 - prerequisites: 107 license, BU VP approved use case form, aircraft purchase
 - 22 pilots trained to date (transmission, nuclear, economic development, dam safety, TVA police)

Tier 2

- ◆ more complex aircraft, sensors, flight environments
- ◆ systems over 10 pounds, GPS denied, LAANC, FAA waivers
- ◆ missions performed by internal UAS staff

Tier 3

- ◆ Approved UAS contractors











Transfer data into usable information

- ◆ Machine learning, workflow integration

Train additional Tier 1 pilots

Integrate more advanced sensors and applications

FAA waivers