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| Role Schema: MONITORING |
| Description: Monitors the quantity of the products and order from manufacturers when needed. |
| Protocols and Activities: MonitorAvailability, GenerateProductOrder, RequestProducts, InformIncomingProducts |
| Permissions: **reads** availabilityLimit //the lower availability for the product  **supplied** currentAvailability //the availability that the inventory has  **generate** productOrder //the order that will be sent to manufacturer |
| Responsibilities:Liveness: Monitoring = ((MonitorAvailability . [SendOrder])ω  SendOrder = GenerateProductOrder, RequestProducts . InformIncomingProducts Safety:  * availabilityLimit < currentAvailability → productOrder = nil |

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| Role Schema: YELLOWPAGES |
| Description: Accepts subscriptions of “shops”, in order to be able to provide information about the available “shops” and their location. |
| Protocols and Activities: SubsctriptionRequest, SubscribeShop ,AvailableShopsRequest, AvailableShopsResponse |
| Permissions: **reads** **supplied**  shopDetails //the details of a shop that wants to subscribe  **update** shopsList //the availability that the inventory has |
| Responsibilities:Liveness: YellowPages = ((SubsctriptionRequest . SubscribeShop) ||  (AvailableShopsRequest . AvailableShopsResponse))ω Safety:  * infoAvailable(shopDetails) |

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| Role Schema: CUSTOMER |
| Description: The one that wants to buy a product, initializes the whole buy process |
| Protocols and Activities: SubsctriptionRequest, SubscribeShop ,AvailableShopsRequest, AvailableShopsResponse |
| Permissions: **reads** **supplied**  results //the results for the shopping request  **update** customerRequirements //the availability that the inventory has |
| Responsibilities:Liveness: YellowPages = ((SubsctriptionRequest . SubscribeShop) ||  (AvailableShopsRequest . AvailableShopsResponse))ω Safety:  * infoAvailable(shopDetails) |