

Edge Case Handling Summary – Flight Weather Alert System (Version 3)

ID	Edge Case	Scenario	Expected System Behavior	Outcome / Status
EC-01	Flight less than 12 hours away	User submits flight info too close to departure	Skip scheduling. Trigger WeatherCheckLambda immediately	Implemented
EC-02	Duplicate submissions (same phone + flight)	User submits same flight info twice	Allow duplicates for now; future deduplication may use hash/fingerprint or DynamoDB uniqueness check	Allowed, optimization pending
EC-03	Multiple flights for same user	User enters different flight numbers for same phone number	Use phone_number + flight_date as partition/sort key in DynamoDB to allow multiple entries	Implemented
EC-04	Flight number not found	API returns empty or invalid result for given flight number	Raise exception, stop execution, log error, send no SMS	Implemented
EC-05	Missing airport coordinates	AeroDataBox returns no lat/lon for an airport	Fall back to predefined lat/lon dictionary for major U.S. airports	Implemented
EC-06	Unexpected weather conditions (e.g., "haze", "smoke")	OpenWeatherMap returns non-standard or new condition strings	Interpret as "average conditions" with a neutral fallback message	Implemented
EC-07	API call latency or rate limiting	Flight or weather APIs respond slowly or fail intermittently	Catch errors, use fallback response, log issue in CloudWatch	Implemented
EC-08	requests library not found in Lambda	Import error when using third-party Python libraries	Lambda is packaged locally with requests using pip, zipped, and deployed manually	Implemented
EC-09	Lambda timeout during execution	APIs or SNS take too long	Increased timeout limit to 15 seconds in AWS Lambda configuration	Implemented

EC-10	EventBridge can't invoke Lambda	Scheduler permission failure (trust policy misconfiguration)	IAM role manually updated to include scheduler.amazonaws.com as trusted principal	Implemented
EC-11	SNS message not delivered	User phone number is not verified due to AWS SNS sandbox restrictions	Message only sent to verified numbers; SNS publish success still logged in CloudWatch	Implemented (pending prod SMS)
EC-12	CORS error on frontend	Browser blocks request to API Gateway from web form	Configured API Gateway CORS headers to allow Content-Type, POST, and origin https://skytruths.com	Implemented
EC-13	Unexpected JSON structure from APIs	External API changes its response schema	Wrapped all API accesses in get() or try/except, added fallback values ('Unknown', None)	Implemented
EC-14	Forecast not significantly changed	Weather remains consistent from first check to next	Send comfort message only, avoid sending redundant "no change" updates	Planned for future version
EC-15	SMS fails silently	SNS doesn't throw an error, but user never receives the message	Full logging to CloudWatch; message ID printed in logs for post-facto analysis	Implemented
EC-16	Developer needs insight into logic execution	Verify values fetched from APIs and message sent	print() statements for phone, flight, weather data, message summary in CloudWatch	Implemented