STIX Extensions on Marking-definition Objects

The marking-definition object has a unique characteristic over other STIX Objects because it is the only one that can convey any marking definition created by a producer. Its extension point is based on the **definition** and **definition\_type** properties.

The following is how the specification currently defines an extension data marking definition.

**Option 1 (example from the spec):**

{

  "id": "extension-definition--9ef47f81-1443-4632-8497-8b2878f8ac21",

  "type": "extension-definition",

  "spec\_version": "2.1",

  "name": "Extension Foo 3",

  "description": "This schema adds properties to the marking definition object",

  "created": "2014-02-20T09:16:08.989000Z",  
  "modified": "2014-02-20T09:16:08.989000Z",  
  "created\_by\_ref": "identity--11b76a96-5d2b-45e0-8a5a-f6994f370731",

  "schema": "https://www.example.com/schema-markingfoo-1/v1/",

  "version": "1.2.1",

  "extension\_types": [ "property-extension" ]

},

{

  "type": "marking-definition",

  "spec\_version": "2.1",

  "id": "marking-definition--34098fce-860f-48ae-8e50-ebd3cc5e41da",

  "created": "2016-08-01T00:00:00.000Z",

  "extensions": {

    "extension-definition--9ef47f81-1443-4632-8497-8b2878f8ac21" : {

      "extension\_type": "property\_extension",

      "additional\_marking\_prop" : "if this data is leaked then the world will end",

      "required\_data\_storage\_hash" : "sha1024"

    }

  }

}

Additionally, as part of this option, the **definition** and **definition\_type** properties of a marking-definition are optional (and depreciated).

If we stick with this option, there is a need to add the following text to prevent the creation of an “empty” marking definition object.

“If the **extensions** property is not present, **definition** and **definition\_type** properties **MUST** be present”

BTW, TLP and statement marking definitions are inconsistent with this option. However, this option is consistent with other extension types.

**Option 2:** Use the **definition** and **definition\_type** properties as the only method for defining new marking definitions, which is based on a new extension type.

* Keep **definition** and **definition\_type** propertiesas required.
* Disallow top-level or nested extensions for marking definitions.
* In order to extend, the schema would use those two properties, as it has before section 7.3 was written.
* The reference to the supporting schema (extension-definition) would appear in the **extensions** property.
* Use the extension\_type “new-marking”

Example:

{

  "id": "extension-definition--9ef47f81-1443-4632-8497-8b2878f8ac21",

  "type": "extension-definition",

  "spec\_version": "2.1",

  "name": "New Data Marking Definition",

  "description": "This schema creates a new data marking definition called my-favorite-marking",

  "created": "2014-02-20T09:16:08.989000Z",  
  "modified": "2014-02-20T09:16:08.989000Z",  
  "created\_by\_ref": "identity--11b76a96-5d2b-45e0-8a5a-f6994f370731",

  "schema": "https://www.example.com/schema-my-favorite-marking/v1/",

  "version": "1.2.1",

  "extension\_types": [ "new-marking" ]

},

{

"type": "marking-definition",

"spec\_version": "2.1",

"id": "marking-definition--34098fce-860f-48ae-8e50-ebd3cc5e41da",

"created": "2016-08-01T00:00:00.000Z",

"definition\_type": "my-favorite-marking",

"definition": {

"additional\_marking\_prop": "if this data is leaked then the world will end",

"required\_data\_storage\_hash": "sha1024"

},

"extensions": {

"extension-definition--9ef47f81-1443-4632-8497-8b2878f8ac21": {

"extension\_type": new\_marking

}

}

}

Schema at https://www.example.com/schema-my-favorite-marking/v1/":

{

{

"properties": {

"definition\_type": {

"type": "string",

"description": "The definition\_type property identifies the type of Marking Definition.",

"pattern": "^my-favorite-marking$"

},

"definition": {

"$ref": "#/definitions/my-favorite-marking",

"description": "The definition property contains the marking object itself."

}

}

}

}

],

"required": [

"id",

"type",

"spec\_version",

"definition",

"definition\_type",

"created"

]

},

],

"definitions": {

"my-favorite-marking": {

"type": "object",

"description": "Description about my favorite marking",

"properties": {

"additional\_marking\_prop": {

"type": "string",

"description": "Some description about this property."

},

"required\_data\_storage\_hash": {

"type": "string",

"description": "Some description about this other property."

},

},

"required": [

"additional\_marking\_prop",

"required\_data\_storage\_hash",

]

},

}

}

}