

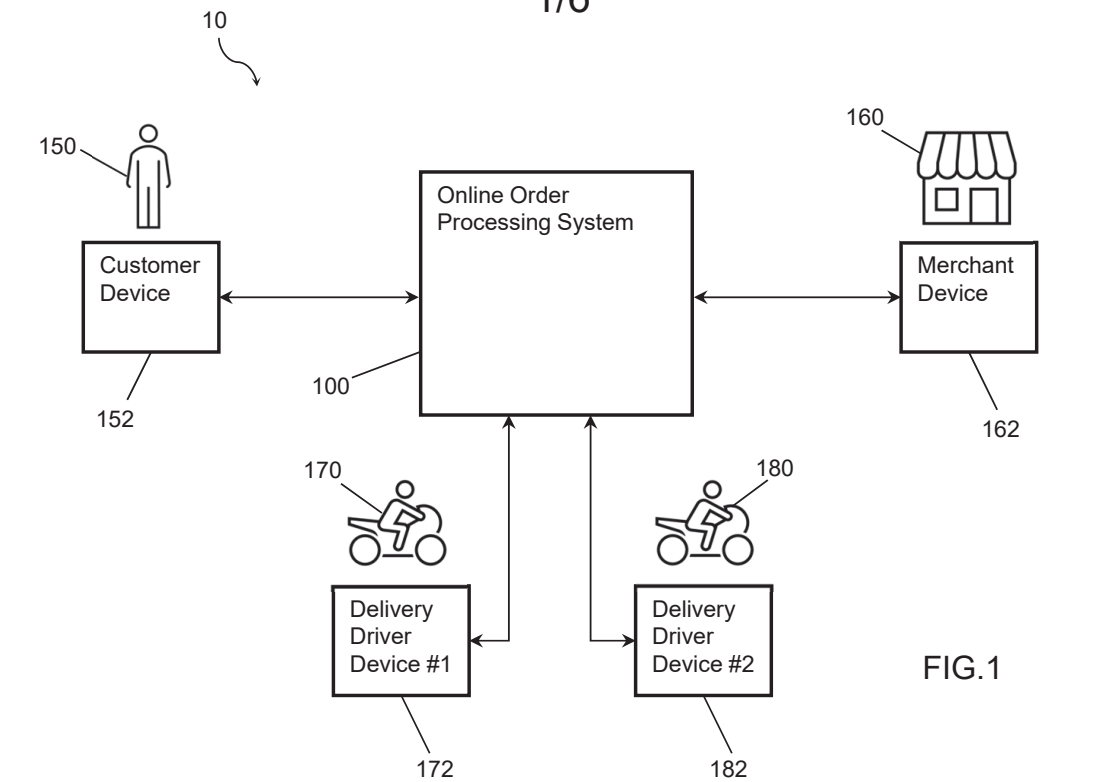


FIG.1

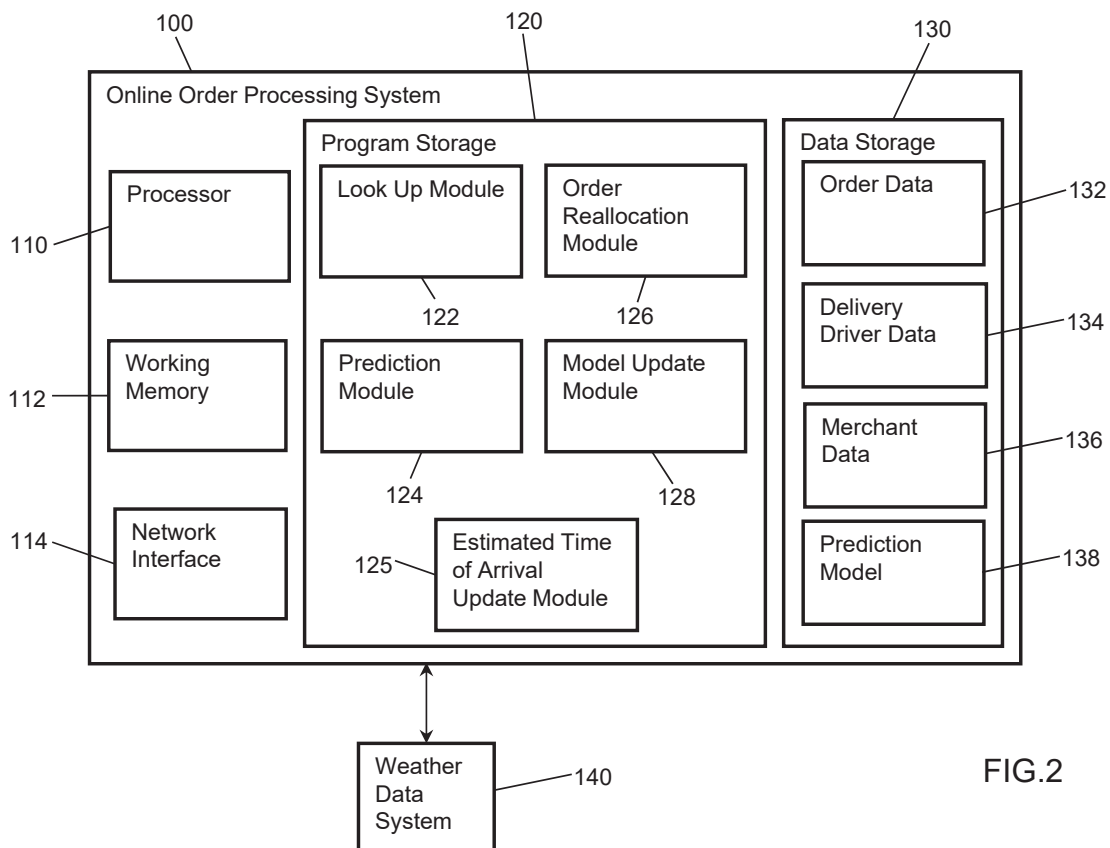
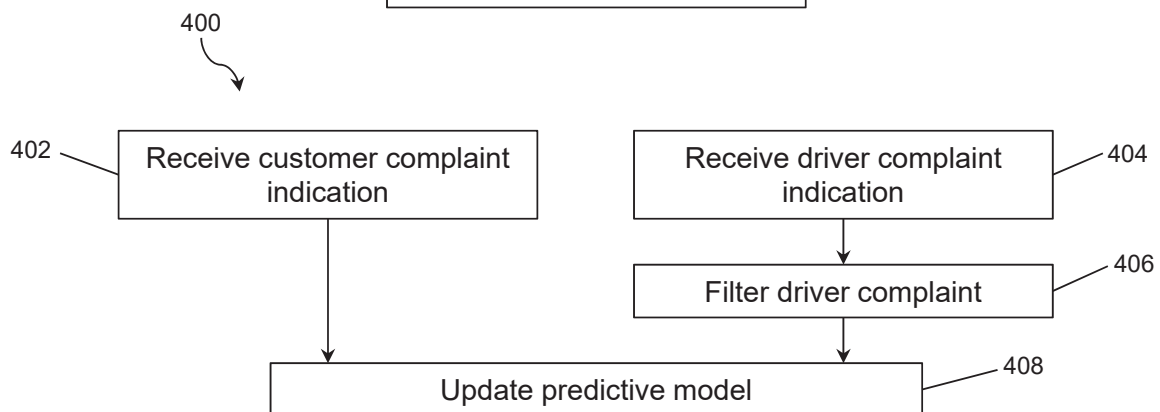
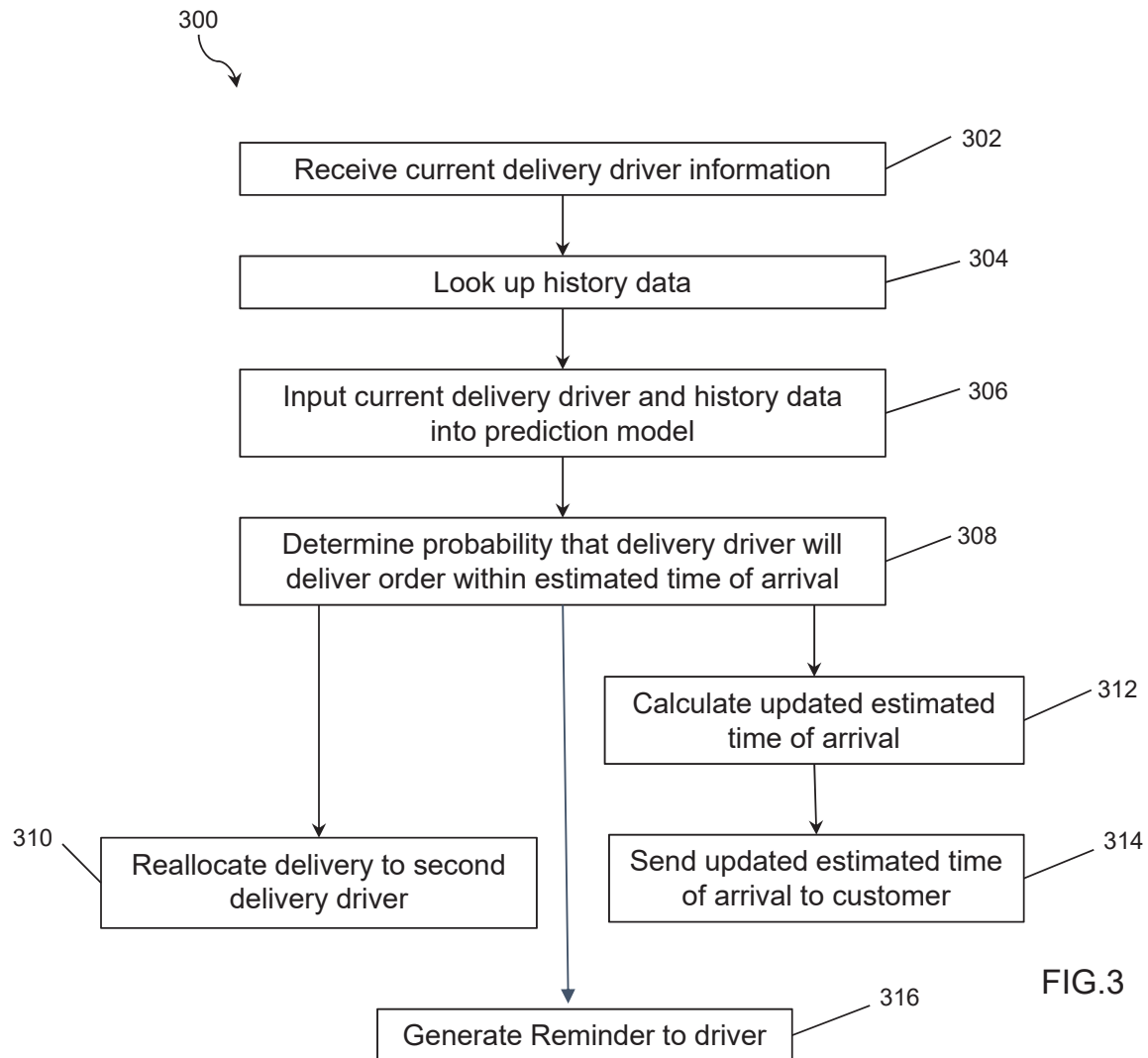


FIG.2



REALTIME FEATURES				
TIME	DRIVER ATTRIBUTES	MERCHANT ATTRIBUTES	ORDER ATTRIBUTES	WEATHER
1. Minutes since driver dispatch 2. Order hour of day 3. Order day of week 4. Order day of month 5. Holiday	1. Distance to merchant 2. Percentage of distance to merchant covered 3. Realtime speed 4. Customer chat messages received 5. Chat messages sent 6. Total chat messages exchanged 7. Driver auto-bid toggle	1. S2 Cell ID 2. Merchant classification (enterprise, SME, etc) 3. Bookings in the merchant S2 cell in the last hour 4. Late cancellation at the merchant in the last hour 5. Merchant name 6. Late cancellation in the merchant S2 cell in the last hour 7. Resto inside point-of-interest 8. Resto bookings in the last hour	1. Total unsubsidized price of order 2. Driver fare w/o surge 3. Distance from merchant to customer 4. Mode of payment 5. Dynamic surge applicable to the order	1. Temperature 2. Wind 3. Humidity 4. Precipitation 5. Pressure 6. Clouds

FIG.5A

BATCH (HISTORIC) FEATURES	
DRIVER ATTRIBUTES	MERCHANT ATTRIBUTES
1. 24-minute driver cancellation rate 2. Percentage of auto-bid orders 3. Avg. seconds to pickup 4. Avg. pickup speed 5. Days since first order 6. Daily percentage idle time 7. Daily avg. online hours 8. Orders assigned 9. Order completion rate (OCR) 10. Late cancellations 11. OCR on auto-bid	1. Order completion rate (OCR) 2. Days since first order accepted 3. Avg. pickup time in merchant S2 cell 4. Avg. pickup speed in merchant S2 cell 5. OCR of merchant S2 cell 6. Late cancellations in merchants S2 cell 7. Service area ID

FIG.5B

Importance Rank	Feature Type	Feature Group	Feature Name
1	Realtime	Time	Booking day of month
2	Realtime	Time	Booking hour of day
3	Realtime	Driver	Distance to merchant
4	Realtime	Driver	Percentage of distance to merchant covered
5	Realtime	Order	Distance from merchant to customer
6	Realtime	Driver	Realtime speed
7	Batch	Driver	24-minute driver cancellation rate
8	Realtime	Merchant	Merchant bookings in the last hour
9	Realtime	Time	Booking day of week
10	Batch	Merchant	Days since first order accepted
11	Realtime	Booking	Total unsubsidized price of booking
12	Realtime	Booking	Driver fare w/o surge
13	Batch	Driver	Avg. seconds to pickup
14	Batch	Driver	Avg. pickup speed
15	Batch	Driver	Daily avg. online hours
16	Realtime	Merchant	S2 Cell ID
17	Realtime	Driver	Customer chat messages received
18	Batch	Driver	Days since first order
19	Batch	Driver	Daily percentage idle time
20	Realtime	Weather	Temperature
21	Batch	Merchant	Order completion rate (OCR)
22	Batch	Driver	Percentage of auto-bid orders
23	Realtime	Weather	Wind
24	Realtime	Merchant	Orders in the merchant S2 cell in the last hour
25	Realtime	Time	Holiday
26	Realtime	Weather	Humidity
27	Batch	Driver	Orders assigned
28	Batch	Merchant	Avg. pickup speed in merchant S2 cell
29	Batch	Merchant	Avg. pickup time in merchant S2 cell
30	Batch	Driver	OCR on auto-bid

FIG.5C

Importance Rank	Feature Type	Feature Group	Feature Name
31	Batch	Merchant	OCR of merchant S2 cell
32	Realtime	Driver	Chat messages sent
33	Batch	Driver	Driver order completion rate (OCR)
34	Realtime	Driver	Minutes since driver dispatch
35	Realtime	Weather	Precipitation
36	Realtime	Weather	Pressure
37	Realtime	Weather	Clouds
38	Batch	Merchant	Late cancellations in merchant S2 cell
39	Realtime	Merchant	Merchant classification (enterprise, SME, etc)
40	Realtime	Driver	Total chat messages exchanged
41	Realtime	Order	Mode of payment
42	Batch	Merchant	Service area ID
43	Realtime	Order	Dynamic surge applicable to the order
44	Realtime	Driver	Driver auto-bid toggle
45	Realtime	Merchant	Late cancellation at the merchant in the last hour
46	Batch	Driver	Late cancellations
47	Realtime	Merchant	Merchant Identifier
48	Realtime	Merchant	Late cancellation in the resto S2 cell in the last hour
49	Realtime	Merchant	Merchant inside point-of-interest

FIG.5C

SCENARIO 1 MODEL OUTPUT (SCORE) = 0.06 DECISION: ORDER STAYS WITH THE CURRENT DRIVER	
Booking day of month	3
Booking hour of day (UTC)	0
Distance to merchant (km)	0.75
Percentage of distance to merchant covered	62%
Distance from merchant to customer (km)	1.6
Realtime speed (km/h)	8
24-minute driver cancellation rate	0.5%
Merchant bookings in the last hour	3
...	
Late cancellation in the merchant S2 cell in the last hour	0
Merchant inside point-of-interest	NO

FIG.6A

SCENARIO 2 MODEL OUTPUT (SCORE) = 0.97 DECISION: ORDER PASSED TO ANOTHER DRIVER	
Booking day of month	3
Booking hour of day (UTC)	4
Distance to merchant (km)	3.02
Percentage of distance to merchant covered	0.2%
Distance from merchant to customer (km)	8.4
Realtime speed (km/h)	2.2
24-minute driver cancellation rate	7.3%
Merchant bookings in the last hour	16
...	
Late cancellation in the merchant S2 cell in the last hour	5
Merchant inside point-of-interest	YES

FIG.6B