**Purpose/Problem Statement:** In recent years, the Marine Stratus Forecast System (MSFS) observational and numerical model components have become degraded. Newer technologies and capabilities necessitate an analysis of current traffic flow management (TFM) requirements and, subsequently, a redefined needs statement to help determine what kind of system/tool is optimal for the unique TFM and weather demands (low/marine stratus and fog, especially during May to October) at San Francisco International Airport (SFO).

**Questions for SFO Needs Analysis:**

# Area: Oakland ARTCC TMU / ATCSCC / NATCA

Current Operations:

* 1. Have we adequately described the problem/need?
	2. Who are the key stakeholders or players in determining C&V forecasts for SFO?
	3. Who are the key stakeholders or players in determining flow rates/TMIs?
	4. When are the key decision time periods for determining flow rates for the day?
		1. How much lead time is needed for planning purposes (i.e., how far in advance do you need the forecast for review)?
		2. What is the optimal forecast time needed for planning purposes (i.e., forecast look ahead time)?
		3. How often are flow rates adjusted?
			1. Who and what information is used to make these adjustments?
	5. What types of weather information (e.g., observations, forecasts, webcams) are used to determine flow rates?
		1. Is there a priority or ranking (internal or documented) of the weather tools/systems used?
	6. What sources do you use for weather to determine flow rates? (e.g. CWSU, web, internal FAA systems)
		1. Is there a priority or ranking (internal or documented) of the weather tools/systems used?
	7. How do you disseminate critical weather information to outside stakeholders?
		1. Who disseminates the information?
		2. How is the information disseminated (e.g., internet, voice)?
			1. What is the current format?
	8. What features/information of MSFS do you find most beneficial in determining flow rates?
	9. What dislikes/issues/concerns do you have with using MSFS (both currently and when MSFS was working as designed)?

Future Operations:

Major advances in technology (model guidance, satellite, observing platforms, etc.) may be able to be included in a new system tuned to SFO

1.    What weather information is most desired/needed to determine flow rates/TMIs?

2.    Do additional stakeholders need to be involved to more accurately forecast C&V and determine TMIs?

3.    Do you believe developing a new C&V forecast tool/system will fulfill the need?

4.    How would you describe a successful C&V forecast system/tool for determining optimal flow rates?

5.    What output(s) would you like to see in a new C&V forecast (e.g., probability of clearing at specific hours, time approach will clear by, confidence level of forecast, text discussion, forecast reliability, TFM recommendations (TMI, GDP), other)?

* + 1. What type of information would you like to receive with a C&V forecast (e.g., current observations such as ASOS, satellite, SODAR; other forecasts such as SFO TAF; any other information)?

6.    How far ahead do you need weather forecasts to determine TMI decisions?

7.    How often would you like to receive updated C&V forecasts?

8.    How would you like to receive C&V forecasts/information (e.g., via internet, App, other, internal FAA systems)? What formats are preferred (text, graphics)?

9.    Are there any other items we should be aware of/consider when developing a new C&V forecast system/tool?

                        1. What are the primary drivers for these other items?

10.  Is there an existing capability/tool that could be used or modified to address the unique TFM and weather demands of SFO?