

## *Form*

[https://forms.office.com/Pages/DesignPageV2.aspx?subpage=design&token=a47e584964e24017bdc90531df08cf22&id=pM\\_2PxXn20i44Qhnufn7o7zeebfqM3NLq9HPW72fCpFUM0VONEVENFpJSDZGWjREVzFVVEZKMjZISS4u&analysis=true](https://forms.office.com/Pages/DesignPageV2.aspx?subpage=design&token=a47e584964e24017bdc90531df08cf22&id=pM_2PxXn20i44Qhnufn7o7zeebfqM3NLq9HPW72fCpFUM0VONEVENFpJSDZGWjREVzFVVEZKMjZISS4u&analysis=true)

## *[Requirements] Elicitation*

### User Problem 1:

“Improved translation features.”

Translation features could be improved by adding an option to translate chat messages to the users' default language, or to automatically translate all messages in a channel or DM to the users' default language. The translation would be client side and each user in the channel would see different translations. This could be achieved via use of an API such as Google Translate.

### User Problem 2:

“Authentication issues and application issues, particularly when logged on to a Remote Desktop server.”

Authentication issues could possibly be reduced by increasing the duration that user sessions exist for and increasing the number of valid user sessions could allow the user to have valid sessions for multiple devices (such as Remote Desktop). This would prevent the user from needing to login so often.

### User Problem 3:

“Utilizing filters in video calls.”

When turning on a webcam in a video call, there could be a drop-down tab that allows the user to choose from a selection of filters if they wish. These filters apply to their web-cam display for various uses, such as blurring the users background surroundings.

## *[Requirements] Analysis & Specification - Use Cases*

### User Story 1:

As a Beans user, I want to have improved translation features, so that I can communicate better with colleagues whose main language is not English

#### Acceptance Criteria:

- Each message in chat has a button on the right most side of the message
- The button is identified by 3 dots
- Clicking the 3 dots reveals different options or settings for the message such as Translate
- Clicking Translate automatically translates the message into the users' default language

## User Story 2:

As a Beans user, I want to have longer authentication sessions so that I don't have to re-login so often which can save me time and reduce disruptions while working

### Acceptance Criteria:

- **User sessions exist for twice the usual duration to ensure longer authentication**
- **User can log into their account from multiple devices without being logged out on other devices**

## User Story 3:

As a Beans user, I want to have the ability to apply filters in video calls with my colleagues, so that I don't have to worry about the state of my environment or other people in the background.

- **The top bar in video calls has buttons to toggle microphone and toggle webcam.**
- **Next to toggle camera is a button, marked by an arrow, which reveals a drop-down tab of filters**
- **Clicking on a filter reveals a preview of what the filter looks like with the users' webcam display.**
- **Clicking confirm will apply the filter and turn on the webcam for everyone in the video call to see.**

## Use case:

Join a video call and apply a webcam filter, leave the program logged in for the rest of the day then translate a chat message.

## Goal in Context:

The user should be able to successfully apply filters to their webcam in a video call. Then, they should be able to leave their account logged in for an extended period without running into any authentication issues. The final condition is that the user should be able to translate chat messages successfully, and into the correct language.

## Scope:

UNSW Beans is the system being considered black box.

## Preconditions:

The current state of the program does not support chat translations, webcam filters, and has suboptimal handling of authentication which causes many problems and users need to re-login frequently.

## Success End Condition:

The user can successfully apply the selected filter to their webcam, the user doesn't have to re-login by the end of the day and translating chat messages works and translates to the correct language.

### Failed End Condition:

Applying webcam filters is not successful or does not apply the correct filter. Or the user still experiences authentication issues and must re-login throughout the day. Or translating messages doesn't work, incorrectly translates the message or translates to the wrong language.

### Primary Actor:

The UNSW Beans client who is either a Computer Science (or similar) employee or student.

### Trigger:

An employee or student opening UNSW Beans to begin their work for the day.

### Use case List:

Step 1. Open UNSW Beans and join a video call for a meeting.

Step 2. Enable webcam to talk to colleagues and select an appropriate filter.

Step 3. Leave the video call once it is done and proceed with other work for the day.

Step 4. Return to UNSW Beans with the previous authentication session still active.

Step 5. Translate messages from a colleague or friend from another language into a given language.

## *[Requirements] Validation*

### User 1:

"I believe that covers everything as long as it can allow me to communicate with all of my colleagues."

### User 2:

"This sounds alright but I'd also like to be notified if my session is about to expire. With this it would be useful to have an option to extend my session."

### User 3:

"It sounds good, but it would be nice to be able to add custom filters too."

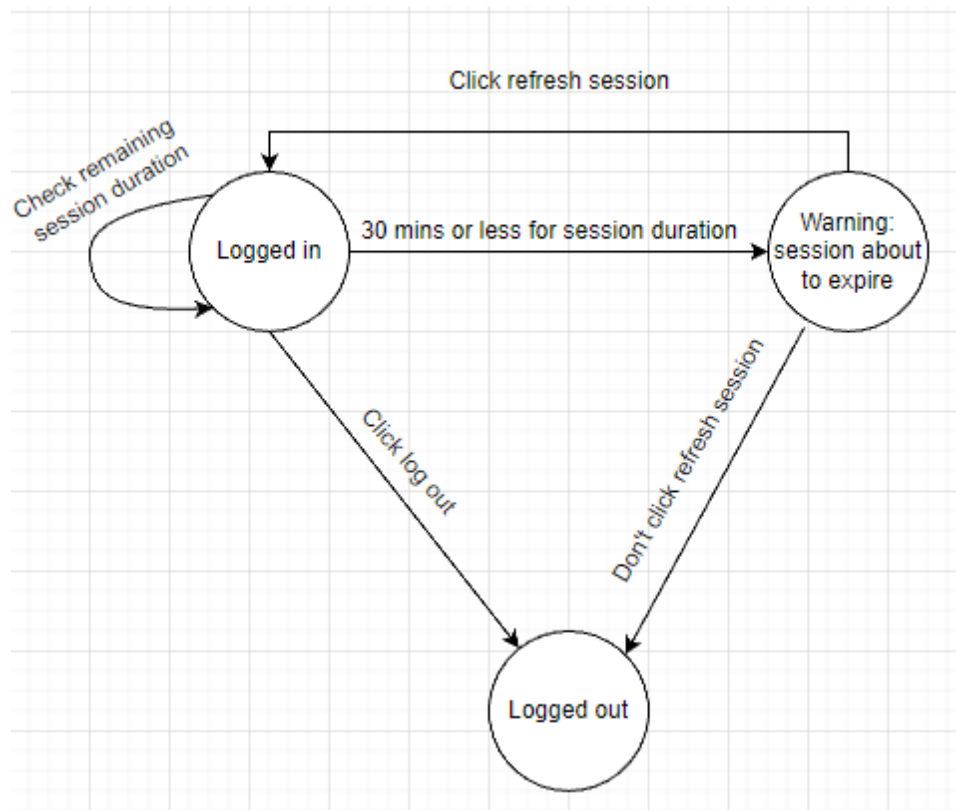
## *[Design] Interface Design*

All endpoints raise a 403 Error for invalid sessions/tokens. Tokens are included in the header for all endpoints and is used to find the corresponding user.

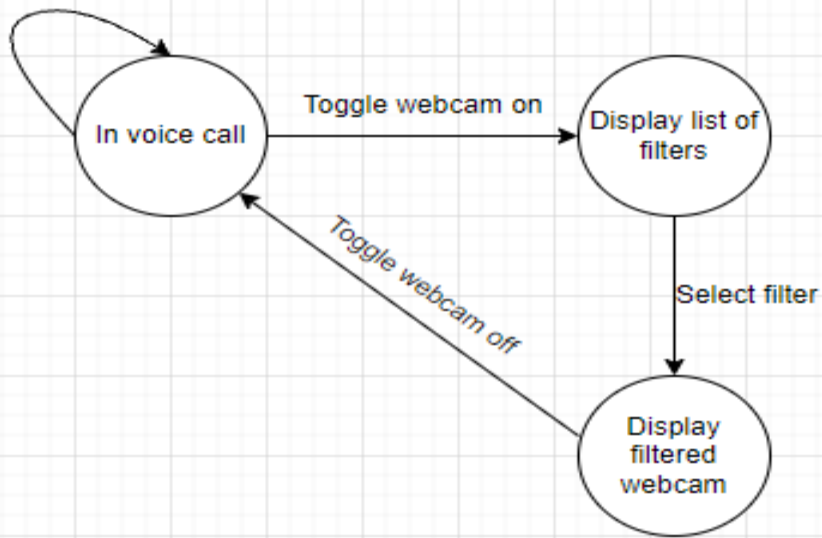
Name & Description	HTTP Method	Data Types	Exceptions
<u>message/detectlanguage/v1</u> Returns boolean regarding whether the message is in the same language as the users' default language	GET	<u>Query Parameters:</u> ( channelId, messageId ) <u>Return type if no error:</u> { isSameLanguage }	400 Error: Invalid channelId Invalid messageId 403 Error: User not member of channel
<u>message/translate/v1</u> Translates the contents of a message into another language	POST	<u>Body Parameters:</u> ( channelId, messageId, language ) <u>Return type if no error:</u> { messageId }	400 Error: Invalid channelId Invalid messageId Invalid language 403 Error: User not member of channel
<u>session/getduration/v1</u> Given a user session, returns how long the session has left before expiry	GET	<u>Query Parameters:</u> ( ) <u>Return type if no error:</u> { timeLeft }	N/A
<u>session/warnuser/v1</u> Warns the user when their session is about to expire in 30 minutes	POST	<u>Body Parameters:</u> ( ) <u>Return type if no error:</u> { }	N/A
<u>session/extend/v1</u> Refreshes the duration that a given session	PUT	<u>Body Parameters:</u> ( ) <u>Return type if no error:</u> { }	N/A
<u>filters/view/v1</u> Returns the available filters to a user currently in a video call	GET	<u>Query Parameters:</u> ( ) <u>Return type if no error:</u> { filterIds }	400 Error: User not in a video call
<u>webcam/toggle/v1</u> Turns a user's webcam on or off depending on its current state	PUT	<u>Body Parameters:</u> ( ) <u>Return type if no error:</u> { webcamStatus }	400 Error: User not in a video call
<u>filter/apply/v1</u> Applies a given filter to the users webcam	PUT	<u>Body Parameters:</u> ( webcamStatus, filterId ) <u>Return type if no error:</u> { }	400 Error: User not in a video call Webcam is not on
<u>filter/upload/v1</u> Upload a new custom filter	POST	<u>Body Parameters:</u> ( filter ) <u>Return type if no error:</u>	400 Error: Filter object is of incorrect type

		{ filterId }	403 Error: User does not have permissions to upload custom filter to channel or dm
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### *[Design] Conceptual Modelling - State Diagrams*



Upload custom filter



Message is already  
correct language

