1 Single robot specs

$$G((battery\_high_i) \rightarrow (X(\neg dock_i \wedge \neg go\_to\_charging\_area_i \wedge \neg stop\_offering\_guidance_i))) \quad (1)$$

$$G((\neg battery\_high_i) \rightarrow (X(\neg undock_i \wedge ((\wedge_{e \in E_2} \neg e) W charging\_i))) \quad (2)$$

where $E_2 = \{go\_to\_playing\_area_i, offer\_to\_play_i, go\_to\_reception\_area, offer\_to\_guide\}$

$$G((reached\_playing\_area_i) \rightarrow (X(\neg go\_to\_reception\_area_i W offer\_to\_play_i))) \quad (3)$$

$$G((reached\_reception\_area_i) \rightarrow (X(\neg go\_to\_playing\_area_i W offer\_guidance))) \quad (4)$$

2 Coordination constraints

$$G((\neg at\_least(\cup_i at\_reception_i \wedge \cup_i going\_to\_reception_i, 1)) \rightarrow (X(\wedge_{e \in E_1} \neg e)) \quad (5)$$

where $E_1 = \{go\_to\_playing\_area_i, offer\_to\_play_i\}$

For each robot i,

$$G(((battery\_high_i \wedge at\_least(\cup_i at\_reception_i \wedge \cup_i going\_to\_reception_i, 1)) \rightarrow (X(\wedge_i \neg stop\_offering\_to\_play_i)) \quad (6)$$

$$G(at\_most(\cup_i at\_reception_i \wedge \cup_i going\_to\_reception_i, 2)) \quad (7)$$