In the Table 1 outlines the language used for domain and problem modeling in Automated Planning and Scheduling.

Table 1: This table presents the symbolic language.

Predicates
truck_at ($\mathcal{K}_{f,t}$): Defines that truck k is at factory f. **producer_p** ($\mathcal{P}_f$): Defines that factory f is a producer of product p. It is used to determine if factory f can produce the specified product. **truck_available_p** ($z_{f,p,d,f',t,k}$): Defines that truck k is available to transport product p from origin f to destination f'. **producers_share_p**: Defines that the origin factory f and destination factory f' share product p, which can be transformed into p'. It is used to identify whether there is interaction among multiple factories and if both can share the product $\mathcal{P}_p$.
Functions
total_coast: Represents the total cost of the actions performed in the domain. It is used to calculate the cost of the set of actions in the plan, where each action's cost is added to this value after the action is executed. The planner aims to minimize this value. **distance_company**: Used to calculate the transportation cost in days between factories f and f'. The transportation cost is added to the total cost. This cost represents the distance as a numeric value in days $TT_{f,f'}$. **truck_driving**: Represents whether truck t is currently in transit. It is used to identify if a truck is driving and therefore cannot be used to transport a product. If a truck is driving, it must finish its trip before being used to transport a new material. **quarentine_time_p**: Represents the quarantine time for each product TQ_p. It is used to determine how many days the product must remain in quarantine before it can be shipped to the distribution center or another factory. The quarantine time is added to the total cost. **demand_p**: Represents the product demand DM_p, triggered by the distribution center f_5. **producing_p**: Indicates whether factory f is producing product p. It is used to check if factory f is currently producing product p, and thus cannot produce more of the same product until the current production is completed. **truck_capacity_p**: Represents the vehicle's capacity to transport product $CT_{t,p}$, in tons. **capacity_p**: Represents the factory's production capacity in tons for product $CF_{f,p}$. It is used to identify how many tons of each product the factory can produce per day. **stock_p**: Represents the product's stock at the factory $Q_{f,p,d}$. It is used to determine how many tons of the product the factory has in stock that have not yet undergone quarantine.