

```
{
  "name": "genMetalog Library",
  "objectType": "sipModel",
  "libraryType": "SIPmath_3_0",
  "dateCreated": "2021-07-03",
  "provenance": "SLS",
  "globalVariables": [
    {
      "name": "sumOfIidLognormals",
      "value": [
        {
          "shapeValue": 1.1,
          "numberOfIIDs": 1,
          "aCoefficients": [
            2.302605,
            -0.012263,
            0.003631,
            0.236955,
            -0.014925,
            0.137107,
            -0.323127,
            -0.012196,
            0.040094
          ]
        },
        {
          "shapeValue": 1.1,
          "numberOfIIDs": 2,
          "aCoefficients": [
            2.997134,
            -0.005738,
            0.006037,
            0.155605,
            -0.024809,
            0.086815,
            -0.197671,
            -0.020988,
            0.065798
          ]
        },
        {
          "shapeValue": 1.1,
          "numberOfIIDs": 3,
          "aCoefficients": [
            3.403081,
```

```
    -0.007068,  
    -0.001965,  
    0.137062,  
    0.007647,  
    0.079549,  
    -0.191059,  
    0.006260,  
    -0.014339  
  ]  
},  
{  
  "shapeValue": 1.2,  
  "numberOfIIDs": 1,  
  "aCoefficients": [  
    2.302623,  
    -0.023458,  
    0.006946,  
    0.453277,  
    -0.028551,  
    0.262276,  
    -0.618120,  
    -0.023329,  
    0.076697  
  ]  
},  
{  
  "shapeValue": 1.2,  
  "numberOfIIDs": 2,  
  "aCoefficients": [  
    3.000814,  
    -0.012044,  
    0.009722,  
    0.302727,  
    -0.040367,  
    0.170339,  
    -0.393583,  
    -0.033614,  
    0.107979  
  ]  
},  
{  
  "shapeValue": 1.2,  
  "numberOfIIDs": 3,  
  "aCoefficients": [  
    3.407988,
```

```

-0.012641,
-0.002373,
0.258786,
0.009286,
0.149144,
-0.353578,
0.007015,
-0.013292
]
}
]
}
],
"U01": {
  "rng": [
    {
      "name": "HDR10",
      "function": "HDR_2_0",
      "arguments": {
        "counter": "PM_Index",
        "entity": 9039920,
        "varId": 10,
        "seed3": 0,
        "seed4": 0
      }
    }
  ]
}
]
},
"sips": [
  {
    "name": "TotalDamage",
    "ref": {
      "source": "rng",
      "name": "HDR10"
    },
    "function": "GeneralizedMetalog",
    "arguments": {
      "aCoefficients": {
        "type": "globalVariables",
        "value": "sumOfIidLognormals"
      },
      "dims": [
        {
          "type": "parameter",
          "name": "numberOfIIIDs",

```

U01 section refers to a uniform random variable on 0 to 1.

rng stands for random number generator, which in this case is named "HDR10" and is an HDR2.0 function (current HDR Generator with an iteration counter and 4 seeds). In theory other RNGs could be supported as well.

The arguments of the HDR are the Monte Carlo iteration counter (PM\_Index), and the four seeds as specified.

SIPs section starts here. This example has only one.

This SIP is named "Total Damage" and is driven by a U01 named "HDR10".

The function is a Generalized Metalog. This requires a specialized AP on the client computer.

The arguments are in general a multi-dimensional table of a-coefficients associated with the parameters of the Generalized Metalog.

```
    "numericType": "integer"
  },
  {
    "type": "parameter",
    "name": "shapeValue",
    "numericType": "float"
  }
],
"lowerBound": 0
}
]
}
```