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| Role Schema: MANUFACTURER |
| Description: Manufacturer role creates products and provides products. |
| Protocols and Activities: CreateProduct, ProvideProducts, AwaitRequest |
| Permissions: **reads supplied** orderDetails //reads request for availableproducts  **geneates** productsList **//** generates list of available products |
| Responsibilities:Liveness: Manufacturer=(CreateProduct)ω||(AwaitRequest.ProvideProducts )ω Safety:  * **true** |

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| Role Schema: INVENTORY |
| Description: Inventory keeps list of available products. |
| Protocols and Activities: AvailabilityRequest, ProvideProductsAvailability, ReadProductsOrder, GetProducts, UpdateProductsList |
| Permissions: **reads supplied** productsOrder //reads products  **supplied** newProductsList //reds new products list  availableProducts //reads currently available items  **changes** availableProducts //updates list of available items  **geneates** availableProducts //initially generates list of available //products |
| Responsibilities:Liveness: Inventory = (AvailabilityRequest . ProvideProductsAvailability )ω ||[ReadProductsOrder.GetProducts .UpdateProductsList] ω Safety:  * infoAvailable(availableProducts) |

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| Role Schema: PRICING |
| Description: Pricing role tells a price of a selected product. |
| Protocols and Activities: ICNPResponce, checkProductAvailability, calculatePrice |
| Permissions: **reads supplied** productAvailability //checks product availabilty  **geneates** productPrice **//** generates price for a given product |
| Responsibilities:Liveness: Pricing=( checkProductAvailability. calculatePrice. ICNPResponce)ω Safety:  * productsAvailable=0→ price=null |

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