



THE AIR UNIVERSITY



Project ANNie: USAF Artificial Neural Network Pilot Selection Proof of Concept

Eagles Think Tank Team

SOS Class 18E



Target Predictive Analysis

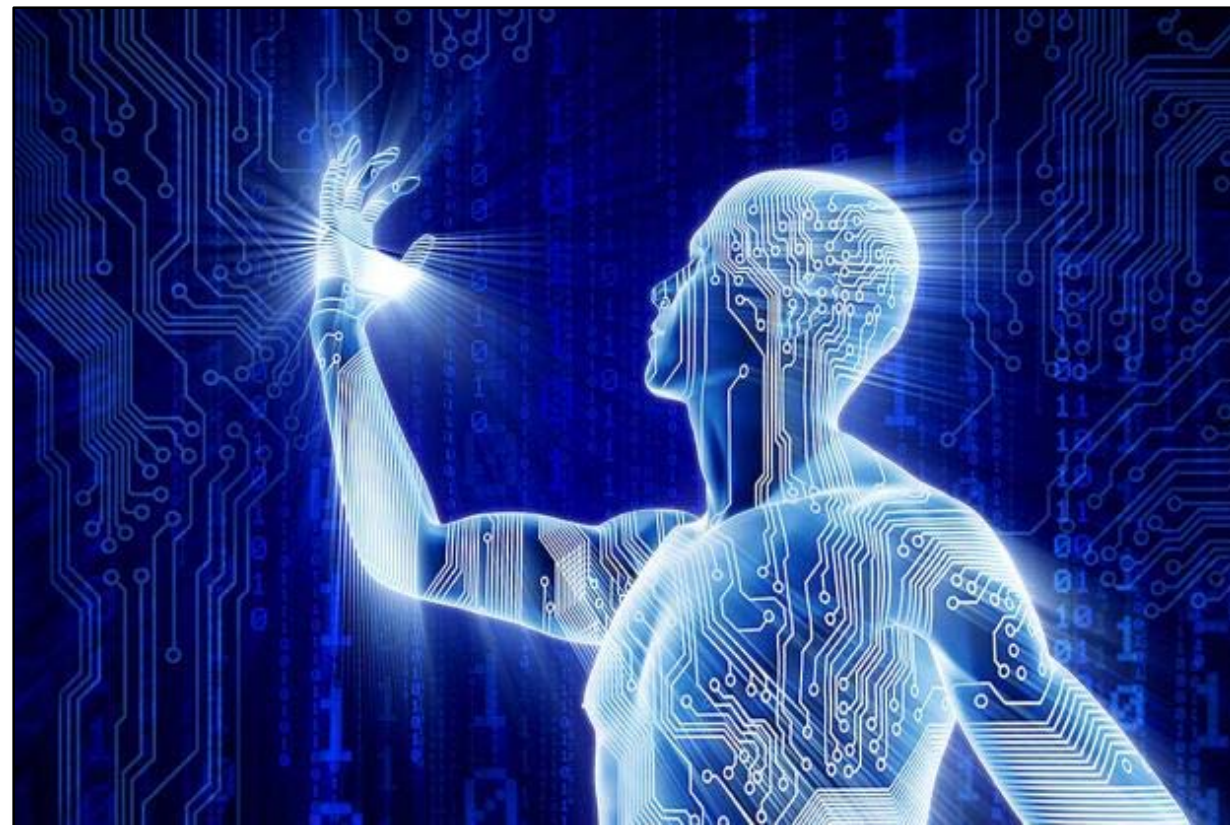




Overview

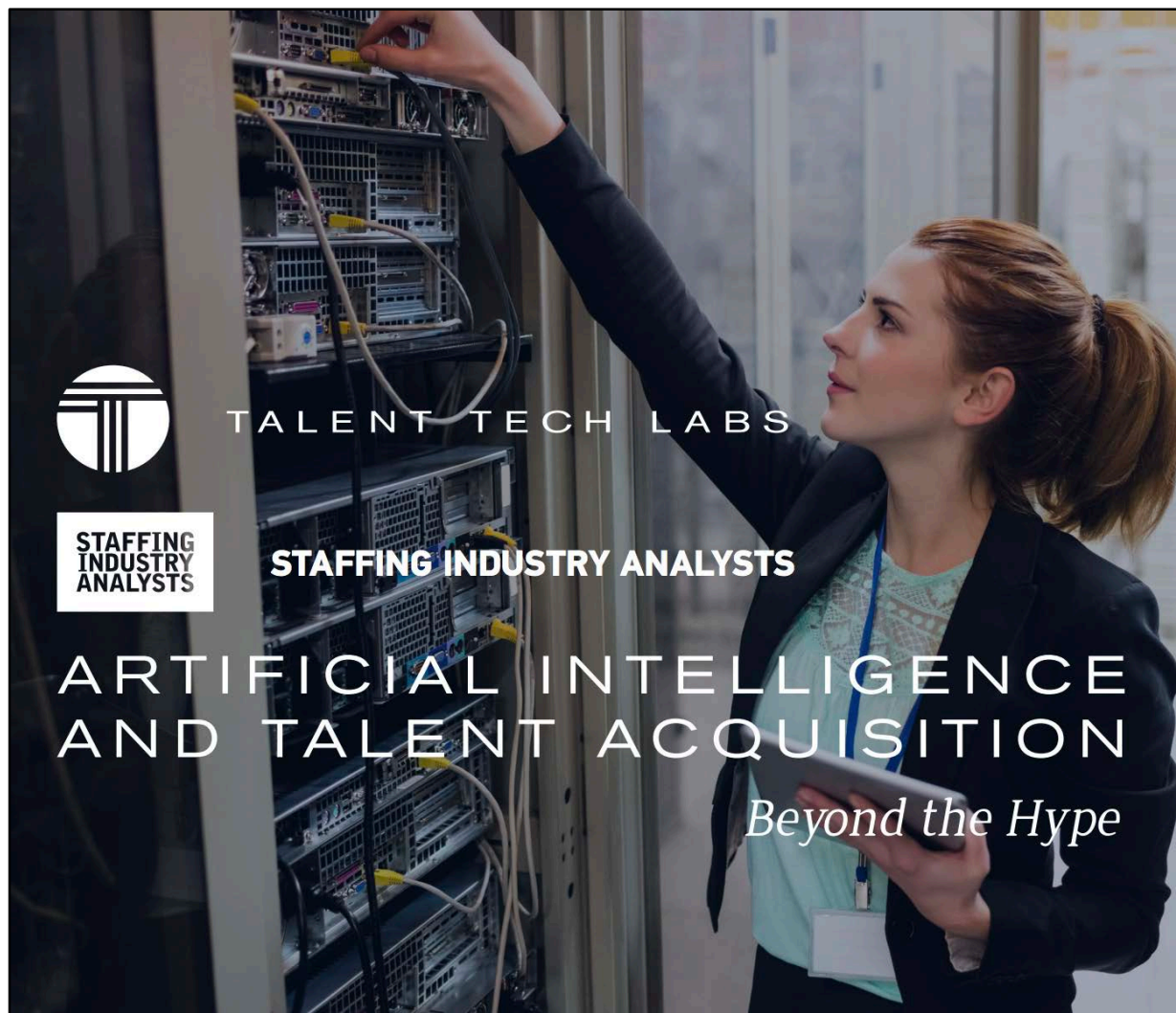


- Background
- Pilot Selection Problem and Solution
- Technology Overview
- Current Industry Use
- Concerns
- Pilot Selection Proof of Concept
- Expansion
- Pilot Selection 2025





Background



- Industry's innovative use of AI for recruiting and training will soon become the new norm
- Human capital management will only become more important as the complexity of warfighting continues to increase
- The largest challenge to USAF AI recruitment and training implementation is data wrangling



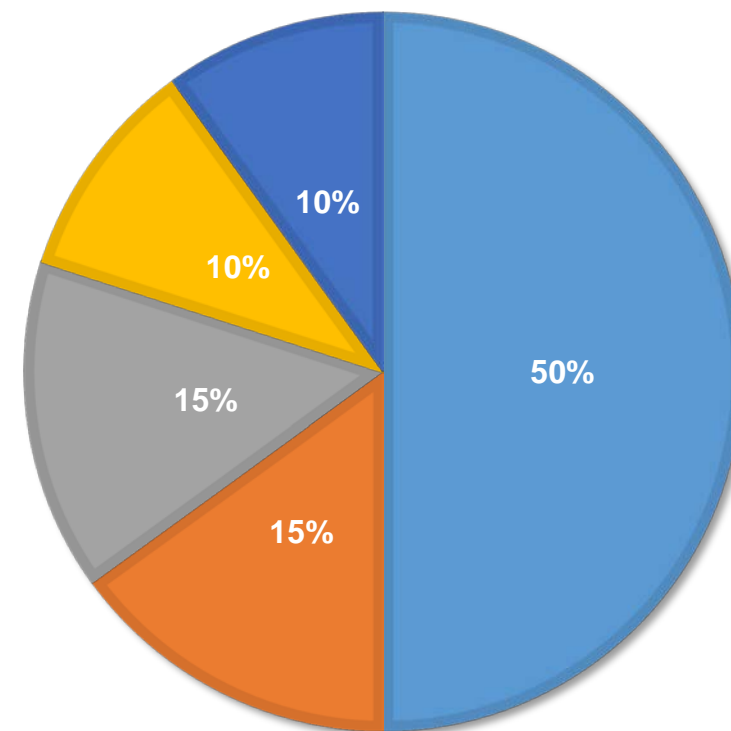
The Pilot Selection Problem



- Traditional pilot selection lacks scientific backing
- Attrition
 - ~ 15% planned attrition rate
 - 200 pilot trainees lost per year
 - \$1M per graduated student
- A new type of candidate might be required for a scaled Pilot Training Next
- Pilot retainability will challenge the USAF for years to come

CURRENT ROTC PILOT SELECTION

■ CC Ranking ■ GPA ■ PCSM ■ PFA ■ Field Training





The Pilot Selection Solution

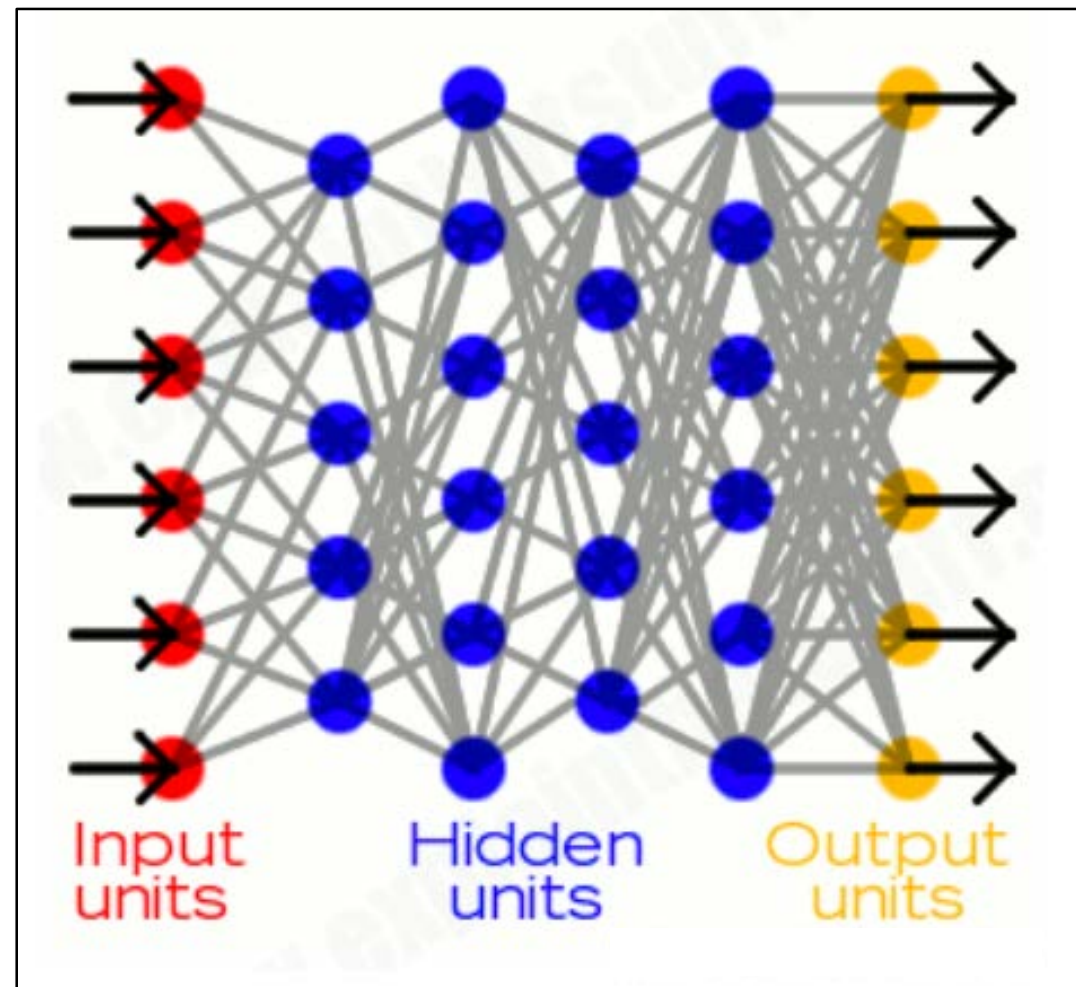
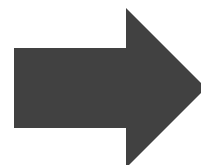


Solution: Creation of ANNie an Artificial Neural Network (ANN), to analyze “big data” with the goal finding & targeting the ideal pilot training candidates within the Academy, ROTC, and OTS.





Technology Overview: Artificial Neural Network (ANN)



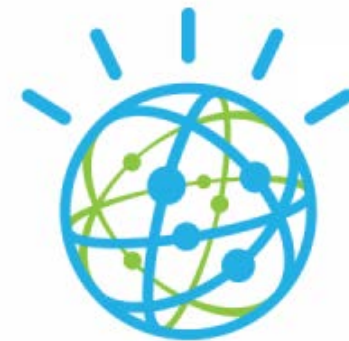


Industry Leaders



ENGAGE

MITRE



IBM Watson



Example: IBM Watson in Action



Lieutenant General
Steven L. Kwast

Personality Portrait

1457 words analyzed: **Weak Analysis**

From interview with Aaron Mehta on
November 10, 2014 (DefenseNews.com)

Summary

You are philosophical: you are open to and intrigued by new ideas and love to explore them. You are adventurous: you are eager to experience new things. And you are mild-tempered: it takes a lot to get you angry.

Your choices are driven by a desire for discovery.

You are relatively unconcerned with both taking pleasure in life and tradition. You prefer activities with a purpose greater than just personal enjoyment. And you care more about making your own path than following what others have done.

How did we get this?

You are likely to_____

- ✓ be sensitive to ownership cost when buying automobiles
- ✓ like historical movies
- ✓ volunteer for social causes

You are unlikely to_____

- ✗ be influenced by social media during product purchases
- ✗ prefer style when buying clothes
- ✗ be influenced by brand name when making product purchases



Concerns

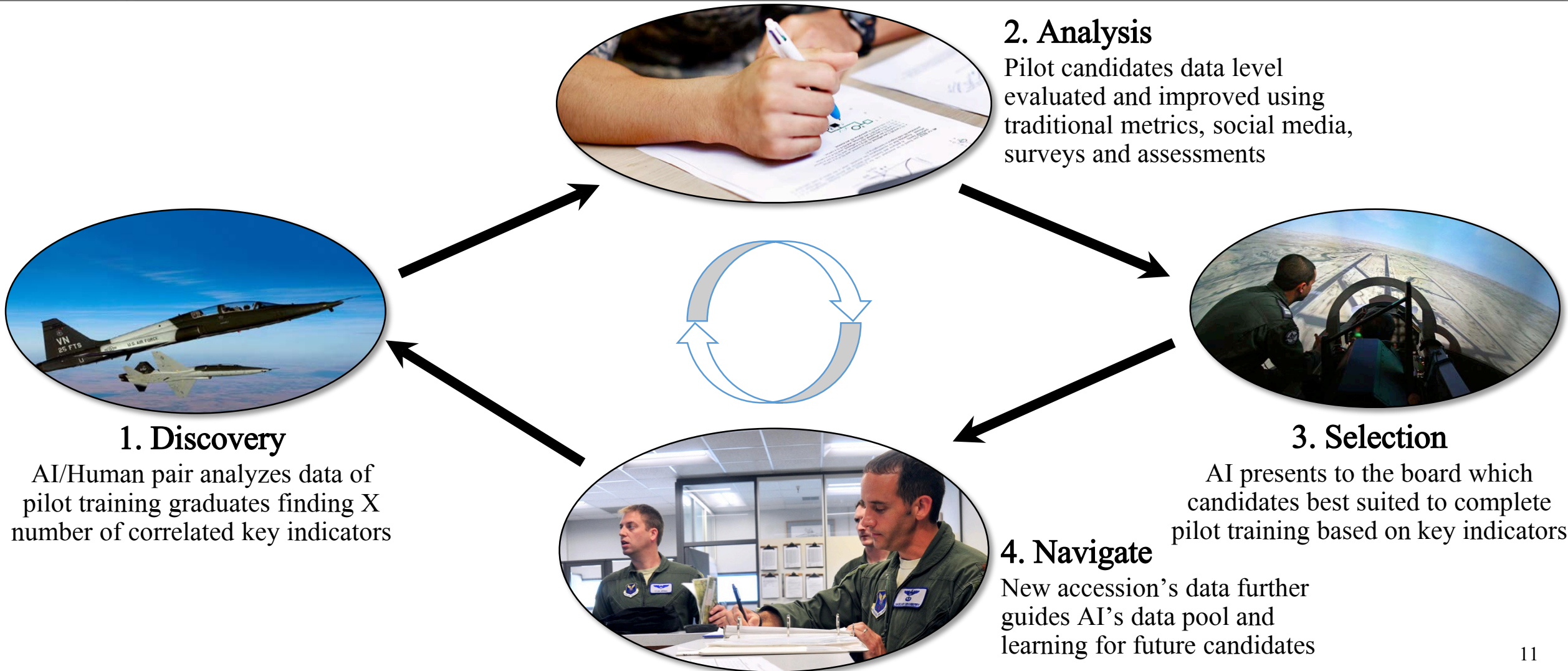


- Security concerns:
 - Data Management
 - Operational Security
- Ethical concerns:
 - Machine Bias
 - Personal Data Collection & Use





Pilot Selection Proof of Concept





ANNie Expansion

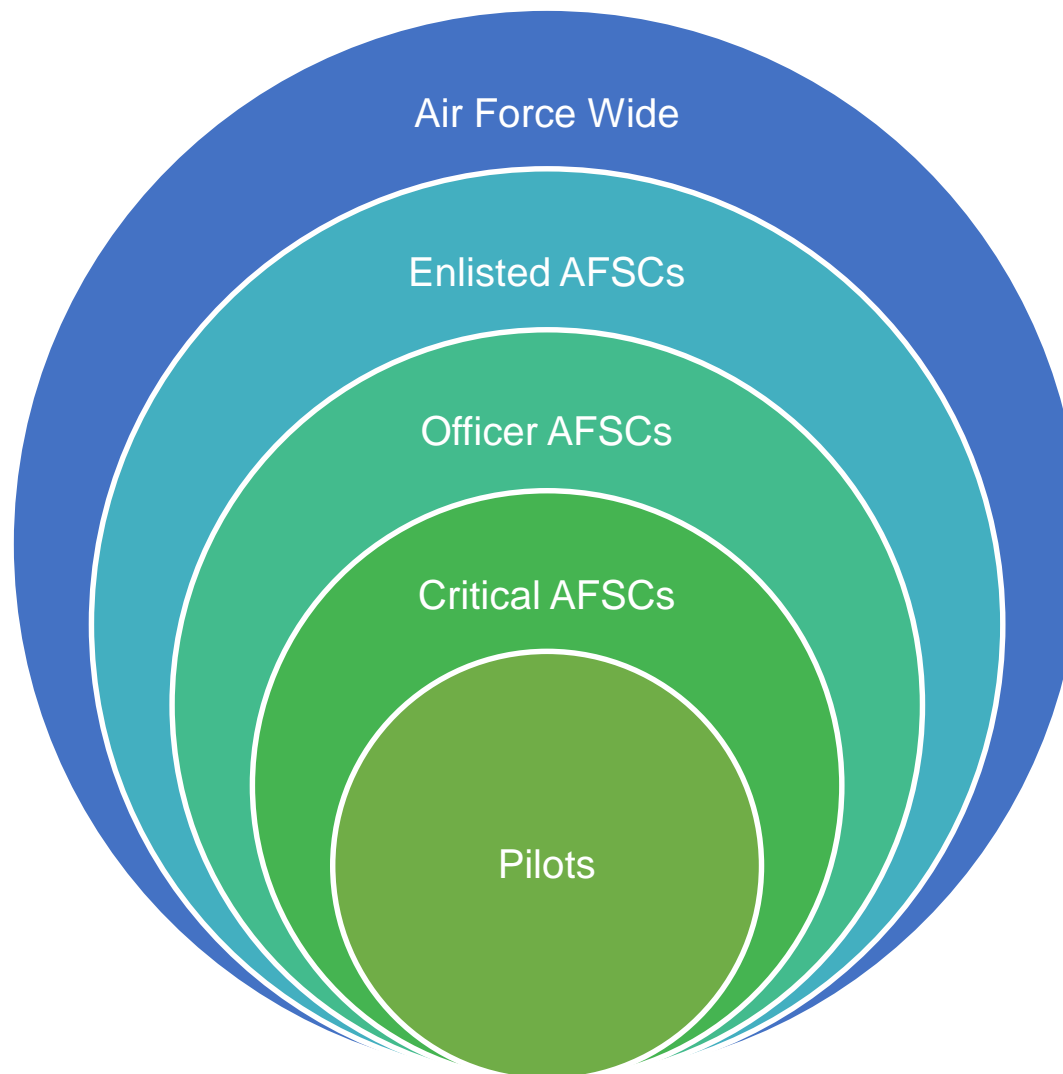


- ANNie points out targeted recruiting opportunities based on discovered pilot aptitude key indicators
- Selects cadets for Pilot Training Next
- Assists FTU bottleneck by identifying those ready for an accelerated syllabus
- Selects based on evolving attributes for 5th/6th Generation Aircraft





Future Talent Management





Pilot Selection 2025





THE AIR UNIVERSITY



QUESTIONS?

Eagles Think Tank Team

SOS Class 18E



Timeline

