FAA COA Application Process

Request an account to the FAA on-line COA system. DOI accounts go through the Office of Aviation Services.

Before you get into the FAA on-line system gather (or locate on the T: drive) all the information and supporting documents that you will need:

1. Project specific information including mission objective/justification.

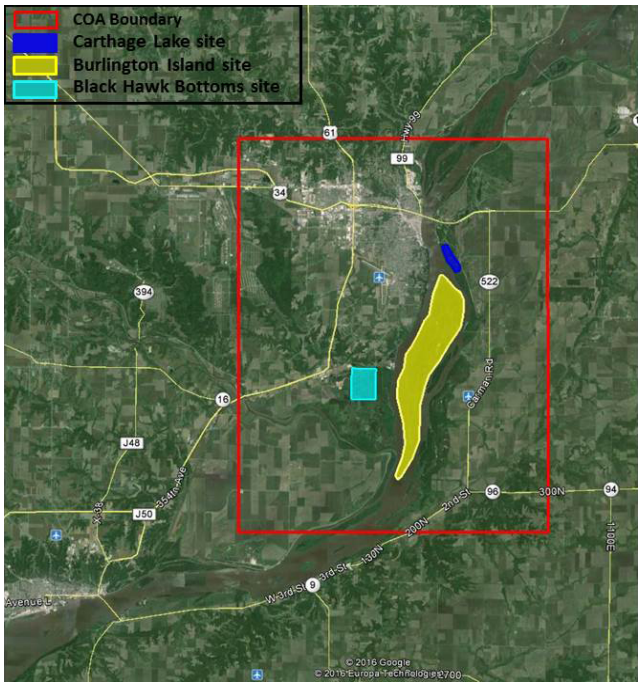
2. Evaluate project location on FAA sectional map to determine project eligibility and airspace.

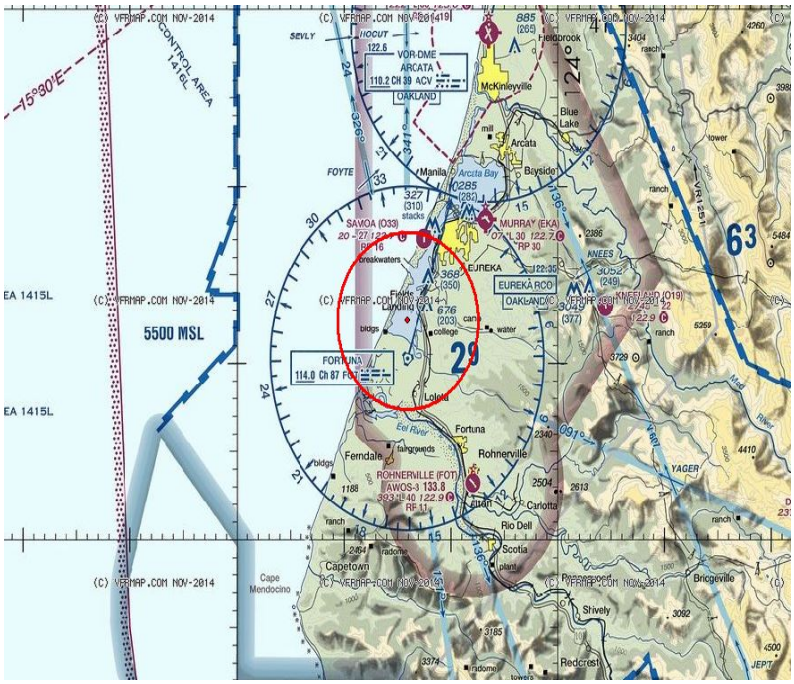
3. Determine COA boundary coordinates in geographic OR project center point and a radius. The COA boundary is generally larger than the actual project area to provide additional buffer of operating space.

4. Determine floor and ceiling AGL that all flights will remain in. Highest elevation in the defined COA boundary is the 'floor', add the AGL (400, 1200 feet, etc.) to the floor and that becomes the COA/project 'ceiling'. I use Global Mapper to create COA boundary and then export the boundary to kmz and bring into google earth to determine AGL.

5. Find nearest airport information: Airport ID, ownership, control tower designation(Y/N), comm frequency, distance/direction from COA/project area. I use AirNav.com to get airport information, including assigned ARTCC.

6. Create project area maps (jpgs) to upload into the COA application. I always upload two, 1) project boundary on the FAA sectional chart slightly zoomed out so the FAA can see the boundary and a good surrounding area, 2) project boundary on imagery at a closer scale.





Red polygon is COA Boundary

Red dot is project center point and red circle is COA radius

7. All UAV and UAS operator specific documents edited as necessary for the project. Template documents will indicate which ones need to be edited for a project. (In order as they get attached to the COA application)

   System Description:
   a. Image of aircraft (jpg)
   b. System description (USGS_Falcon_System_Description.docx)
   c. Control station description (USGS_Falcon_FalconHover_Ground_Control_station.docx)
   d. TSO Components (USGS_Falcon_FalconHover_TSO_Components.doc). TSO (Technical Standard Orders), see http://www.faa.gov/aircraft/air_cert/design_approvals/tso for description. Current USGS aircraft do not use any TSO equipment.

   Performance Characteristics:
   e. Launch and Recovery procedures (USGS_Falcon_Launch_Recovery.doc). This document will potentially be edited per project. See template document comment(s).

   Airworthiness:
   f. Current aircraft airworthiness document.
   g. Current DOI Airworthiness statement (Memorandum-Airworthiness Statement Falcon Facon Hover.pdf)

   Procedures:
   h. Lost Link/Mission Procedures (USGS_Falcon_Lost_Link_Procedures.doc)
   i. Lost Communications Procedures (USGS_Falcon_FalconHover_Lost_Communications.doc) This document will potentially be edited per project. See template document comment(s).
   j. Emergency Procedures (USGS_Falcon_FalconHover_Emergency_Procedures.doc)

   Flight Aircrew Qualifications:
   k. UAS Operator Currency (USGS UAS Operator Currency.docx)
   l. UAS Observers (USGS UAS Observers.docx)
   m. Current DOI FAA Letter of Agreement (DOI FAA LOA.pdf)

Filling out COA on-line Application

The steps outlined in the document are not intended to be all inclusive of the entire COA on-line application, but merely highlights or tips for filling out each section of a COA application. Refer to the FAA COA Users Guide for more detailed information (https://ioeaaa.faa.gov/downloads/COA_User_Guide_V_2015_4_0.pdf).

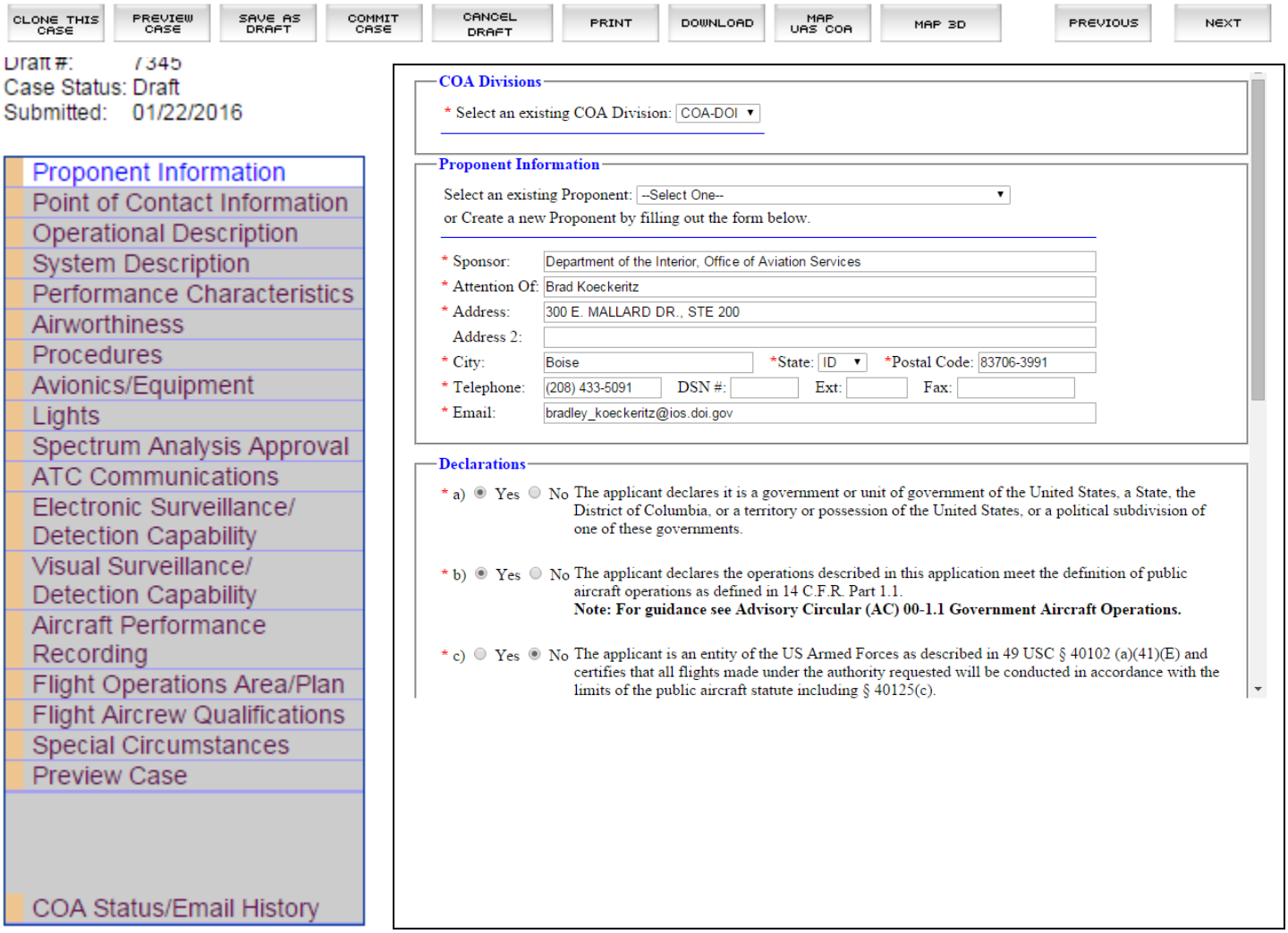
Login to the FAA OE/AAA Systems (https://ioeaaa.faa.gov/oeaaa/Welcome.jsp). Login ID is generally your USGS email address.

A new COA case can be started in one of two ways:

1) Select an existing draft or active COA and 'Clone' it using the 'CLONE THIS CASE' button on the bottom of the page. This will create a new draft COA case for your project. When you clone an existing COA you will be given the option of cloning with or without attachments. If you clone with attachments be sure to delete and replace all attachments that are specific to the COA (project) you are submitting. A cloned COA will contain ALL the same descriptions and options and you must carefully go through each item to be sure and edit as necessary for the project you are doing. It is helpful if you can clone a COA that is using the same aircraft(s) as much of the information in the COA will remain the same, only project specific information will need to be updated.
2) Create a new draft. On the COA Cases->Draft page, select 'ENTER NEW UAS COA CASE'.

Once the new draft COA is created the system will open that case automatically. The panel to the left will contain the new draft number, status, submit date and menu. You can select any item from the menu and the contents for that menu item will display in the panel to the right. Depending on your browser settings and window size, many of the project panel pages will scroll. Be sure to scroll down to get access to all required information for each section.

When editing your COA, save frequently using the 'SAVE AS DRAFT' button on the bottom of the page.



Proponent Information:

- COA Divisions – From the pull-down menu select' COA-DOI'.
- Proponent Information – From the pull-down menu, select 'Department of the Interior, Office of Aviation Services'. Once selected the remaining fields in this block will automatically fill in.
- Declarations – Read and answer all questions. All questions must be answered (yes/no) before you will be able to move to any other section.

SAVE draft

Point of Contact Information:

- Point of contact – From the pull-down menu select the person who will act as the point of contact for the COA Case. Typically this is you! Once selected the remaining fields in this block will automatically fill in. Verify that the information is correct, if not, edit your user profile.

SAVE draft

Operational Description:

- Request Effective Period – The beginning date must be no sooner than 60 calendar days from when you intend to submit the application. The end date, A COA can be active for up to 2 years.
- Operation radio button checks – Select the appropriate Yes/No for each item. This is where you will indicate if the project will be having day, night or both flights. NOTE: If you intend to do night flights and neglect to indicate that here, the FAA does not like to change that once it has been started. It dramatically affects the safety review process and can lead to your COA being released from the system and you might have to start over.
- Program Executive Summary – This is a brief overall project summary.
- Operational Summary – This will include more detailed operational information about the project. Example:

  "Our overall study location for this project is pool 19 of the Mississippi River which extends from Keokuk, IA to Burlington, IA, and encompasses many shallow water areas and maze-like island-lake complexes. We propose three potential test areas within Pool 19 for the UAS: Carthage Lake site, Blackhawk Bottoms Wildlife Management Area or the Burlington Island complex.

  This COA allows the USGS to operate the Falcon Fixed Wing and Falcon Hover in **Class E airspace** over the Mississippi river complex from Keokuk, IA to Burlington, IA. Flights will be launched and returned within the COA airspace. The flights will not exceed **400 Feet AGL** and will maintain line of sight at all times. **Flight patterns will not exceed 2 hours of duration per flight**. Flights will be conducted during daylight hours only.

  A minimum **FAA rated Private pilot will be PIC** for the flight missions due to proximity to the Southeast Iowa Regional Airport (BRL)."

  Look at other DOI COA applications for additional examples.

- Location – This block is not editable by the user. This block will be filled in by the system after the 'Flight Operations Area/Plan' section has been completed and saved. You might have to save several times, or even exit and re-enter the system for this block to fill. Carefully look at the information that the system populates in this block to ensure it is the right region and airport.

SAVE draft

System Description:

- Select Aircraft Type and Model – Leave the pull-down blank and attach description of aircraft system(s).
- Upload Image – upload an image of the aircraft system(s) to be flown. SAVE after attaching image.
- Attach all required comm and control documents for the aircraft(s). (see list above)
- Aircraft Registration – List the USGS aircraft number and FAA N# for all aircraft that will be used under this COA application (i.e. Falcon kit #FF036 = N264UA, Falcon Hover kit #FH006 = N247UA)

SAVE draft

Performance Characteristics:

- Settings for each item in this block will be aircraft specific.

- Launch/Recovery – attach the launch and recovery procedures for aircraft(s).

SAVE draft

Airworthiness:

- Attach current airworthiness document for aircraft(s) (i.e. FH006 USGS 11 5 15.pdf).
- Attach DOI Airworthiness Statement for aircraft being flow under COA (i.e., Memorandum – Airworthiness Statement Falcon Falcon Hover.pdf).

Procedures:

- Attach all Lost Link, Lost Communications and Emergency procedures for aircraft(s) being flow (see list above).

SAVE draft

Avionics/Equipment:

- This section will contain radio check buttons for aircraft specific equipment.

Lights:

- This section contains radio check buttons for aircraft specific lights.

Spectrum Analysis Approval:

- This section contains radio check buttons related to aircraft specific communication frequencies and data link.
- NTIA/FCC Authorization (spectrum approval). Not required if the aircraft operate on public frequencies.

ATC Communications:

- This section contains radio check buttons for aircraft specific two-Way communications capabilities.

Electronic Surveillance/Detection Capability:

- This section contains radio check button for aircraft specific electronic detection capabilities.

Visual Surveillance/Detection Capability:

- This section contains radio check buttons for aircraft specific visual detection capabilities.

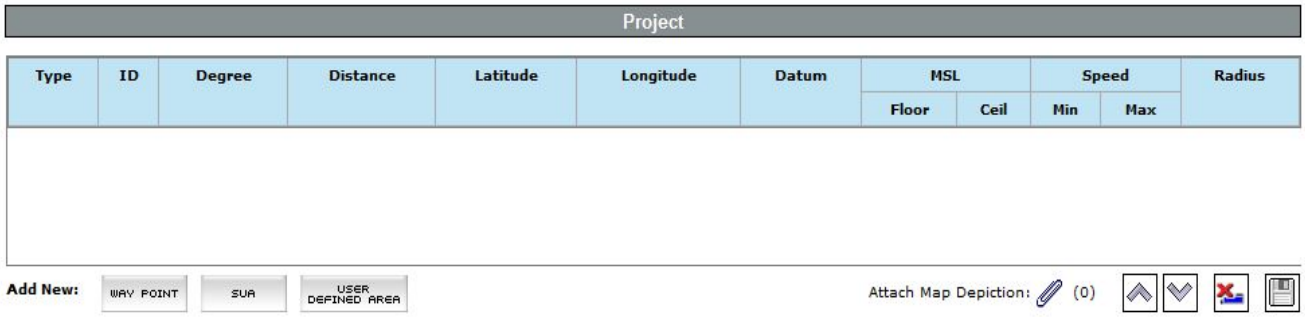
Aircraft Performance Recording:

- This section contains radio check buttons for aircraft specific recording capabilities.

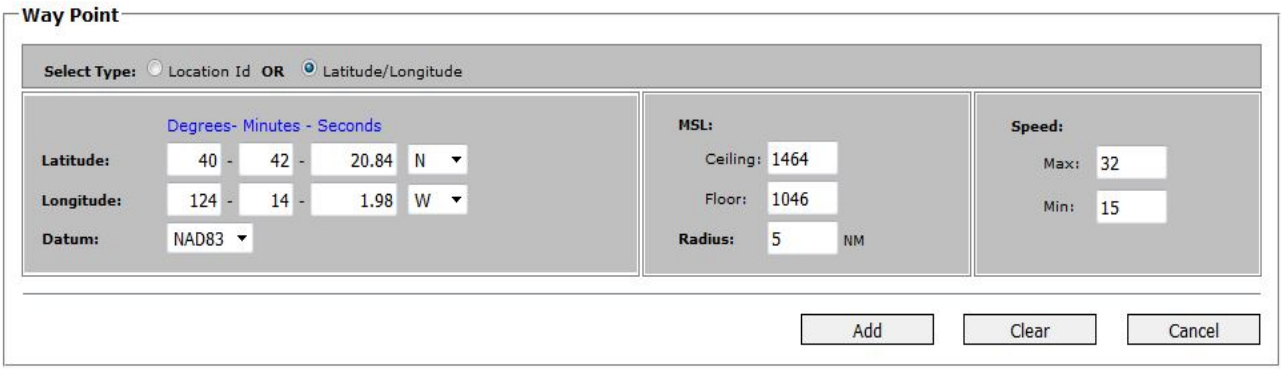
SAVE settings in each section before move to the next one.

Flight Operations Area/Plan:

The flight plan area will be defined by either a way point (center point) with an operational radius or a user defined area (polygon). The project area will be blank until an area is defined and added to the project.



Waypoint:

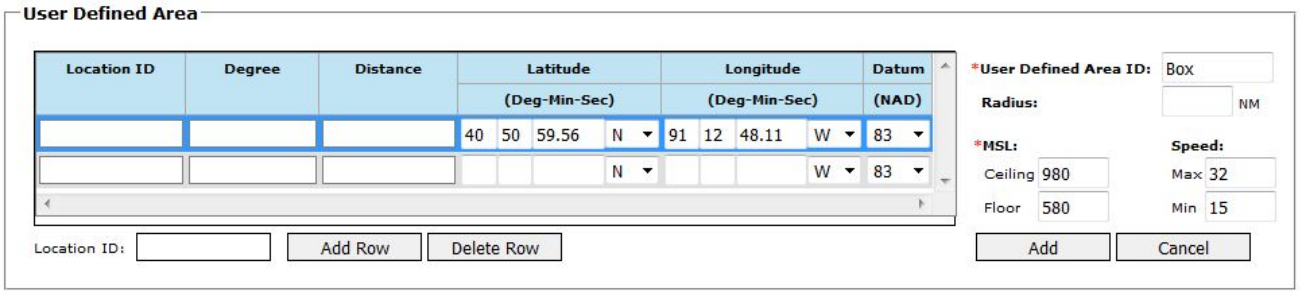


1. Select Way Point and Latitude/Longitude. Enter the COA center point in degrees-minutes-seconds, select the datum.

2. Enter the COA Ceiling/Floor (see notes above). Enter the max/min aircraft speed.

3. Select the Add button to and create the area and add it to the project definition block. SAVE!!

User Defined Area:



1. Select User Defined Area

2. Click on Add Row to create an empty row in the defined area. Enter your first COA boundary coordinate in the empty row. Click on the Add Row button for each additional coordinate. Your coordinates must be a closed

polygon or the system will not allow you to add it. Fill in the COA Ceiling/Floor (see notes above). Enter the max/min aircraft speed.

3. Select the Add button (the one under the Ceiling/Floor block) to add the area to the project. SAVE!!

Once an area has been and properly added, it will appear in the Project Block.

Project

Type	ID	Degree	Distance	Latitude	Longitude	Datum	MSL		Speed		Radius
							Floor	Ceil	Min	Max	
User Defined Area	Box	-	-	-	-	-	580	980	18	50	-

Add New: WAY POINT SUA USER DEFINED AREA Attach Map Depiction: (0)

Map Depiction:

- Click on the paper clip next to the Attach Map Depiction to upload map images of the COA area (see notes above). SAVE!!!!!

After the COA Flight Operations Area has been defined and saved (save a couple of times). The Location block on the Operational Description section should now be set. Review to be sure it looks accurate for the project area. If the location information is not correct for the area, there may be coordinates that are not correct.

Flight Aircrew Qualifications:

- FAA or DOD Equivalent – This section contains radio checks for UAS Pilot and Observer qualifications. Check as appropriate.
  - Under *Unique Trained Pilot, 'Describe For Each' text box for both the Pilots and Observers columns need to contain the follow:
    - Pilots: "DOI (OAS) has provided applicable training in lieu of Private Written."

      If the COA requires a UAS Operator with a current FAA Pilot certification, enter that information in the same box: "The designated pilot onsite that will serve as PIC. PIC will be **Name of Pilot** certificate number ####### or Name of Pilot certificate number #######."

    - Observers: "DOI (OAS) has provided thorough training in lieu of Private Written."

  - Check all other buttons as appropriate.
  - Attach the USGS UAS Operator, Observer and DOI FAA LOA documents (see notes above).

  Medical Certification Class – Check class 2 for pilots and observers
  - *Currency Status text box for both Pilots and Observers, enter:
    "DOI Certified - 90 day currency shall be met by trained operators as per DOI Certified Guidelines."
  - *Duty Time Restrictions text box for both Pilots and Observers, enter:

"DOI manned aircraft restrictions limit operators to a maximum 14 hour duty per day."

Single UAS Control – Select radio button 'Yes' for both Pilot and Observers.

- Description test box, enter: "Only one UAS will be operated at a time under this COA Application."

SAVE draft

Special Circumstances:

This block is where you will enter additional airspace, mitigation, weather and any other considerations and attach documents not covered elsewhere in the COA.

Example:

Approaching Aircraft - Mitigation procedures for separation of possible approaching aircraft are as follows. 1.) Radio communication with approaching aircraft will be attempted. 2.) If contact cannot be made, the pilot shall abort the UAS mission and land via the home waypoint. 3.) If return to the home waypoint is determined to be unsafe, the pilot shall navigate the UAS away from the approaching aircraft, maintaining line of sight and staying within the approved COA boundaries.

Weather Circumstances -The UAS mission will be suspended if wind speed is greater than 15 knots or if visibility is less than 3 mile, or if the ceiling is less than a thousand feet. The UAS must be within line of sight at all times (No more than 0.5 miles from a trained observer(s).)

Review other active and archived DOI COAs for other examples.

Preview Case:

This section will allow you to do a review of the entire application on one screen. The COA system will flag in red any items that need to be addressed.

Completed draft COA is then forwarded to the USGS Aviation Manger for review and approval. After USGS approval, it goes to OAS for review and approval. OAS will 'commit' the COA within the on-line system. When the draft gets committed it is assigned an new COA number and the 60 day review/approval process begins.