Visual Schema for JSON files submitted to the Flare Scoreboard

NOTE: naming convention for files submitted:
ModelShortName.PredictionWindowStartTime.IssueTime.json

JSON key	Type	Boundaries	Description
forecast_submission		required	
model		required	Model information
short_name	string	required	Short name (e.g. acronym) of model to appear on scoreboard. Consider including version number with acronym, if distinction needed. 16 character limit.
spase_id	string	required	Link to URL of full model description metadata in CCMC metadata registry in SPASE format (contact CCMC to register your model).
issue_time	datetime*	required	Forecast issue time (e.g. model run is complete and forecast file is created)
mode	string	required	allowed values: forecast, historical, nowcast, simulated_realtime_forecast
inputs		> 1 allowed, optional	Provide if key model inputs are not represented in the triggers field
magnetogram		> 1 allowed, optional	Provide if a magnetogram was used to produce your forecast
observatory	string	required, if magnetogram used	Name of observatory/spacecraft data are from
instrument	string	required, if magnetogram used	Name of instrument data are from
products		optional	
product	string	> 1 allowed, optional	Name of data product used
last_data_time	datetime*	required, if products used, > 1 allowed	Last time data timestamp available at the time of forecast
full_disk_forecasts	array	>= 1 allowed, optional	>1 allowed such that forecasts for mulitple prediction windows can be submitted together
prediction_window		required	all forecast values provided are relevant only in this prediction window
start_time	datetime*	required	start of forecast prediction window
end_time	datetime*	required	end of forecast prediction window
flare_probabilities	array	>= 1 allowed, at least 1 required	Include all classes that the model can forecast, with no duplicates for a single prediciton window
class	string	required	C, C+, M, M+, X
probability	float	required	(range 0 to 1)
uncertainty	float	optional	(range 0 to 1)
uncertainty_low	float	optional	(range 0 to 1)
uncertainty_high	float	optional	(range 0 to 1)
cme_probabilities		>= 1 allowed, optional	CME forecast for each active region
based_on	string	required, if cme_probabilities used	What is your CME probability forecast based on? Options: "cme", "eruptive flare". Use "cme" if your probability forecast is for a CME erupting with or without a flare. Use "eruptive flare" if your probability forecast is for a CME erupting based on a flare forecast only
probability	float	required, if cme_probabilities used	probability that a CME will erupt from this region. (range 0 to 1)
uncertainty	float	optional	(range 0 to 1)
uncertainty_low	float	optional	(range 0 to 1)
uncertainty_high	float	optional	(range 0 to 1)
speed_min	float	optional	forecast min CME speed in km/s (if a CME were to erupt from this region)
speed_max	float	optional	forecast CME max speed in km/s (if a CME were to erupt from this region)
sep_probabilities		optional, >= 1 allowed	Full disk SEP forecast. Each sep_probabilities array item is for one energy channel. The assumption is that this is a proton forecast at Earth location.
energy_channel		required, if sep_probabilities used	Energy channel for the SEP probability forecast
min	float	required, if sep_probabilities used	min of energy channel range in MeV
max	float	required, if sep_probabilities used	max of energy channel range in MeV. -1 represents an unbounded integral channel
probability	float	required, if sep_probabilities used	probability that the SEP intensity in the specified energy channel will exceed the specified threshold (range 0 to 1)
uncertainty	float	optional	(range 0 to 1)
uncertainty_low	float	optional	(range 0 to 1)
uncertainty_high	float	optional	(range 0 to 1)
threshold	float	required, if sep_probabilities used	the SEP probability forecast is for the particle intensity to exceed this threshold value (e.g. 10 pfu)
threshold_units	string**	required, if sep_probabilities used	units of threshold
region_forecasts	array	optional, >= 1 allowed	>=1 allowed such that forecasts for mulitple prediction windows can be submitted together. Each region_forecasts array item is 1 region forecast per active region/prediction window
prediction_window		required	all forecast values provided are relevant only in this prediction window
start_time	datetime*	required	start of forecast prediction window
end_time	datetime*	required	end of forecast prediction window
region_ids	array	> 1 allowed, at least 1 required	all ids in this array refer to the same active region
type	string	required	NOAA, SHARP, HARP, Catania, model_region, other
number	integer	required	use full region ID (ie 5 digits for NOAA)
time	datetime*	maybe required	required if using "other" as type
longitude	integer	maybe required	required if using "other" as type (range from -180 to +180)
latitude	integer	maybe required	required if using "other" as type (range from -90 to +90)
flare_probabilities	array	> 1 allowed, at least 1 required	Include all classes that the model can forecast, with no duplicates for a single prediciton window
class	string	required	C, C+, M, M+, X
probability	float	required	(range 0 to 1)
uncertainty	float	optional	(range 0 to 1)
uncertainty_low	float	optional	(range 0 to 1)
uncertainty_high	float	optional	(range 0 to 1)
cme_probabilities		>= 1 allowed, optional	CME forecast for each active region
based_on	string	required, if cme_probabilities used	What is your CME probability forecast based on? Options: "cme", "eruptive flare". Use "cme" if your probability forecast is for a CME erupting with or without a flare. Use "eruptive flare" if your probability forecast is for a CME erupting based on a flare forecast only (eruptive flare).
probability	float	required, if cme_probabilities used	probability that a CME will erupt from this region. (range 0 to 1)
uncertainty	float	optional	(range 0 to 1)
uncertainty_low	float	optional	(range 0 to 1)
uncertainty_high	float	optional	(range 0 to 1)
speed_min	float	optional	forecast min CME speed in km/s (if a CME were to erupt from this region)
speed_max	float	optional	forecast CME max speed in km/s (if a CME were to erupt from this region)
sep_probabilities		> 1 allowed, optional	SEP forecast for each active region. Each sep_probabilities array item is for one energy channel. Assuming this is a proton forecast at Earth location.
energy_channel		required, if sep_probabilities used	Energy channel for the SEP probability forecast
min	float	required, if sep_probabilities used	min of energy channel range in MeV
max	float	required, if sep_probabilities used	max of energy channel range in MeV. -1 represented an unbounded integral channel
probability	float	required, if sep_probabilities used	probability that the SEP intensity in the specified energy channel will exceed the specified threshold, for this region. (range 0 to 1)
uncertainty	float	optional	(range 0 to 1)
uncertainty_low	float	optional	(range 0 to 1)
uncertainty_high	float	optional	(range 0 to 1)
threshold	float	required, if sep_probabilities used	the SEP probability forecast is for the particle intensity to exceed this threshold value
threshold_units	string**	required, if sep_probabilities used	units of threshold

**datetime expected in UTC and in the format(s):"YYYY-MM-DDTHH:MM:SSZ"*

**units string format: Example: "MeV^-1*s^-1*cm^-2*sr^-1". Another example: "pfu" where 1 pfu = 1 s^-1*cm^-2*sr^-1

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