MICHIGAN STATE UNIVERSITY **Project Plan Multi-Video Case Management** The Capstone Experience **Team Technology Services Group** Adam Gnott **Noah Engerer** Matt Wojno Jonathan Little **Yichen Zang** Sam Belcher Department of Computer Science and Engineering Michigan State University Spring 2019



From Students... ...to Professionals

Functional Specifications

- Insurance claims have a lot of video content
 - Time consuming to review multiple videos of one event
- Building upon existing OpenContent Management Suite's (OCMS) architecture
- Two new actions
 - Add videos from a map view
 - Merge multiple videos together

Design Specifications

- Add Video
 - Enter location and time
 - Select videos from a map
- Map View of Folder
 - Shows the location of the videos on a map
- Annotating Videos
 - Give video annotations priority
- Merge Videos
 - Single view of desired videos
 - Display highest priority video larger

Screen Mockup: New Folder Actions

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Screen Mockup: Add Video Action

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Screen Mockup: Map View of Folder

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Screen Mockup: Annotating Videos



Screen Mockup: Merged Video Default



Screen Mockup: Merged Video Priority



Technical Specifications

Add Video Action

 Software Used: OCMS, Google Maps API, OpenContent Web Services, S3 Bucket, DyanmoDB, Apache Solr

Annotating Videos

Software Used: OCMS, OA, OpenContent Web Services, DynamoDB, Apache Solr

Merge Videos Action

 Software Used: OCMS, FFmpeg, OpenContent Web Services, S3 Bucket, DynamoDB, Apache Solr



System Architecture



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System Components

- Software Platforms / Technologies
 - TSG OCMS
 - TSG OpenAnnotate (OA)
 - TSG OpenContent Web Services
 - Amazon DynamoDB
 - Amazon S3 Buckets
 - Apache Solr
 - FFmpeg
 - Google Maps API

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Risks

- MSU Security Video
 - Unsure of the quantity of accessible footage or which specific cameras will be accessible for the team to use
 - Mitigation: Plan meeting with MSU's Chief Information Security Officer; if the dataset is insufficient, create mock security video footage with phone video
- Integrating into TSG's Environment
 - Integrating into TSG's existing architecture could be difficult because of newly added products like DynamoDB and OpenAnnotate Video
 - Mitigation: Constant communication with TSG, continually familiarizing with their codebase, and actively resolving issues with configuration between DynamoDB and OpenContent Web Services
- Linking Video Files to the Map View
 - Unsure how to retrieve the security video footage from the S3 bucket and pass it to an OCMS Folder
 - Mitigation: Tutorials on simple S3 bucket queries and studying similar S3 actions within OCMS
- Video Manipulation
 - Using FFmpeg to correctly handle video priority and video focus within a defined grid
 - Mitigation: Creating prototype using FFmpeg, can currently merge 4 videos into 1 with multiple different layouts

Questions?

