

## ME 401/5501 – Unmanned Aircraft Combat Survivability

### HW #1: Due Tuesday, January 24<sup>th</sup>

#### Problem 1:

Download the Unmanned Systems Initial Capabilities Document at the link below. Read through the ICD, with a specific focus on intelligence, surveillance, and reconnaissance (ISR) capability requirements. You need to specifically identify the **mission needs, requirements,** and impacts on the **DOTMLPF-P**.

Based upon the information you have found, look for any existing unmanned aircraft that have been deployed and/or are in development for this particular mission aspect.

[https://www.acqnotes.com/Attachments/Unmanned%20Systems%20ICD%20Draft%20v2-2%20%20\(AROC%20Approved\).docx](https://www.acqnotes.com/Attachments/Unmanned%20Systems%20ICD%20Draft%20v2-2%20%20(AROC%20Approved).docx)

[https://acqnotes.com/acqnote/acquisitions/initial-capabilities-document-icd#:~:text=Definition%3A%20Initial%20Capabilities%20Document%20\(ICD,pose%20an%20unacceptable%20operational%20risk.](https://acqnotes.com/acqnote/acquisitions/initial-capabilities-document-icd#:~:text=Definition%3A%20Initial%20Capabilities%20Document%20(ICD,pose%20an%20unacceptable%20operational%20risk.)

Sounds like Edge works better than Chrome (but on my Mac Chrome works fine).

#### Problem 2:

Assume an unmanned aircraft scenario in which a RQ-21 Blackjack UAS is being used for an ISR mission in Ohioistan where there is an electronic warfare jammer that is only on when something hostile is detected. Create your kill-chain tree diagram (this should be your own, based upon reasonable guess as to the engagement process for this scenario).

Create reasonable assumptions for each probability and calculate the probability of kill for the mission.

#### Problem 3:

Read the quarterly publication by DSIAC, specifically the article (page 17) “Detection and Classification of Small UAS for Threat Neutralization.”

You need to write a short (1 paragraph) synopsis about how UAS are currently detected and classified, and the gaps that might be exploitable (from a UAS manufacturer perspective) to be undetected.