



CERBERO



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CERBERO

(Cross-layer modEl-based fRamework for multi-oBjective dEsign of Reconfigurable systems in
unceRtain hybRid envirOnments)

CIF (CERBERO Interoperability Framework)

Evgeny Shindin, IBM Research - Haifa

<http://www.cerbero-h2020.eu/>





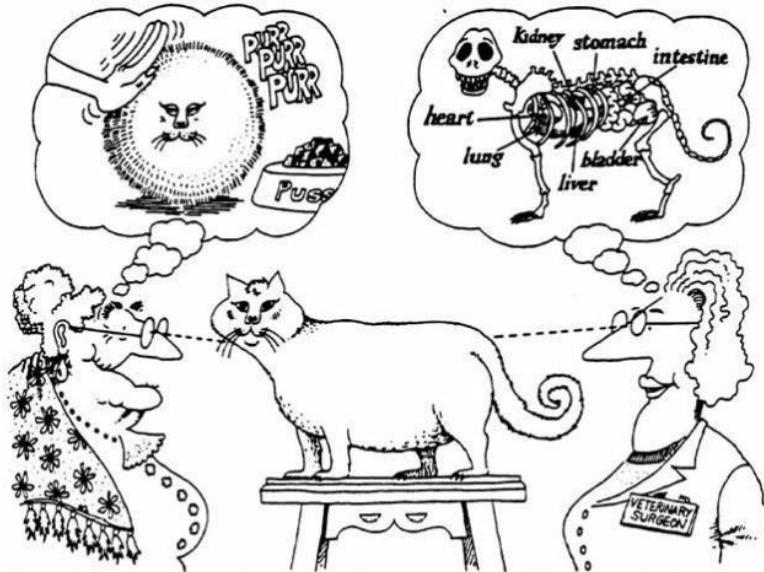
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Agenda

1. Real world versus models
2. Interoperability problem
3. CERBERO solution (CIF)

Real world versus models





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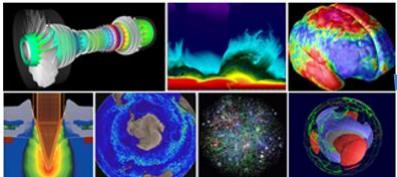


Cyber-physical system

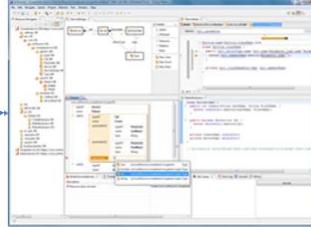
Configuration tool



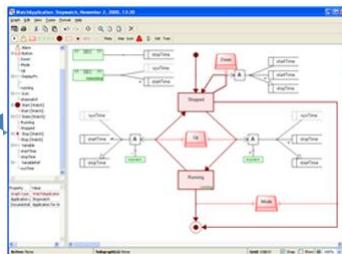
Visualization tool



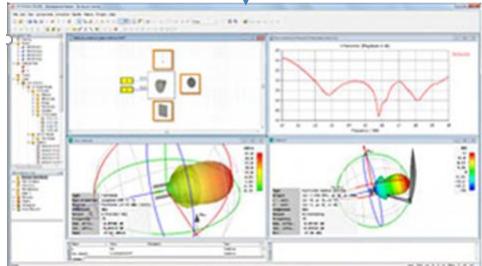
Code generation tool



Modeling environment

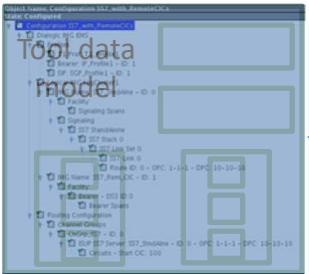


Simulation tool



Cyber-physical system

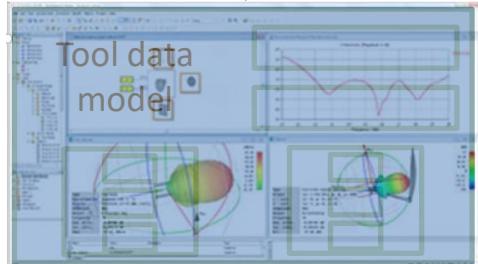
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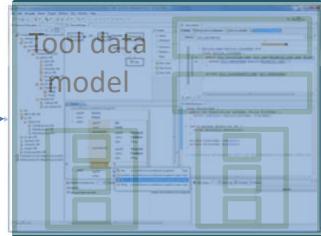
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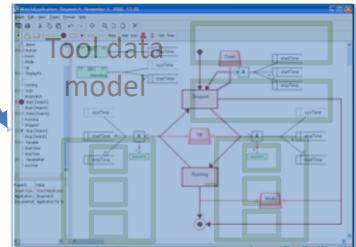
Simulation tool

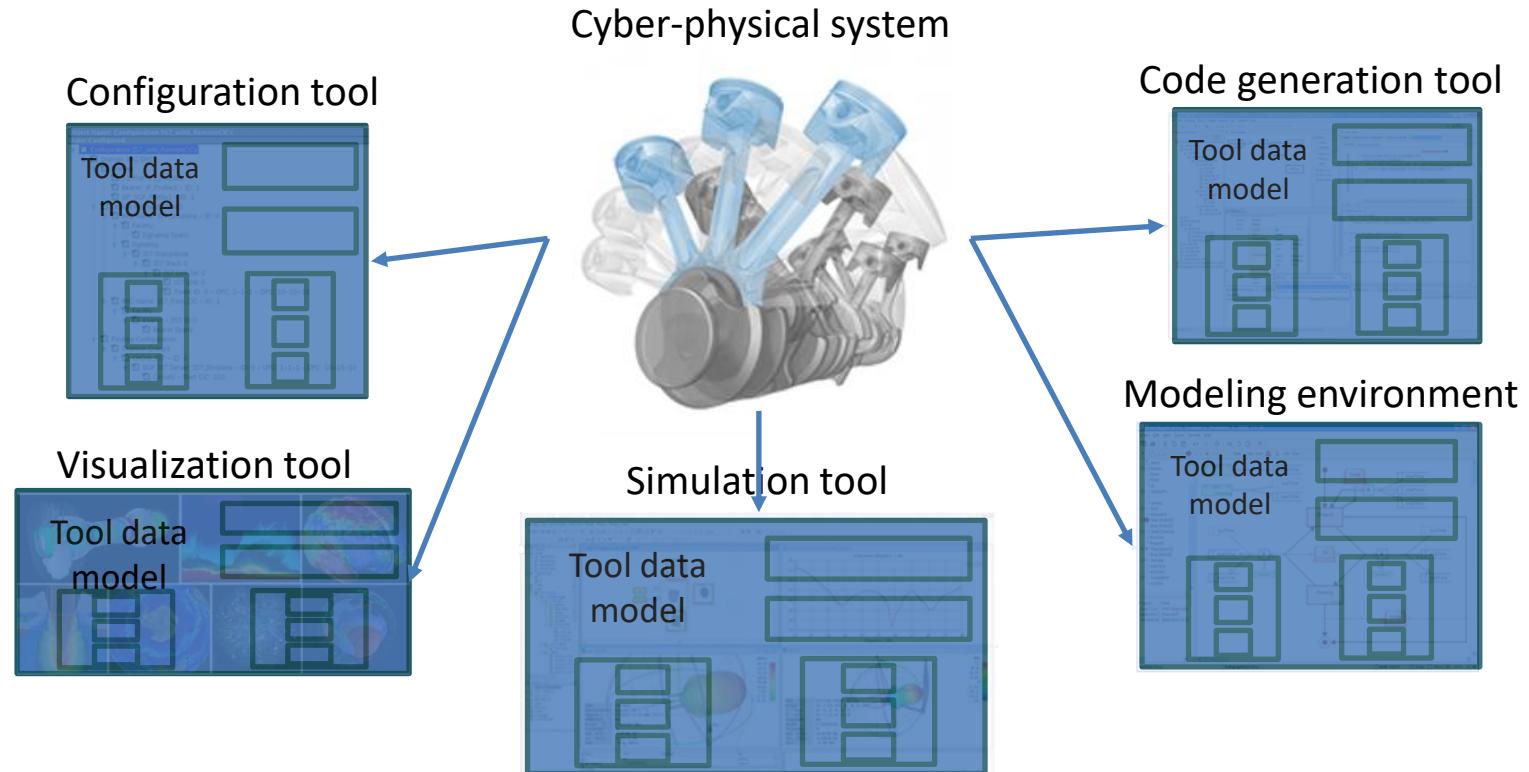


Code generation tool



Modeling environment



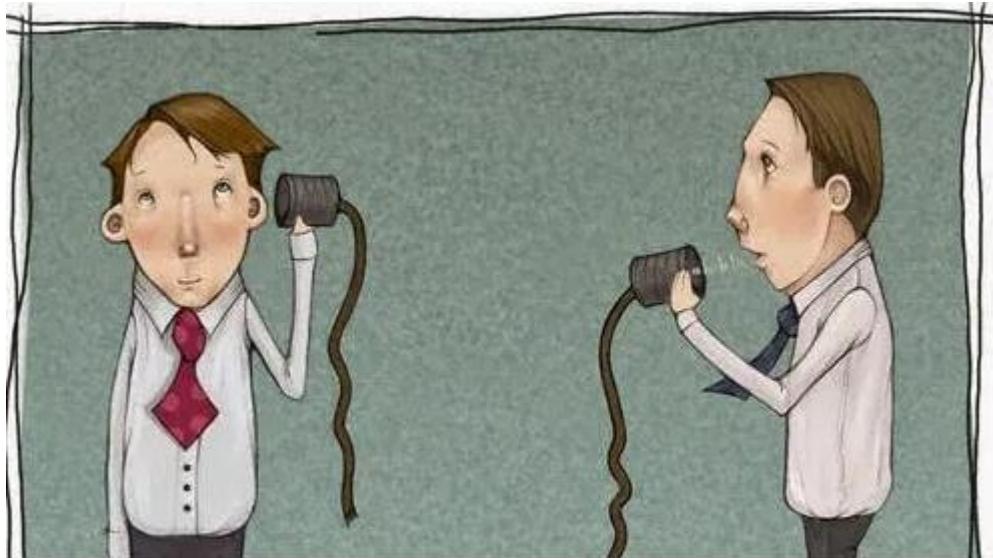




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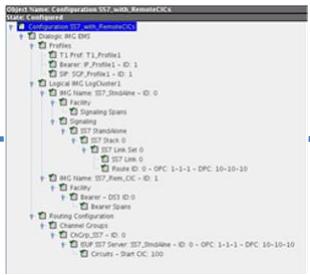


Interoperability problem

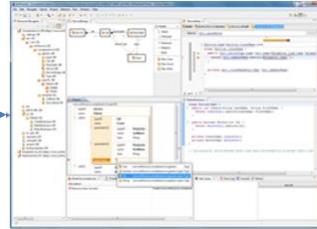




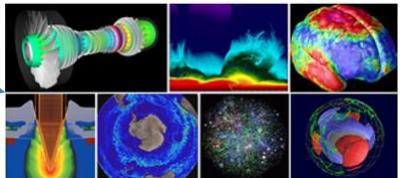
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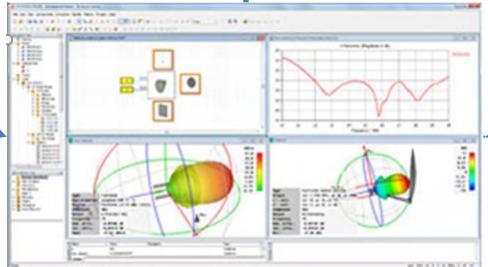
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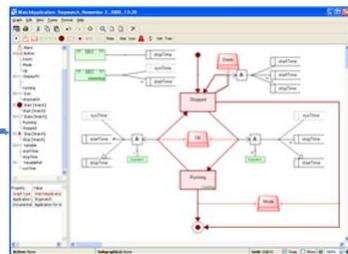
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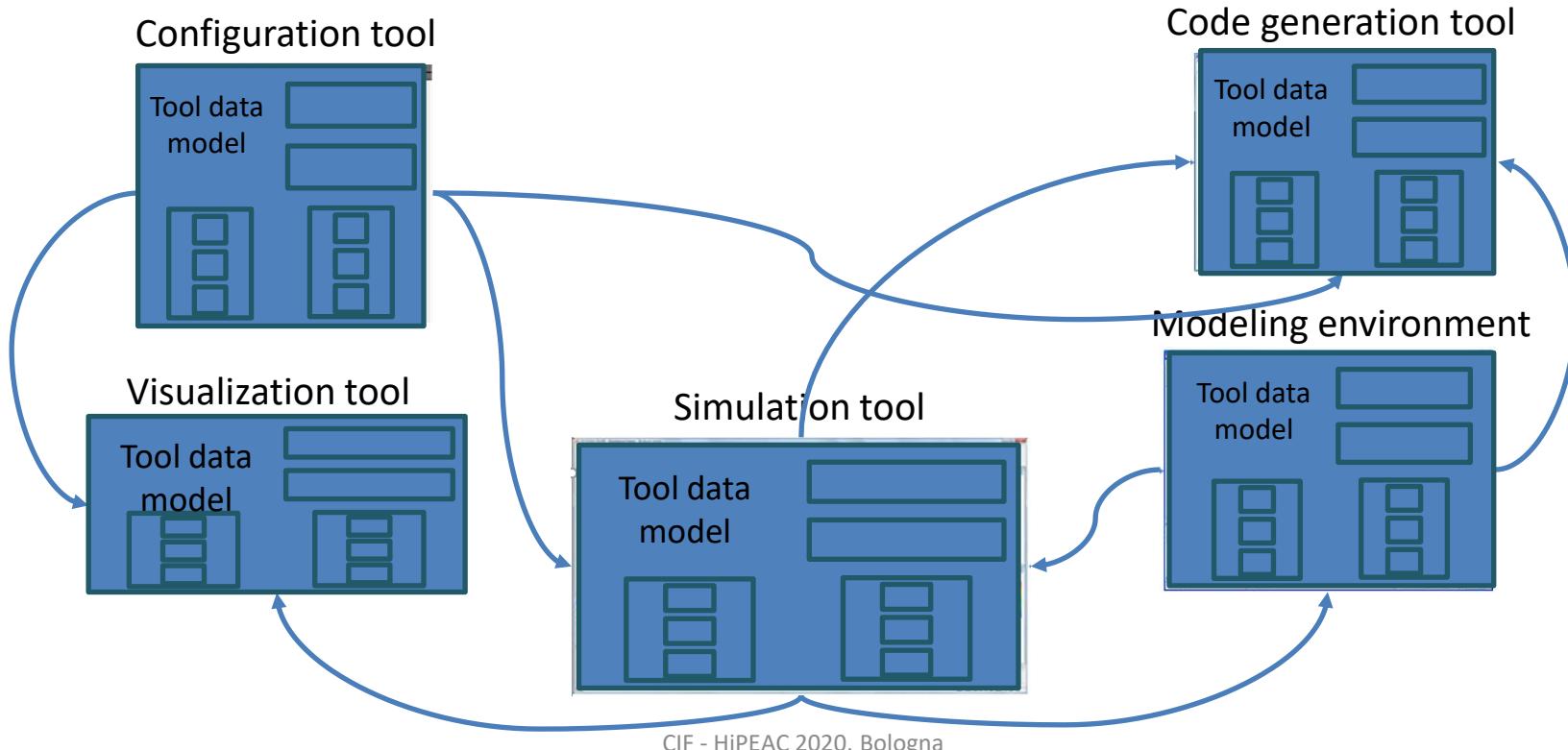


Simulation tool



Modeling environment







Solution 1

- connect your tools building custom data model parsers / transformers



Solution 2

- define common standard



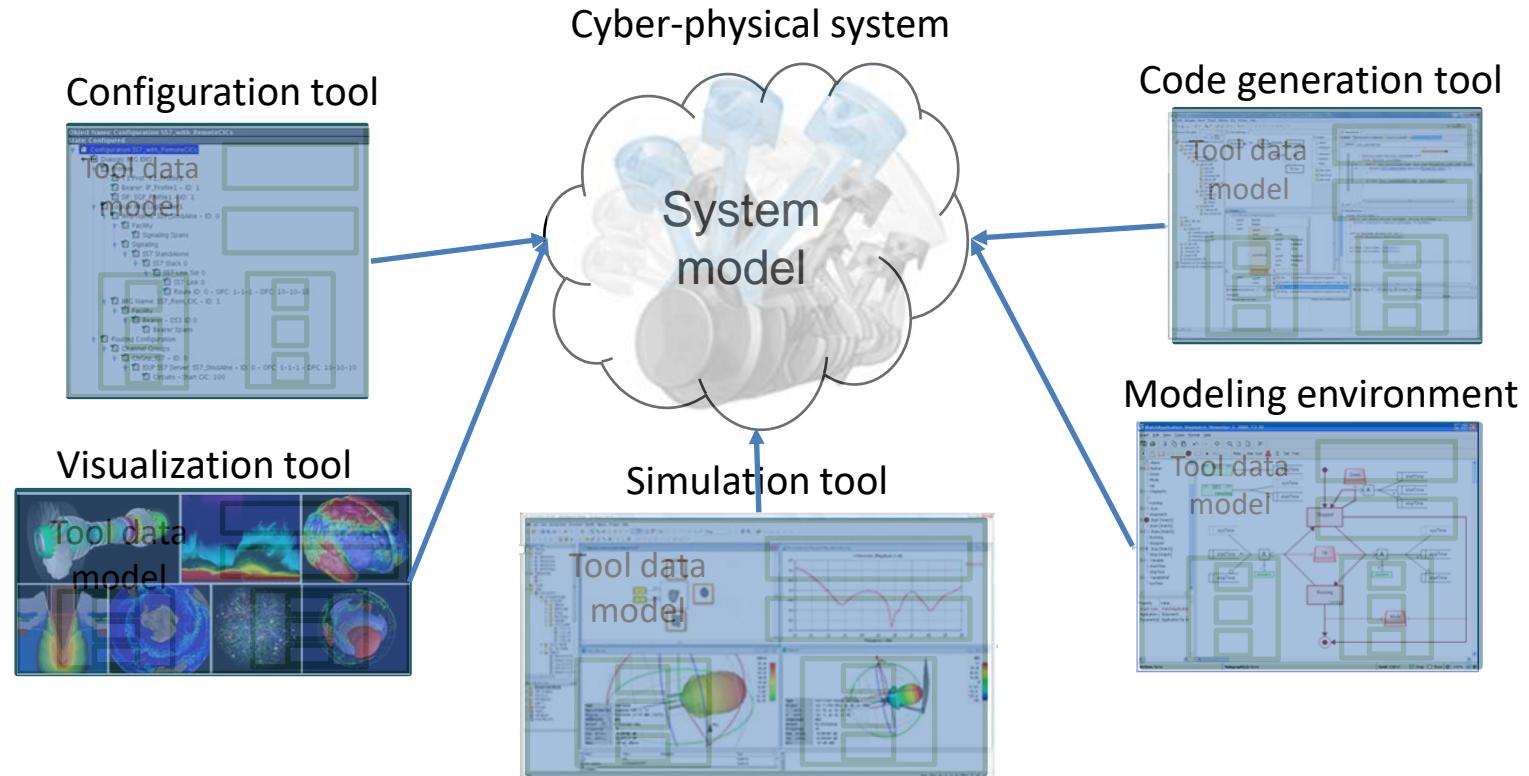


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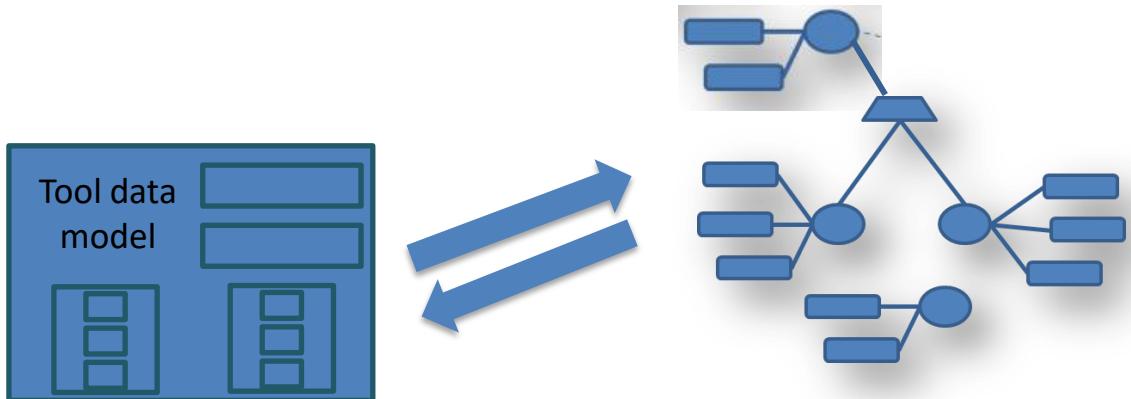
CERBERO Interoperability Framework





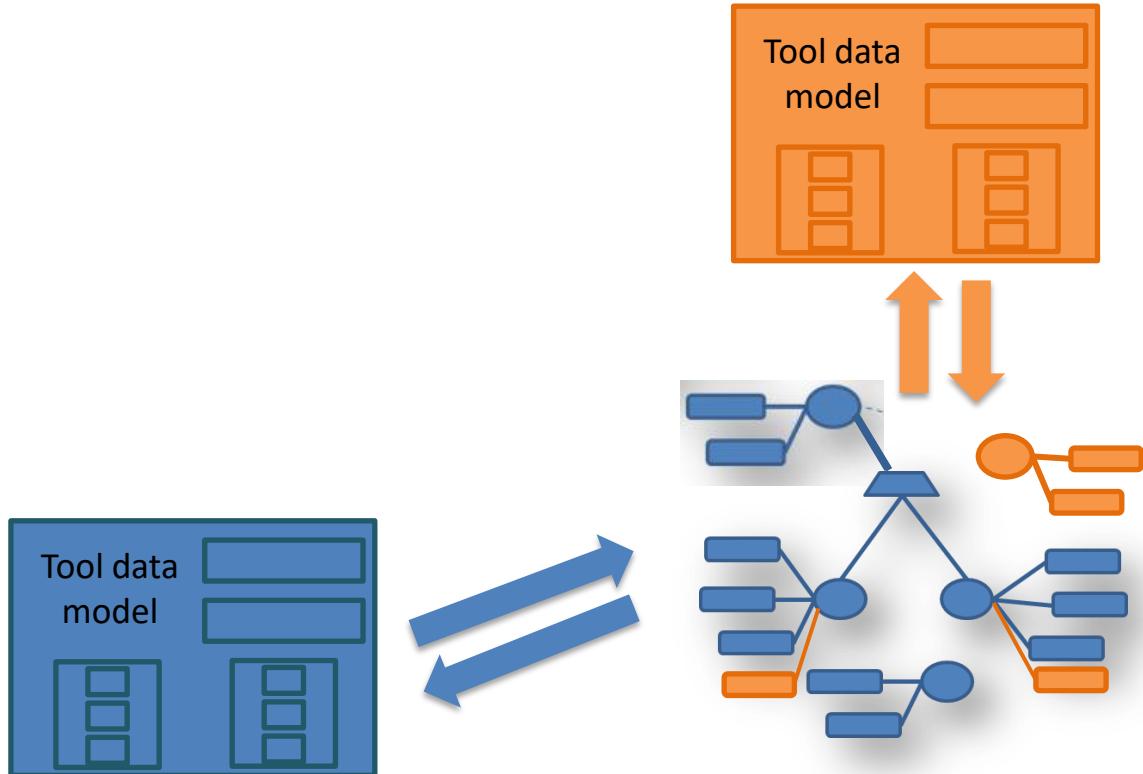


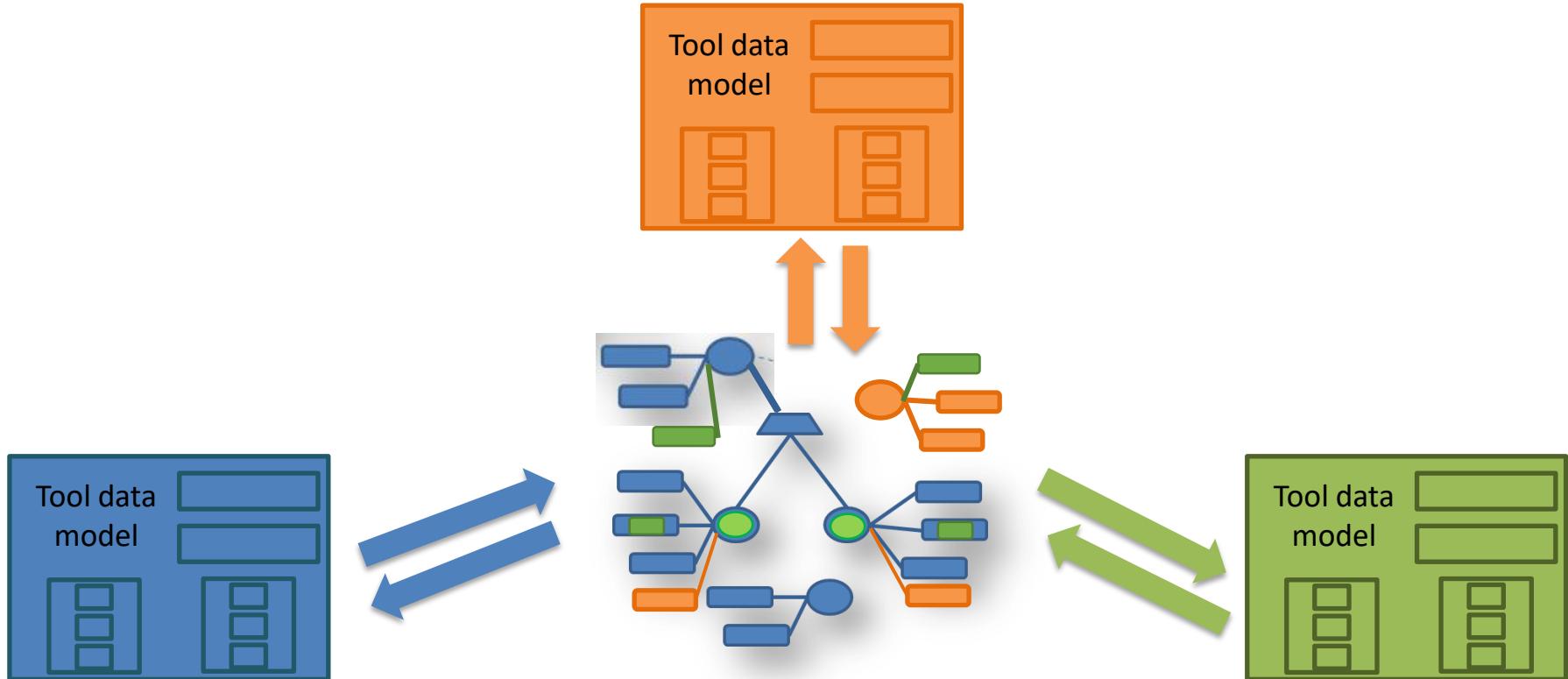
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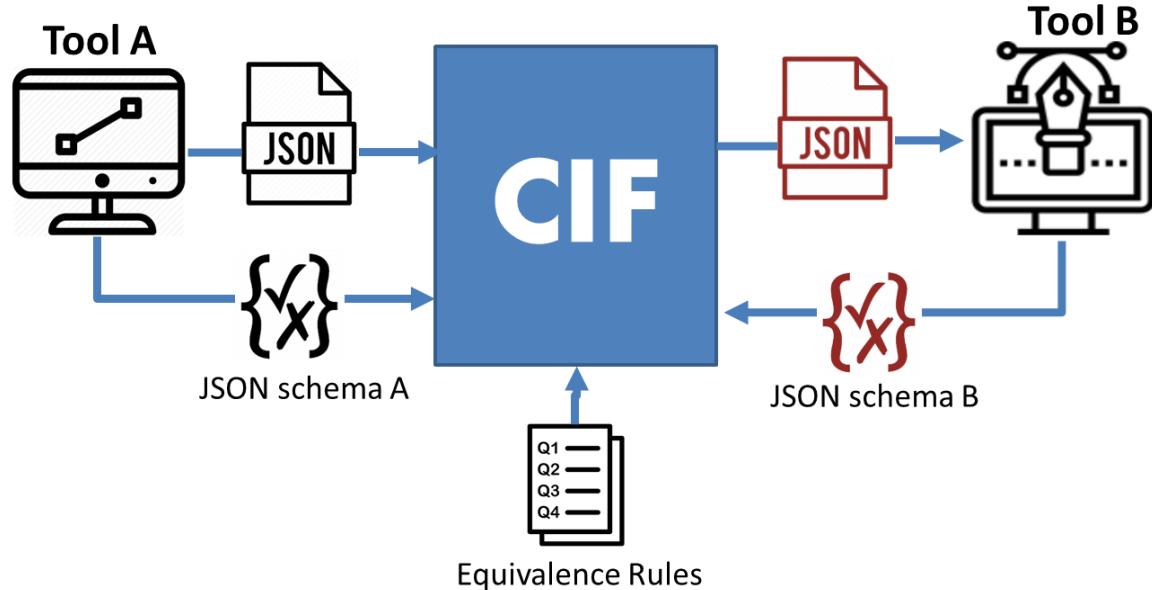




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```
{ "system":  
  { "name": "Car"  
    ,  
     "weight": 2800  
    ,  
     "parts": [ "wheel", "brake"  
    ]  
  }  
}
```

JSON – tool A

```
{ "product": "Car"  
  ,  
   "bill_of_materials":  
     [ { "item": "wheel"  
       , "price": $345  
      ,  
      { "item": "brake"  
        , "price": $108  
      }  
    ]  
  }  
}
```

JSON – tool B

