

ModelOp Center v3.x: Model Metadata

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DOCUMENT PURPOSE

The following document provides an overview of the core metadata stored within ModelOp Center.

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Background

ModelOp Center enables consistent monitoring, governance, and automated orchestration of all models, regardless of the model factory in which it was developed, the language/framework used, or the platform in which the model executes. The foundation behind this capability is ModelOp Center's "standard model definition", which provides a common abstracted definition of a model across all languages, frameworks, factories, and execution environments. This document provides an overview of the core elements of the standard model definition. ModelOp Center captures and persists the "model metadata" that comprises the standard model definition with each version of the model.

Definitions

The following are several foundational elements within ModelOp Center:

- **Stored Model:**
 - Stored Models are works in progress that represent the latest information about the model: source code, metadata, assets, etc.
- **Deployable Model:**
 - Typically referred to as a "Version", Deployable Models are a snapshot of the StoredModel at a specific point in time
 - Captured for all batch jobs that are run, so we can see the exact revision of the model that was used
- **Deployed Model:**
 - These are deployable models that have actually been installed in the business
 - Contains the deployable model, but also full lineage of the lifecycle(s) followed to be installed

Core Metadata Elements

The following is an example of the core elements of the metadata for a StoredModel:

```
{
  "_embedded": {
    "storedModels": [
      {
        "associatedModels": [
          {
            "associationAssets": [
              {
                "assetId": "3fa85f64-5717-4562-b3fc-2c963f66afa6",
                "assetRole": "MODEL_SOURCE",
                "assetType": "string",
                "contentHash": {
                  "hashType": "string",
                  "hexString": "string"
                },
                "importedRepository": {
                  "repositoryType": "string"
                },
                "metaData": {
                  "custom": {},
                  "description": "string",
                  "expirationDate": "2022-03-13T21:10:41.009Z",
                  "name": "string",
                  "tags": [
                    "string"
                  ]
                }
              },
              {
                "name": "string",
```

```

        "repositoryInfo": {
          "repositoryType": "string"
        },
        "usage": "INPUT_ASSET"
      }
    ],
    "associationRole": "INPUT_DATA_MODEL",
    "associationType": "string",
    "schedules": [
      {
        "action": {
          "actionType": "string"
        },
        "active": true,
        "metaData": {
          "custom": {},
          "description": "string",
          "expirationDate": "2022-03-13T21:10:41.009Z",
          "name": "string",
          "tags": [
            "string"
          ]
        },
        "scheduleId": "3fa85f64-5717-4562-b3fc-2c963f66afa6",
        "scheduleType": "string"
      }
    ]
  },
  "createdBy": "string",
  "createdDate": "2022-03-13T21:10:41.009Z",
  "gitDifferences": [
    {
      "author": "string",
      "authorEmail": "string",
      "changeType": "string",
      "committer": "string",
      "committerEmail": "string",
      "diff": "string",
      "newId": "string",
      "newPath": "string",
      "oldId": "string",
      "oldPath": "string"
    }
  ],
  "group": "string",
  "id": "3fa85f64-5717-4562-b3fc-2c963f66afa6",
  "lastModifiedBy": "string",
  "lastModifiedDate": "2022-03-13T21:10:41.009Z",
  "modelAssets": [
    {
      "assetId": "3fa85f64-5717-4562-b3fc-2c963f66afa6",
      "assetRole": "MODEL_SOURCE",
      "assetType": "string",
      "contentHash": {
        "hashType": "string",
        "hexString": "string"
      },
      "importedRepository": {
        "repositoryType": "string"
      },
      "metaData": {
        "custom": {},
        "description": "string",
        "expirationDate": "2022-03-13T21:10:41.009Z",
        "name": "string",
        "tags": [
          "string"
        ]
      }
    }
  ]
}

```

```

    },
    "name": "string",
    "repositoryInfo": {
      "repositoryType": "string"
    },
    "usage": "INPUT_ASSET"
  }
],
"modelMetaData": {
  "attachments": [
    "string"
  ],
  "custom": {},
  "defaultAssociationRole": "INPUT_DATA_MODEL",
  "description": "string",
  "enableInputSchemaChecking": true,
  "enableOutputSchemaChecking": true,
  "expirationDate": "2022-03-13T21:10:41.009Z",
  "frequentlyUsed": true,
  "inputSchema": [
    {
      "name": "string",
      "schemaDefinition": "string",
      "schemaId": "3fa85f64-5717-4562-b3fc-2c963f66afa6"
    }
  ],
  "modelCategory": "BUSINESS_MODEL",
  "modelOrganization": "string",
  "modelRisk": "string",
  "modelUseCategory": "string",
  "name": "string",
  "outputSchema": [
    {
      "name": "string",
      "schemaDefinition": "string",
      "schemaId": "3fa85f64-5717-4562-b3fc-2c963f66afa6"
    }
  ],
  "platform": "string",
  "repositoryInfo": {
    "repositoryType": "string"
  },
  "tags": [
    "string"
  ],
  "type": "PYTHON"
},
"requiredAssets": [
  {
    "assetId": "3fa85f64-5717-4562-b3fc-2c963f66afa6",
    "assetRole": "MODEL_SOURCE",
    "assetType": "string",
    "contentHash": {
      "hashType": "string",
      "hexString": "string"
    },
    "importedRepository": {
      "repositoryType": "string"
    },
    "metaData": {
      "custom": {},
      "description": "string",
      "expirationDate": "2022-03-13T21:10:41.009Z",
      "name": "string",
      "tags": [
        "string"
      ]
    }
  },
  {
    "name": "string",

```

```

        "repositoryInfo": {
            "repositoryType": "string"
        },
        "usage": "INPUT_ASSET"
    }
],
"version": 0,
"versionNumber": 0
}
]
},
"_links": {
    "additionalProp1": {
        "deprecation": "string",
        "href": "string",
        "hreflang": "string",
        "media": "string",
        "name": "string",
        "profile": "string",
        "rel": {},
        "template": {
            "variableNames": [
                "string"
            ],
            "variables": [
                {
                    "description": "string",
                    "name": "string",
                    "type": "PATH_VARIABLE"
                }
            ]
        },
        "templated": true,
        "title": "string",
        "type": "string"
    },
    "additionalProp2": {
        "deprecation": "string",
        "href": "string",
        "hreflang": "string",
        "media": "string",
        "name": "string",
        "profile": "string",
        "rel": {},
        "template": {
            "variableNames": [
                "string"
            ],
            "variables": [
                {
                    "description": "string",
                    "name": "string",
                    "type": "PATH_VARIABLE"
                }
            ]
        },
        "templated": true,
        "title": "string",
        "type": "string"
    },
    "additionalProp3": {
        "deprecation": "string",
        "href": "string",
        "hreflang": "string",
        "media": "string",
        "name": "string",
        "profile": "string",
        "rel": {},
        "template": {

```

```

    "variableNames": [
      "string"
    ],
    "variables": [
      {
        "description": "string",
        "name": "string",
        "type": "PATH_VARIABLE"
      }
    ]
  },
  "templated": true,
  "title": "string",
  "type": "string"
}
}
}

```

The following is an example of the deployableModel metadata:

```

{
  "_embedded": {
    "deployableModels": [
      {
        "associatedModels": [
          {
            "associationAssets": [
              {
                "assetId": "3fa85f64-5717-4562-b3fc-2c963f66afa6",
                "assetRole": "MODEL_SOURCE",
                "assetType": "string",
                "contentHash": {
                  "hashType": "string",
                  "hexString": "string"
                },
                "importedRepository": {
                  "repositoryType": "string"
                },
                "metaData": {
                  "custom": {},
                  "description": "string",
                  "expirationDate": "2022-03-13T21:09:43.245Z",
                  "name": "string",
                  "tags": [
                    "string"
                  ]
                },
                "name": "string",
                "repositoryInfo": {
                  "repositoryType": "string"
                },
                "usage": "INPUT_ASSET"
              }
            ],
            "associationRole": "INPUT_DATA_MODEL",
            "associationType": "string",
            "schedules": [
              {
                "action": {
                  "actionType": "string"
                },
                "active": true,
                "metaData": {
                  "custom": {},
                  "description": "string",
                  "expirationDate": "2022-03-13T21:09:43.245Z",
                  "name": "string",
                  "tags": [

```

```

        "string"
      ]
    },
    "scheduleId": "3fa85f64-5717-4562-b3fc-2c963f66afa6",
    "scheduleType": "string"
  }
]
},
"createdBy": "string",
"createdDate": "2022-03-13T21:09:43.245Z",
"group": "string",
"id": "3fa85f64-5717-4562-b3fc-2c963f66afa6",
"lastModifiedBy": "string",
"lastModifiedDate": "2022-03-13T21:09:43.245Z",
"metaData": {
  "custom": {},
  "description": "string",
  "expirationDate": "2022-03-13T21:09:43.245Z",
  "name": "string",
  "tags": [
    "string"
  ]
},
"modelDocuments": [
  {
    "assetId": "3fa85f64-5717-4562-b3fc-2c963f66afa6",
    "assetRole": "MODEL_SOURCE",
    "assetType": "string",
    "contentHash": {
      "hashType": "string",
      "hexString": "string"
    },
    "importedRepository": {
      "repositoryType": "string"
    },
    "metaData": {
      "custom": {},
      "description": "string",
      "expirationDate": "2022-03-13T21:09:43.245Z",
      "name": "string",
      "tags": [
        "string"
      ]
    },
    "name": "string",
    "repositoryInfo": {
      "repositoryType": "string"
    },
    "usage": "INPUT_ASSET"
  }
],
"modelMLCs": [
  {
    "activityInstances": [
      {
        "activityId": "string",
        "activityName": "string",
        "activityType": "string",
        "assignee": "string",
        "calledProcessInstanceId": "string",
        "canceled": true,
        "completeScope": true,
        "durationInMillis": 0,
        "endTime": "2022-03-13T21:09:43.245Z",
        "errorMessage": "string",
        "executionId": "string",
        "id": "string",
        "parentActivityInstanceId": "string",

```



```

        "processDefinitionId": "string",
        "processDefinitionKey": "string",
        "processInstanceId": "string",
        "removalTime": "2022-03-13T21:09:43.245Z",
        "rootProcessInstanceId": "string",
        "startTime": "2022-03-13T21:09:43.245Z",
        "taskId": "string",
        "tenantId": "string"
    }
],
"processInstance": {
    "businessKey": "string",
    "caseInstanceId": "string",
    "deleteReason": "string",
    "durationInMillis": 0,
    "endTime": "2022-03-13T21:09:43.245Z",
    "id": "string",
    "processDefinitionId": "string",
    "processDefinitionKey": "string",
    "processDefinitionName": "string",
    "processDefinitionVersion": 0,
    "removalTime": "2022-03-13T21:09:43.245Z",
    "rootProcessInstanceId": "string",
    "startActivityId": "string",
    "startTime": "2022-03-13T21:09:43.245Z",
    "startUserId": "string",
    "state": "ACTIVE",
    "superCaseInstanceId": "string",
    "superProcessInstanceId": "string",
    "tenantId": "string"
}
},
"storedModel": {
    "associatedModels": [
        {
            "associationAssets": [
                {
                    "assetId": "3fa85f64-5717-4562-b3fc-2c963f66afa6",
                    "assetRole": "MODEL_SOURCE",
                    "assetType": "string",
                    "contentHash": {
                        "hashType": "string",
                        "hexString": "string"
                    },
                    "importedRepository": {
                        "repositoryType": "string"
                    },
                    "metaData": {
                        "custom": {},
                        "description": "string",
                        "expirationDate": "2022-03-13T21:09:43.245Z",
                        "name": "string",
                        "tags": [
                            "string"
                        ]
                    },
                    "name": "string",
                    "repositoryInfo": {
                        "repositoryType": "string"
                    },
                    "usage": "INPUT_ASSET"
                }
            ],
            "associationRole": "INPUT_DATA_MODEL",
            "associationType": "string",
            "schedules": [
                {
                    "action": {

```

```

        "actionType": "string"
    },
    "active": true,
    "metaData": {
        "custom": {},
        "description": "string",
        "expirationDate": "2022-03-13T21:09:43.245Z",
        "name": "string",
        "tags": [
            "string"
        ]
    },
    "scheduleId": "3fa85f64-5717-4562-b3fc-2c963f66afa6",
    "scheduleType": "string"
    }
]
}
],
"createdBy": "string",
"createdDate": "2022-03-13T21:09:43.245Z",
"gitDifferences": [
    {
        "author": "string",
        "authorEmail": "string",
        "changeType": "string",
        "committer": "string",
        "committerEmail": "string",
        "diff": "string",
        "newId": "string",
        "newPath": "string",
        "oldId": "string",
        "oldPath": "string"
    }
],
"group": "string",
"id": "3fa85f64-5717-4562-b3fc-2c963f66afa6",
"lastModifiedBy": "string",
"lastModifiedDate": "2022-03-13T21:09:43.245Z",
"modelAssets": [
    {
        "assetId": "3fa85f64-5717-4562-b3fc-2c963f66afa6",
        "assetRole": "MODEL_SOURCE",
        "assetType": "string",
        "contentHash": {
            "hashType": "string",
            "hexString": "string"
        },
        "importedRepository": {
            "repositoryType": "string"
        },
        "metaData": {
            "custom": {},
            "description": "string",
            "expirationDate": "2022-03-13T21:09:43.245Z",
            "name": "string",
            "tags": [
                "string"
            ]
        },
        "name": "string",
        "repositoryInfo": {
            "repositoryType": "string"
        },
        "usage": "INPUT_ASSET"
    }
],
"modelMetaData": {
    "attachments": [
        "string"
    ]
}

```

```

],
"custom": {},
"defaultAssociationRole": "INPUT_DATA_MODEL",
"description": "string",
"enableInputSchemaChecking": true,
"enableOutputSchemaChecking": true,
"expirationDate": "2022-03-13T21:09:43.245Z",
"frequentlyUsed": true,
"inputSchema": [
  {
    "name": "string",
    "schemaDefinition": "string",
    "schemaId": "3fa85f64-5717-4562-b3fc-2c963f66afa6"
  }
],
"modelCategory": "BUSINESS_MODEL",
"modelOrganization": "string",
"modelRisk": "string",
"modelUseCategory": "string",
"name": "string",
"outputSchema": [
  {
    "name": "string",
    "schemaDefinition": "string",
    "schemaId": "3fa85f64-5717-4562-b3fc-2c963f66afa6"
  }
],
"platform": "string",
"repositoryInfo": {
  "repositoryType": "string"
},
"tags": [
  "string"
],
"type": "PYTHON"
},
"requiredAssets": [
  {
    "assetId": "3fa85f64-5717-4562-b3fc-2c963f66afa6",
    "assetRole": "MODEL_SOURCE",
    "assetType": "string",
    "contentHash": {
      "hashType": "string",
      "hexString": "string"
    },
    "importedRepository": {
      "repositoryType": "string"
    },
    "metaData": {
      "custom": {},
      "description": "string",
      "expirationDate": "2022-03-13T21:09:43.248Z",
      "name": "string",
      "tags": [
        "string"
      ]
    },
    "name": "string",
    "repositoryInfo": {
      "repositoryType": "string"
    },
    "usage": "INPUT_ASSET"
  }
],
"version": 0,
"versionNumber": 0
},
"targetRuntimes": [
  {

```

```

    "createdBy": "string",
    "createdDate": "2022-03-13T21:09:43.248Z",
    "description": "string",
    "engineType": "string",
    "environmentName": "string",
    "group": "string",
    "id": "3fa85f64-5717-4562-b3fc-2c963f66afa6",
    "inProduction": true,
    "inputEndpoints": [
      {
        "description": "string",
        "encoding": "UTF8",
        "endpointType": "string",
        "name": "string"
      }
    ],
    "lastActivity": {
      "date": "2022-03-13T21:09:43.248Z",
      "type": "DEPLOYMENT"
    },
    "lastModifiedBy": "string",
    "lastModifiedDate": "2022-03-13T21:09:43.248Z",
    "name": "string",
    "outputEndpoints": [
      {
        "description": "string",
        "encoding": "UTF8",
        "endpointType": "string",
        "name": "string"
      }
    ],
    "platform": "string",
    "release": "string",
    "state": "CREATING",
    "tags": [
      "string"
    ],
    "version": 0,
    "versionNumber": 0
  }
],
"version": 0,
"versionNumber": 0
}
],
},
"_links": {
  "additionalProp1": {
    "deprecation": "string",
    "href": "string",
    "hreflang": "string",
    "media": "string",
    "name": "string",
    "profile": "string",
    "rel": {},
    "template": {
      "variableNames": [
        "string"
      ],
      "variables": [
        {
          "description": "string",
          "name": "string",
          "type": "PATH_VARIABLE"
        }
      ]
    }
  }
},
"templated": true,
"title": "string",

```

```

    "type": "string"
  },
  "additionalProp2": {
    "deprecation": "string",
    "href": "string",
    "hreflang": "string",
    "media": "string",
    "name": "string",
    "profile": "string",
    "rel": {},
    "template": {
      "variableNames": [
        "string"
      ],
      "variables": [
        {
          "description": "string",
          "name": "string",
          "type": "PATH_VARIABLE"
        }
      ]
    }
  },
  "templated": true,
  "title": "string",
  "type": "string"
},
"additionalProp3": {
  "deprecation": "string",
  "href": "string",
  "hreflang": "string",
  "media": "string",
  "name": "string",
  "profile": "string",
  "rel": {},
  "template": {
    "variableNames": [
      "string"
    ],
    "variables": [
      {
        "description": "string",
        "name": "string",
        "type": "PATH_VARIABLE"
      }
    ]
  }
},
"templated": true,
"title": "string",
"type": "string"
}
}
}

```

The following is an example of the deployedModel metadata:

```

{
  "_embedded": {
    "deployedModels": [
      {
        "createdBy": "string",
        "createdDate": "2022-03-13T21:11:31.330Z",
        "deployTime": "2022-03-13T21:11:31.330Z",
        "deployableModel": {
          "associatedModels": [
            {
              "associationAssets": [

```

```

    {
      "assetId": "3fa85f64-5717-4562-b3fc-2c963f66afa6",
      "assetRole": "MODEL_SOURCE",
      "assetType": "string",
      "contentHash": {
        "hashType": "string",
        "hexString": "string"
      },
      "importedRepository": {
        "repositoryType": "string"
      },
      "metaData": {
        "custom": {},
        "description": "string",
        "expirationDate": "2022-03-13T21:11:31.330Z",
        "name": "string",
        "tags": [
          "string"
        ]
      },
      "name": "string",
      "repositoryInfo": {
        "repositoryType": "string"
      },
      "usage": "INPUT_ASSET"
    }
  ],
  "associationRole": "INPUT_DATA_MODEL",
  "associationType": "string",
  "schedules": [
    {
      "action": {
        "actionType": "string"
      },
      "active": true,
      "metaData": {
        "custom": {},
        "description": "string",
        "expirationDate": "2022-03-13T21:11:31.330Z",
        "name": "string",
        "tags": [
          "string"
        ]
      },
      "scheduleId": "3fa85f64-5717-4562-b3fc-2c963f66afa6",
      "scheduleType": "string"
    }
  ]
},
"createdBy": "string",
"createdDate": "2022-03-13T21:11:31.330Z",
"group": "string",
"id": "3fa85f64-5717-4562-b3fc-2c963f66afa6",
"lastModifiedBy": "string",
"lastModifiedDate": "2022-03-13T21:11:31.330Z",
"metaData": {
  "custom": {},
  "description": "string",
  "expirationDate": "2022-03-13T21:11:31.330Z",
  "name": "string",
  "tags": [
    "string"
  ]
},
"modelDocuments": [
  {
    "assetId": "3fa85f64-5717-4562-b3fc-2c963f66afa6",
    "assetRole": "MODEL_SOURCE",

```

```

"assetType": "string",
"contentHash": {
  "hashType": "string",
  "hexString": "string"
},
"importedRepository": {
  "repositoryType": "string"
},
"metaData": {
  "custom": {},
  "description": "string",
  "expirationDate": "2022-03-13T21:11:31.330Z",
  "name": "string",
  "tags": [
    "string"
  ]
},
"name": "string",
"repositoryInfo": {
  "repositoryType": "string"
},
"usage": "INPUT_ASSET"
}
],
"modelMLCs": [
  {
    "activityInstances": [
      {
        "activityId": "string",
        "activityName": "string",
        "activityType": "string",
        "assignee": "string",
        "calledProcessInstanceId": "string",
        "canceled": true,
        "completeScope": true,
        "durationInMillis": 0,
        "endTime": "2022-03-13T21:11:31.330Z",
        "errorMessage": "string",
        "executionId": "string",
        "id": "string",
        "parentActivityInstanceId": "string",
        "processDefinitionId": "string",
        "processDefinitionKey": "string",
        "processInstanceId": "string",
        "removalTime": "2022-03-13T21:11:31.330Z",
        "rootProcessInstanceId": "string",
        "startTime": "2022-03-13T21:11:31.330Z",
        "taskId": "string",
        "tenantId": "string"
      }
    ],
    "processInstance": {
      "businessKey": "string",
      "caseInstanceId": "string",
      "deleteReason": "string",
      "durationInMillis": 0,
      "endTime": "2022-03-13T21:11:31.330Z",
      "id": "string",
      "processDefinitionId": "string",
      "processDefinitionKey": "string",
      "processDefinitionName": "string",
      "processDefinitionVersion": 0,
      "removalTime": "2022-03-13T21:11:31.330Z",
      "rootProcessInstanceId": "string",
      "startActivityId": "string",
      "startTime": "2022-03-13T21:11:31.330Z",
      "startUserId": "string",
      "state": "ACTIVE",
      "superCaseInstanceId": "string",

```

```

    "superProcessInstanceId": "string",
    "tenantId": "string"
  }
}
],
"storedModel": {
  "associatedModels": [
    {
      "associationAssets": [
        {
          "assetId": "3fa85f64-5717-4562-b3fc-2c963f66afa6",
          "assetRole": "MODEL_SOURCE",
          "assetType": "string",
          "contentHash": {
            "hashType": "string",
            "hexString": "string"
          },
          "importedRepository": {
            "repositoryType": "string"
          },
          "metaData": {
            "custom": {},
            "description": "string",
            "expirationDate": "2022-03-13T21:11:31.330Z",
            "name": "string",
            "tags": [
              "string"
            ]
          },
          "name": "string",
          "repositoryInfo": {
            "repositoryType": "string"
          },
          "usage": "INPUT_ASSET"
        }
      ],
      "associationRole": "INPUT_DATA_MODEL",
      "associationType": "string",
      "schedules": [
        {
          "action": {
            "actionType": "string"
          },
          "active": true,
          "metaData": {
            "custom": {},
            "description": "string",
            "expirationDate": "2022-03-13T21:11:31.330Z",
            "name": "string",
            "tags": [
              "string"
            ]
          },
          "scheduleId": "3fa85f64-5717-4562-b3fc-2c963f66afa6",
          "scheduleType": "string"
        }
      ]
    }
  ],
  "createdBy": "string",
  "createdDate": "2022-03-13T21:11:31.330Z",
  "gitDifferences": [
    {
      "author": "string",
      "authorEmail": "string",
      "changeType": "string",
      "committer": "string",
      "committerEmail": "string",
      "diff": "string",

```



```

        "newId": "string",
        "newPath": "string",
        "oldId": "string",
        "oldPath": "string"
    }
],
"group": "string",
"id": "3fa85f64-5717-4562-b3fc-2c963f66afa6",
"lastModifiedBy": "string",
"lastModifiedDate": "2022-03-13T21:11:31.330Z",
"modelAssets": [
    {
        "assetId": "3fa85f64-5717-4562-b3fc-2c963f66afa6",
        "assetRole": "MODEL_SOURCE",
        "assetType": "string",
        "contentHash": {
            "hashType": "string",
            "hexString": "string"
        },
        "importedRepository": {
            "repositoryType": "string"
        },
        "metaData": {
            "custom": {},
            "description": "string",
            "expirationDate": "2022-03-13T21:11:31.330Z",
            "name": "string",
            "tags": [
                "string"
            ]
        },
        "name": "string",
        "repositoryInfo": {
            "repositoryType": "string"
        },
        "usage": "INPUT_ASSET"
    }
],
"modelMetaData": {
    "attachments": [
        "string"
    ],
    "custom": {},
    "defaultAssociationRole": "INPUT_DATA_MODEL",
    "description": "string",
    "enableInputSchemaChecking": true,
    "enableOutputSchemaChecking": true,
    "expirationDate": "2022-03-13T21:11:31.330Z",
    "frequentlyUsed": true,
    "inputSchema": [
        {
            "name": "string",
            "schemaDefinition": "string",
            "schemaId": "3fa85f64-5717-4562-b3fc-2c963f66afa6"
        }
    ],
    "modelCategory": "BUSINESS_MODEL",
    "modelOrganization": "string",
    "modelRisk": "string",
    "modelUseCategory": "string",
    "name": "string",
    "outputSchema": [
        {
            "name": "string",
            "schemaDefinition": "string",
            "schemaId": "3fa85f64-5717-4562-b3fc-2c963f66afa6"
        }
    ],
    "platform": "string",

```

```

    "repositoryInfo": {
      "repositoryType": "string"
    },
    "tags": [
      "string"
    ],
    "type": "PYTHON"
  },
  "requiredAssets": [
    {
      "assetId": "3fa85f64-5717-4562-b3fc-2c963f66afa6",
      "assetRole": "MODEL_SOURCE",
      "assetType": "string",
      "contentHash": {
        "hashType": "string",
        "hexString": "string"
      },
      "importedRepository": {
        "repositoryType": "string"
      },
      "metaData": {
        "custom": {},
        "description": "string",
        "expirationDate": "2022-03-13T21:11:31.330Z",
        "name": "string",
        "tags": [
          "string"
        ]
      },
      "name": "string",
      "repositoryInfo": {
        "repositoryType": "string"
      },
      "usage": "INPUT_ASSET"
    }
  ],
  "version": 0,
  "versionNumber": 0
},
"targetRuntimes": [
  {
    "createdBy": "string",
    "createdDate": "2022-03-13T21:11:31.330Z",
    "description": "string",
    "engineType": "string",
    "environmentName": "string",
    "group": "string",
    "id": "3fa85f64-5717-4562-b3fc-2c963f66afa6",
    "inProduction": true,
    "inputEndpoints": [
      {
        "description": "string",
        "encoding": "UTF8",
        "endpointType": "string",
        "name": "string"
      }
    ],
    "lastActivity": {
      "date": "2022-03-13T21:11:31.330Z",
      "type": "DEPLOYMENT"
    },
    "lastModifiedBy": "string",
    "lastModifiedDate": "2022-03-13T21:11:31.330Z",
    "name": "string",
    "outputEndpoints": [
      {
        "description": "string",
        "encoding": "UTF8",
        "endpointType": "string",

```

```

        "name": "string"
      }
    ],
    "platform": "string",
    "release": "string",
    "state": "CREATING",
    "tags": [
      "string"
    ],
    "version": 0,
    "versionNumber": 0
  }
],
"version": 0,
"versionNumber": 0
},
"deploymentRepository": {
  "repositoryType": "string"
},
"engine": {
  "createdBy": "string",
  "createdDate": "2022-03-13T21:11:31.330Z",
  "description": "string",
  "engineType": "string",
  "environmentName": "string",
  "group": "string",
  "id": "3fa85f64-5717-4562-b3fc-2c963f66afa6",
  "inProduction": true,
  "inputEndpoints": [
    {
      "description": "string",
      "encoding": "UTF8",
      "endpointType": "string",
      "name": "string"
    }
  ],
  "lastActivity": {
    "date": "2022-03-13T21:11:31.330Z",
    "type": "DEPLOYMENT"
  },
  "lastModifiedBy": "string",
  "lastModifiedDate": "2022-03-13T21:11:31.330Z",
  "name": "string",
  "outputEndpoints": [
    {
      "description": "string",
      "encoding": "UTF8",
      "endpointType": "string",
      "name": "string"
    }
  ],
  "platform": "string",
  "release": "string",
  "state": "CREATING",
  "tags": [
    "string"
  ],
  "version": 0,
  "versionNumber": 0
},
"group": "string",
"id": "3fa85f64-5717-4562-b3fc-2c963f66afa6",
"lastModifiedBy": "string",
"lastModifiedDate": "2022-03-13T21:11:31.330Z",
"lastStateChangedTime": "2022-03-13T21:11:31.330Z",
"metaData": {
  "custom": {},
  "description": "string",
  "expirationDate": "2022-03-13T21:11:31.330Z",

```

```

    "name": "string",
    "tags": [
      "string"
    ]
  },
  "modelLifecycleActivityInstances": [
    {
      "activityId": "string",
      "activityName": "string",
      "activityType": "string",
      "assignee": "string",
      "calledProcessInstanceId": "string",
      "canceled": true,
      "completeScope": true,
      "durationInMillis": 0,
      "endTime": "2022-03-13T21:11:31.330Z",
      "errorMessage": "string",
      "executionId": "string",
      "id": "string",
      "parentActivityInstanceId": "string",
      "processDefinitionId": "string",
      "processDefinitionKey": "string",
      "processInstanceId": "string",
      "removalTime": "2022-03-13T21:11:31.330Z",
      "rootProcessInstanceId": "string",
      "startTime": "2022-03-13T21:11:31.330Z",
      "taskId": "string",
      "tenantId": "string"
    }
  ],
  "modelLifecycleProcessInstance": {
    "businessKey": "string",
    "caseInstanceId": "string",
    "deleteReason": "string",
    "durationInMillis": 0,
    "endTime": "2022-03-13T21:11:31.330Z",
    "id": "string",
    "processDefinitionId": "string",
    "processDefinitionKey": "string",
    "processDefinitionName": "string",
    "processDefinitionVersion": 0,
    "removalTime": "2022-03-13T21:11:31.330Z",
    "rootProcessInstanceId": "string",
    "startActivityId": "string",
    "startTime": "2022-03-13T21:11:31.330Z",
    "startUserId": "string",
    "state": "ACTIVE",
    "superCaseInstanceId": "string",
    "superProcessInstanceId": "string",
    "tenantId": "string"
  },
  "state": "CREATED",
  "undeployTime": "2022-03-13T21:11:31.330Z",
  "version": 0,
  "versionNumber": 0
}
]
},
"_links": {
  "additionalProp1": {
    "deprecation": "string",
    "href": "string",
    "hreflang": "string",
    "media": "string",
    "name": "string",
    "profile": "string",
    "rel": {},
    "template": {
      "variableNames": [

```

```

    "string"
  ],
  "variables": [
    {
      "description": "string",
      "name": "string",
      "type": "PATH_VARIABLE"
    }
  ]
},
"templated": true,
"title": "string",
"type": "string"
},
"additionalProp2": {
  "deprecation": "string",
  "href": "string",
  "hreflang": "string",
  "media": "string",
  "name": "string",
  "profile": "string",
  "rel": {},
  "template": {
    "variableNames": [
      "string"
    ],
    "variables": [
      {
        "description": "string",
        "name": "string",
        "type": "PATH_VARIABLE"
      }
    ]
  },
  "templated": true,
  "title": "string",
  "type": "string"
},
"additionalProp3": {
  "deprecation": "string",
  "href": "string",
  "hreflang": "string",
  "media": "string",
  "name": "string",
  "profile": "string",
  "rel": {},
  "template": {
    "variableNames": [
      "string"
    ],
    "variables": [
      {
        "description": "string",
        "name": "string",
        "type": "PATH_VARIABLE"
      }
    ]
  },
  "templated": true,
  "title": "string",
  "type": "string"
}
}
}

```

Custom Metadata

Overview

ModelOp Center allows Customers to implement Customer-specific metadata for a model—for a StoredModel, DeployableModel, and DeployedModel. The “Custom” metadata fields for each of these elements are flexible to allow the Customer to define simple or complex elements – the only requirement is that it implements standard json.

For example, a Customer may want to require that users add custom metadata upon registration. This metadata would be placed within the “custom” field of the StoredModel upon registration.

Another example is that a Customer’s model lifecycle might require that specific governance approvals be stored as custom metadata with a “version” of a model. This would be placed with the “metadata” field of the DeployableModel “snapshot” of the model for auditability.

Adding/Modifying Custom Metadata

Custom metadata can be added for StoredModels, DeployableModels, or DeployedModels through the ModelOp Center UI, API or via an MLC.

Below are several mechanisms to add/update custom metadata via the ModelOp Center API:

- (1) **Register with a StoredModel:** add the custom metadata to a StoredModel upon initial registration via POST “/api/storedModels”
 - a. Simply add in metadata in the “modelMetaData”:”custom” field
- (2) **Add or update a StoredModel:** add or update the custom metadata to an existing StoredModel via “PATCH /api/storedModels/{id}”
 - a. An example input for the PATCH:

```
"modelMetaData": {  
  "custom": {  
    "CustomElement1": "Value1",  
    "CustomElement2": "Value2",  
    "CustomElement3": "Value3"  
  }  
}
```
- (3) **Add or update a DeployableModel:** add or update the custom metadata for a DeployableModel via PATCH “/api/deployableModels/{id}”
 - a. An example input for the PATCH:

```
"metaData": {  
  "custom": {  
    "DeployableModelCustomElement1": "Value1",  
    "DeployableModelCustomElement2": "Value2",  
    "DeployableModelCustomElement3": "Value3"  
  }  
}
```
- (4) **Add or update a DeployedModel:** add or update the custom metadata for a DeployedModel via PATCH “/api/deployedModels/{id}”
 - a. An example input for the PATCH:

```
"metaData": {
```

```
"custom": {  
  "DeployedModelCustomElement1": "Value1",  
  "DeployedModelCustomElement2": "Value2",  
  "DeployedModelCustomElement3": "Value3"  
}
```