SAF User Documentation : Common Terms Definition Viewpoint

Domain	Aspect	Maturity
Common	Taxonomy & Structure	 proposed

Example

#	△ Term	Synonyms	Description	Active Hyperlink
1	Animal Behavior	ABC	Animal Behavior Classification	
2	Combustion		A combustion is a fast and exothermic oxidative reaction that releases heat, requiring an oxidizing agent to burn the fuel. In the case of a forest fire this oxidizing agent is the air in the atmosphere with the vegetation being the fuel.	
3	Distress Signal		A distress signal, also known as a distress call, is an internationally recognized means for obtaining help. Distress signals are communicated by transmitting radio signals, displaying a visually observable item or illumination, or making a sound audible from a distance.	
4	Empirical Model	Empirical Models	Fully empirical models rely on statistical correlation between variables known to influence fire spread, such as wind speed, slope, and fuel moisture content, with field observations of rates of spread. Empirical methods are incorporated into the national operational models of fire spread used in Canada, the Canadian Fire Behavior Prediction Model (Forestry Canada Fire Danger Group, 1992), and in Australia, the McArthur grassland ...	
5	Environment Interface	EIF	Environment Interface	
6	Fire Detection		It is essential to set up an effective surveillance network which allows to reduce the time between the ignition and the detection of the forest fire. It focuses particularly on all activities which can cause a fire. The surveillance is based on the combination of various observation and detection means, either mobile or fixed, terrestrial or aerial. The combination of the surveillance and the first intervention, performed by the same team having terrestrial ...	
7	Fire Information	FIMS	Fire Information Management System	
8	Forest Fire	FF	A forest fire involves combustion of organic material (fuel) that releases a large quantity of energy. The combustion energy is transferred from the burning fuel to unburned fuels ahead of the fire front. This phenomenon ensures the fire spread. The fire start depends on the flammability of the vegetation. The fire spread depends on a number of variables, including fuel characteristics (size, moisture content and arrangement), weather and topography.	
9	Forest Fire Detection	FFDS	Forest Fire Detection System	
10	Forest Fire Information	FFIM	Forest Fire Information Management	
11	Forest Fire Information Management Control	FFIMC2	Forest Fire Information Management Control Center	
12	Forest Sensor Ecosystem	FSE	Forest Sensor Ecosystem	
13	Geolocation		Geolocation is the identification or estimation of the real-world geographic location of an object, such as a radar source, mobile phone, or Internet-connected computer terminal. In its simplest form, geolocation involves the generation of a set of geographic coordinates and is closely related to the use of positioning systems, but its usefulness is enhanced by the use of these coordinates to determine a meaningful location, such as a street address.	
14	Human Interface	HIF	Human Interface	
15	Physical Model	Physical Models	Physical models of fire spread estimate the flux between burning and unburned fuel in order to determine the rate of fire spread. The prevailing assumption of this approach is that all heat transfer involved in the combustion reaction satisfies the conservation of energy. The conservation of energy is expressed as an equation in the figure to the right. This equation states that, under steady-state conditions, the rate of fire spread, R, in m/s, is equal to the ratio ...	
16	Remote Sensing		Remote sensing is the acquisition of information about an object or phenomenon without making physical contact with the object, in contrast to in situ or on-site observation.	https://en.wikipedia.org/wiki/Remo...
17	Smoke and Fire Detection	SFDS	Smoke and Fire Detection Software	
18	System Interface	SIF	System Interface	
19	Wireless Sensor Network	WSN	Wireless sensor networks refer to networks of spatially dispersed and dedicated sensors that monitor and record the physical conditions of the environment and forward the collected data to a central location. WSNs can measure environmental conditions such as temperature, sound, pollution levels, humidity and wind.	

#	Term	Synonyms	Description	Active Hyperlink
1	byte	octet	8-bit binary integer in the range [0, 255] where the most significant bit is bit 7 and the least significant bit is bit 0	
2	byte order		ordering of bytes for multi-byte data values	
3	chromaticity		pair of x and y values in the xyY space specified at [COLORIMETRY] Note: Chromaticity is a measure of the quality of a color regardless of its luminance.	
4	composite (verb)		form an image by merging a foreground image and a background image, using transparency information to determine where and to what extent the background should be visible Note The foreground image is said to be composited against the background.	
5	datastream		sequence of bytes	
6	deflate		member of the LZ77 family of compression methods	https://www.rfc-editor.org/rfc/rfc1951
7	frame		For static PNG, the static image is considered to be the first (and only) frame. For animated PNG, each image that forms part of the frame-based animation sequence is a frame. Thus, for animated PNG, when the static image is not the first frame, the static image is not considered to be a frame.	
8	frame buffer		the final digital storage area for the image shown by most types of computer display. Note Software causes an image to appear on screen by loading the image into the frame buffer.	
9	fully transparent black		pixel where the red, green, blue and alpha components are all equal to zero	
10	gamma value		value of the exponent of a gamma transfer function	
11	gamma		power-law transfer function	
12	high dynamic range	HDR	an image format capable of storing images with a relatively high dynamic range similar to or in excess of the human visual system's instantaneous dynamic range (~12-14 stops). PNG allows the use of two HDR formats, HLG and PQ.	
13	hybrid log-gamma	HLG	transfer function defined in [ITU-R-BT.2100] Table 5. (A relative scene-referred system)	https://www.itu.int/rec/R-REC-BT.2100
14	full-range image		image where reference black and white correspond, respectively, to sample values 0 and 2^(bit depth) - 1	
15	image data		1-dimensional array of scanlines within an image	
16	interlaced PNG image		sequence of reduced images generated from the PNG image by pass extraction	
17	lossless		method of data compression that permits reconstruction of the original data exactly, bit-for-bit	
18	LZ77		data compression algorithm described in [Ziv-Lempel].	https://ieeexplore.ieee.org/document..
19	luminance		perceived brightness of a colour Note Luminance and chromaticity together fully define a perceived colour. A formal definition of luminance is found at [COLORIMETRY].	
20	narrow-range image		Image where reference black and white do not correspond, respectively, to sample values 0 and 2^(bit depth)- 1	
21	network byte order		byte order in which the most significant byte comes first, then the less significant bytes in descending order of significance (MSB LSB for two-byte integers, MSB B2 B1 LSB for four-byte integers)	
22	perceptual quantiser	PQ	transfer function defined in ITU-R BT.2100 Table 4. (An absolute display-referred system) Note Only RGB may be used in PNG, ICtCp is NOT supported.	
23	PNG decoder		process or device that reconstructs the reference image from a PNG datastream and generates a corresponding delivered image	
24	PNG editor		process or device that creates a modification of an existing PNG datastream, preserving unmodified ancillary information wherever possible, and obeying the chunk ordering rules, even for unknown chunk types	
25	PNG encoder		process or device which constructs a reference image from a source image, and generates a PNG datastream representing the reference image	
26	PNG file		PNG datastream stored as a file	
27	PNG four-byte unsigned inte		a four-byte unsigned integer limited to the range 0 to 2^31-1. Note The restriction is imposed in order to accommodate languages that have difficulty with unsigned four-byte values.	
28	sample		intersection of a channel and a pixel in an image	
29	sample depth		number of bits used to represent a sample value	
30	scanline		row of pixels within an image or interlaced PNG image.	
31	standard dynamic range	SDR	an image format capable of storing images with a relatively low dynamic range of 5-8 stops. Examples include sRGB, Display P3, ITU-R BT.709 Note Standard dynamic range is independent of the primaries and hence, gamut. Wide color gamut SDR formats are supported by PNG.	
32	stop		a change in scene light luminance of a factor of 2.	
33	transfer function		function relating image luminance with image samples	
34	white point		chromaticity of a computer display's nominal white value.	
35	Cyclic Redundancy Code	CRC	type of check value designed to detect most transmission errors. Note A decoder calculates the CRC for the received data and checks by comparing it to the CRC calculated by the encoder and appended to the data. A mismatch indicates that the data or the CRC were corrupted in transit	
36	zlib		deflate-style compression method. SOURCE: [rfc1950] Note Also refers to the name of a library containing a sample implementation of this method	https://www.rfc-editor.org/rfc/rfc1950
37	Cathode Ray Tube	CRT	vacuum tube containing one or more electron guns, which emit electron beams that are manipulated to display images on a phosphorescent screen	
38	Least Significant Byte	LSB	Least significant byte of a multi-byte value	
39	Most Significant Byte	MSB	Most significant byte of a multi-byte value	

Purpose

The Terms Definition Viewpoint supports the definition of applicable terms ... [tbd] ...

Applicability

The Standards Definition Viewpoint supports the ....[tbd] activity part of the... [tbd]... activities of the INCOSE SYSTEMS ENGINEERING HANDBOOK 2023 [§ tbd].

Presentation

A table format listing terms ...[tbd].

A table format listing abbreviations and relationship to standards if applicable... [tbd].

Stakeholder

- Hardware Developer
- Mechanic Developer
- Software Developer

Concern

- What are the sources (e.g. a standard) of terms?
- Which terms and abbreviations are applicable to the system of interest or its system elements and their interfaces and interactions?

Profile Model Reference

The following Stereotypes / Model Elements are used in the Viewpoint:

- SAF_Term contained in SAF_Standard
- SAF_SCV02d_View
- SAF_Standard
- SAF_Term

Input from other Viewpoints

Required Viewpoints

none

Recommended Viewpoints

- Common Standards Definition Viewpoint