

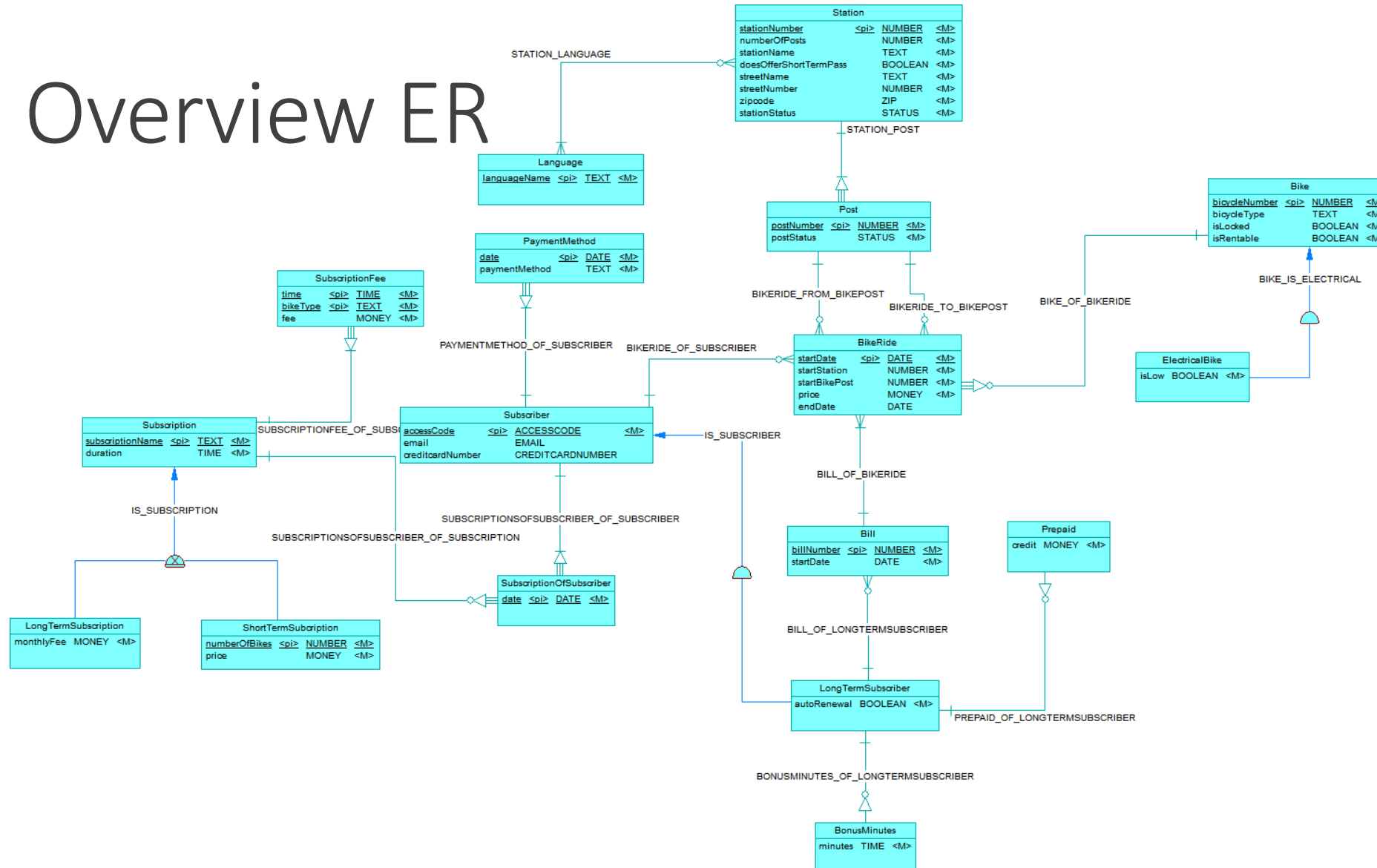
Vélib' Métropole

JASMIJN BARTELDs, JAN HENDRIK HILLE, ERIK KNAAKE, SABRINA
TREBING & BARIS URHAN

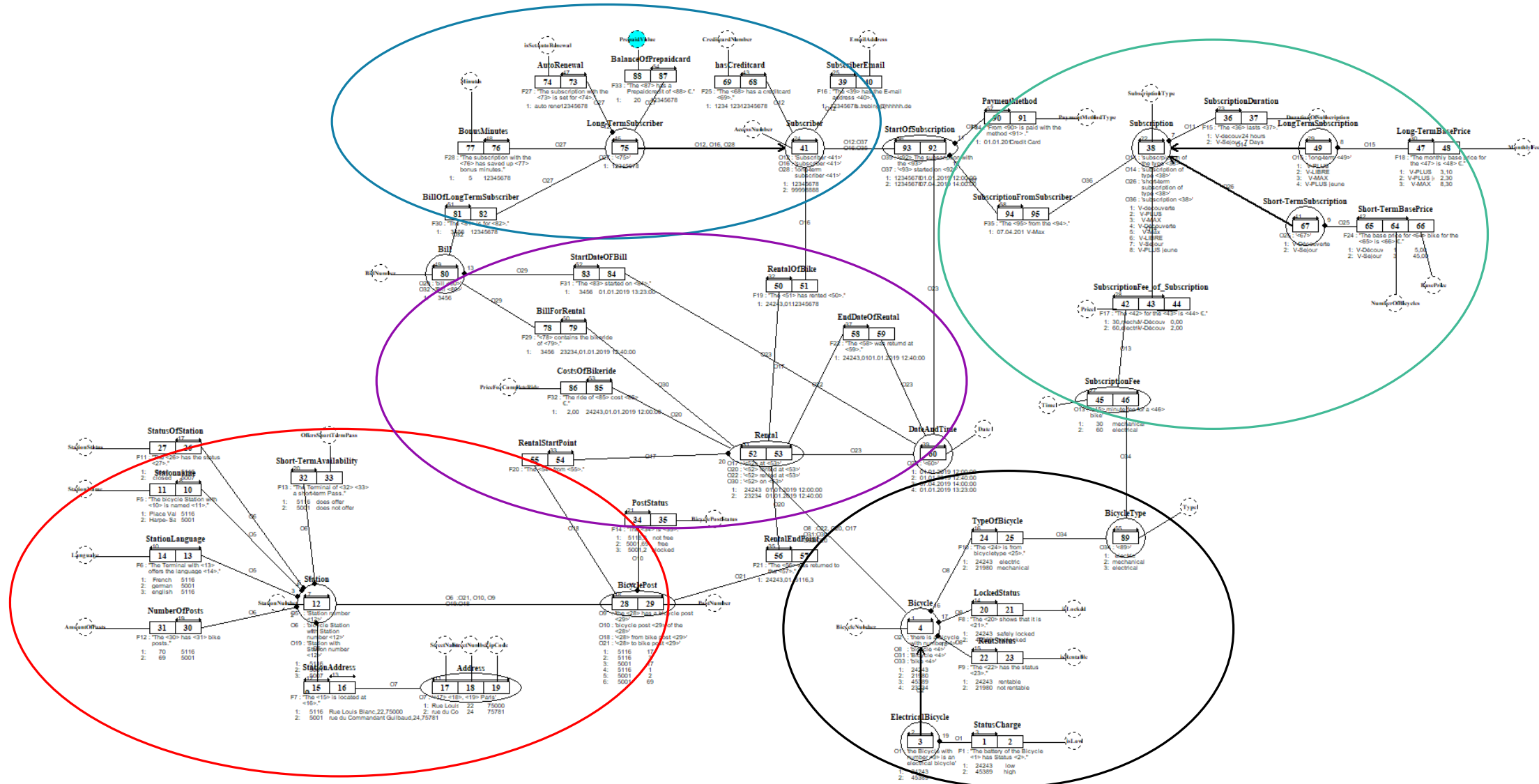
Agenda

- Overview
- Business rules
- Verbalization & Analysis
- FCO-IM & ER Model
- Work process and experiences

Overview ER



Overview FCO-IM



Business rules

- If the battery of a bike is low and it is parked in a bike post, the bike must be locked
- A subscriber can only save and use bonus minutes if the subscription is of type 'V-Plus' or 'V-Max'
- A subscriber can only have one active subscription
- A bike can't be taken if the bike post is blocked
- All bike posts on a station should be blocked if a station is closed
- If a bike is blocked at a post or being repaired at a workshop, it can't be rented

Verbalization & Analysis

There is a subscriber with access code 12345678

ET Subscriber

ID Att accessCode

The subscriber with access code 12345678 has the E-mail address s.trebing@outlook.com

ET Subscriber

Att email

Match

The Subscriber with subscriber access code 12345678 has a prepaid card with number 12345678.

ET LongTermSubscriber

ET Prepaid

ID: ET Subscriber

ID: ET LongTermSubscriber

RT Prepaid_OF_LongTermSubscriber between Prepaid (dependent) and LongTermSubscriber

RT LongTermSubscriberOfSubscriber between Subscriber and LongTermSubscriber (dependent)

The long-term subscription with the subscriber access code 12345678 is set for auto renewal

ET LongTermSubscriber

Att autorenewal

MATCH

The long-term subscription with the subscriber access code 12345678 has saved up 5 bonus minutes

ET BonusMinutes Att minutes

ID: ET LongTermSubscriber

RT BonusMinutesOfLongTermSubscriber between BonusMinutes (dependent) and LongTermSubscribers.

The subscription V-MAX from the subscriber with access code 12345678 started on 07.04.2019 14:00

ET SubscriptionOfSubscriber

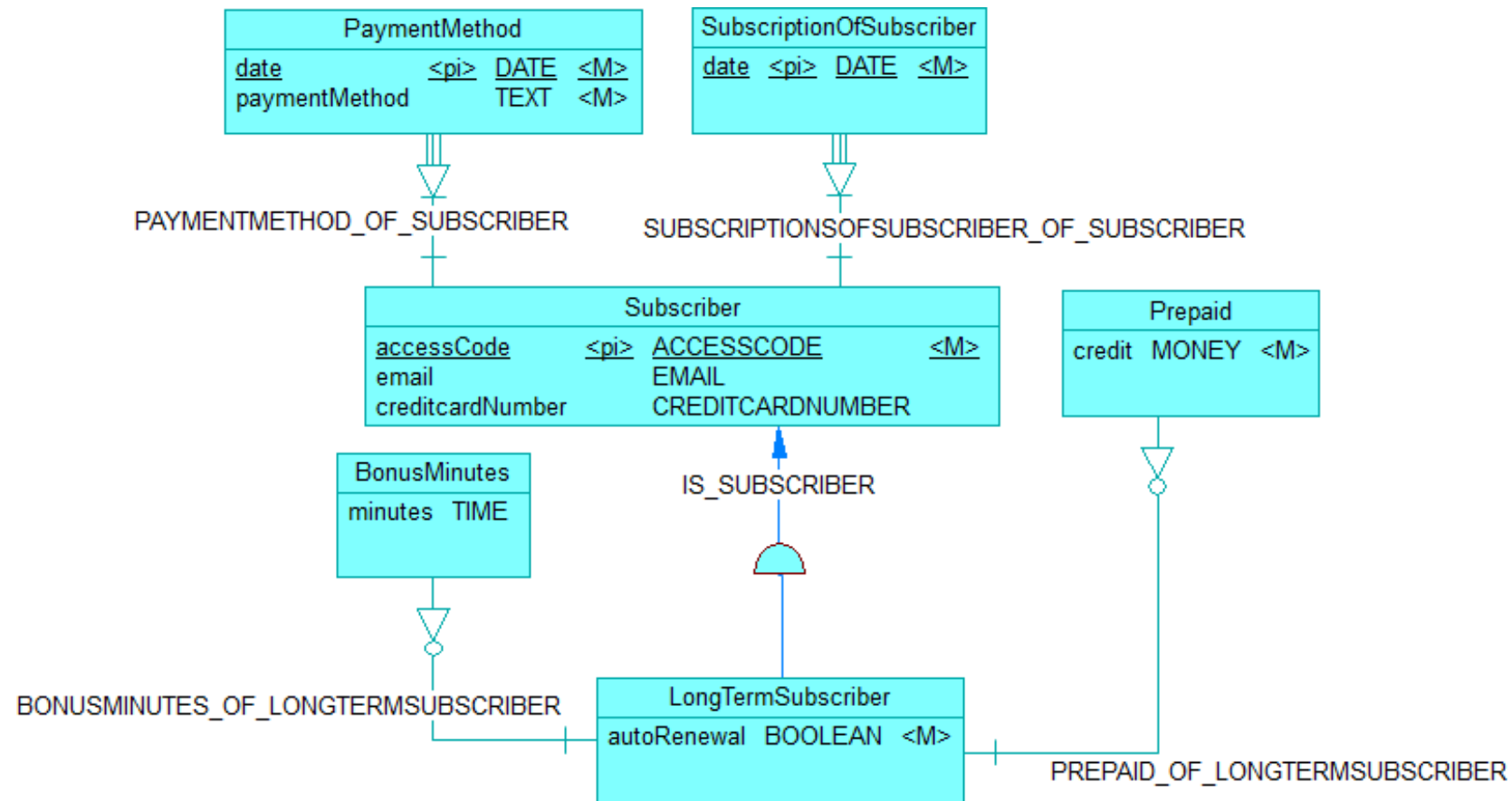
ID: ET Subscriber + ET Subscription + Att date

The subscriber 12345678 has the payment method credit card since 01.01.2019

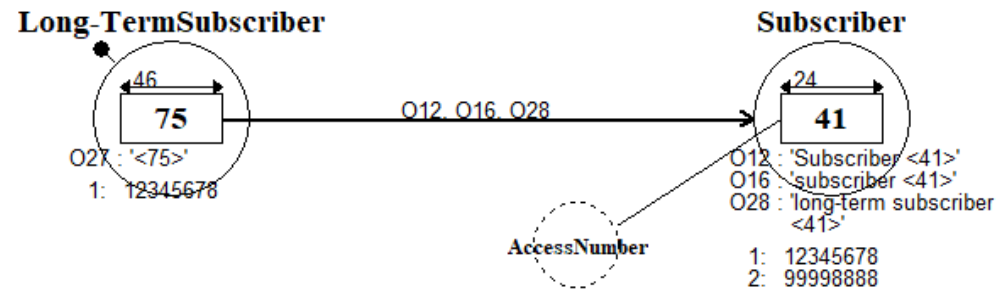
RT SubscriptionsOfSubscriber_Of_Subscriber between SubscriptionOfSubscriber (dependent) and Subscriber

RT SubscriptionsOfSubscriber_Of_Subscription between SubscriptionOfSubscriber (dependent) and Subscription

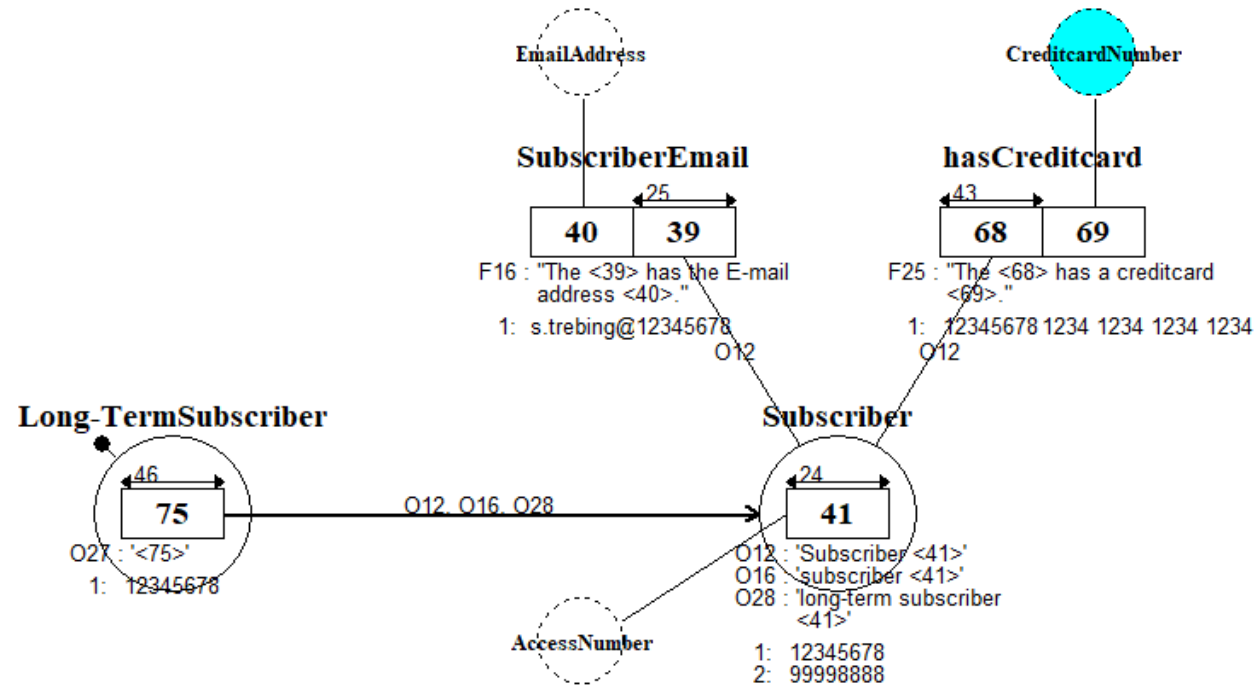
ER Model of subscribers



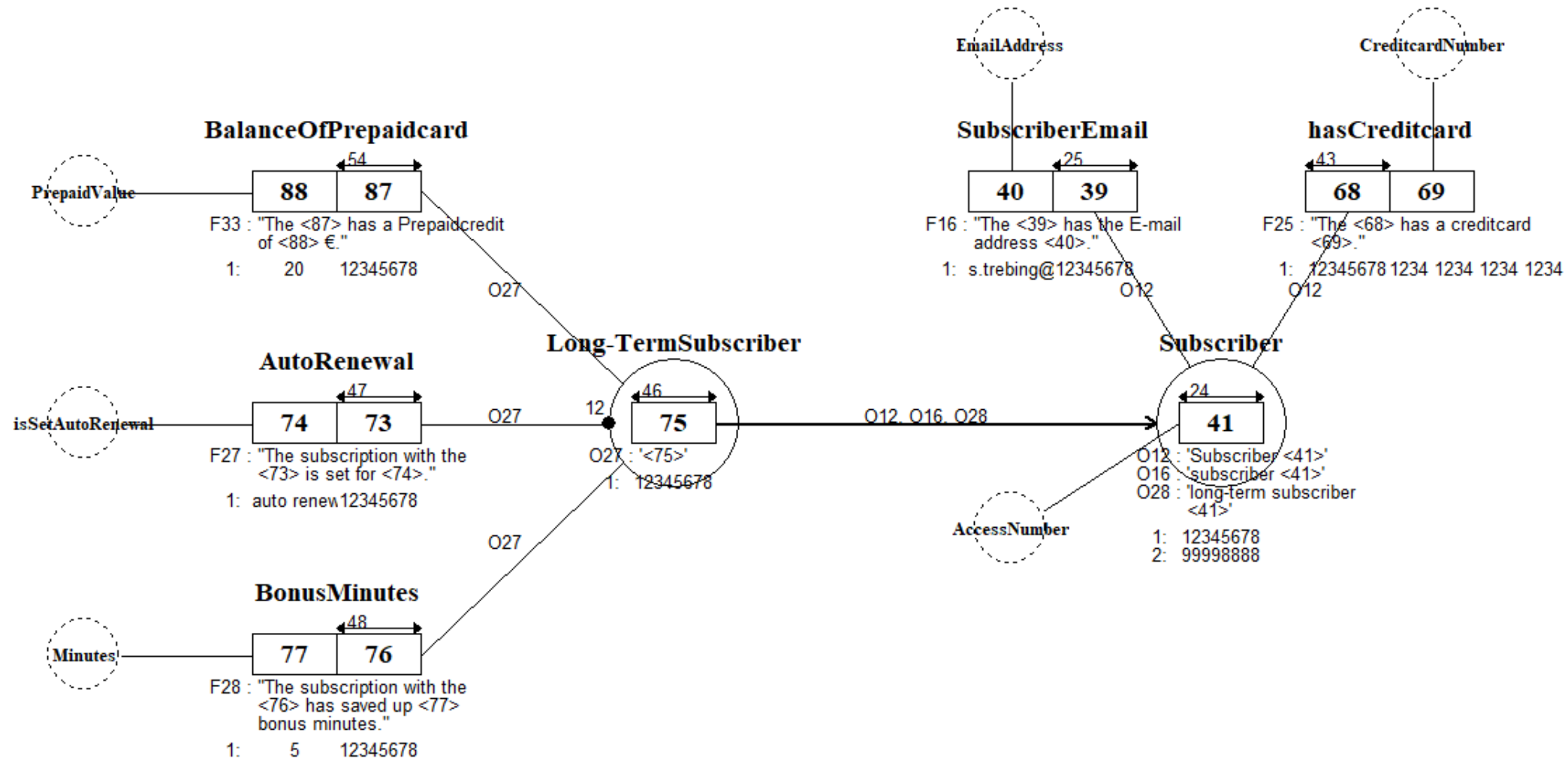
FCO-IM Model of subscribers



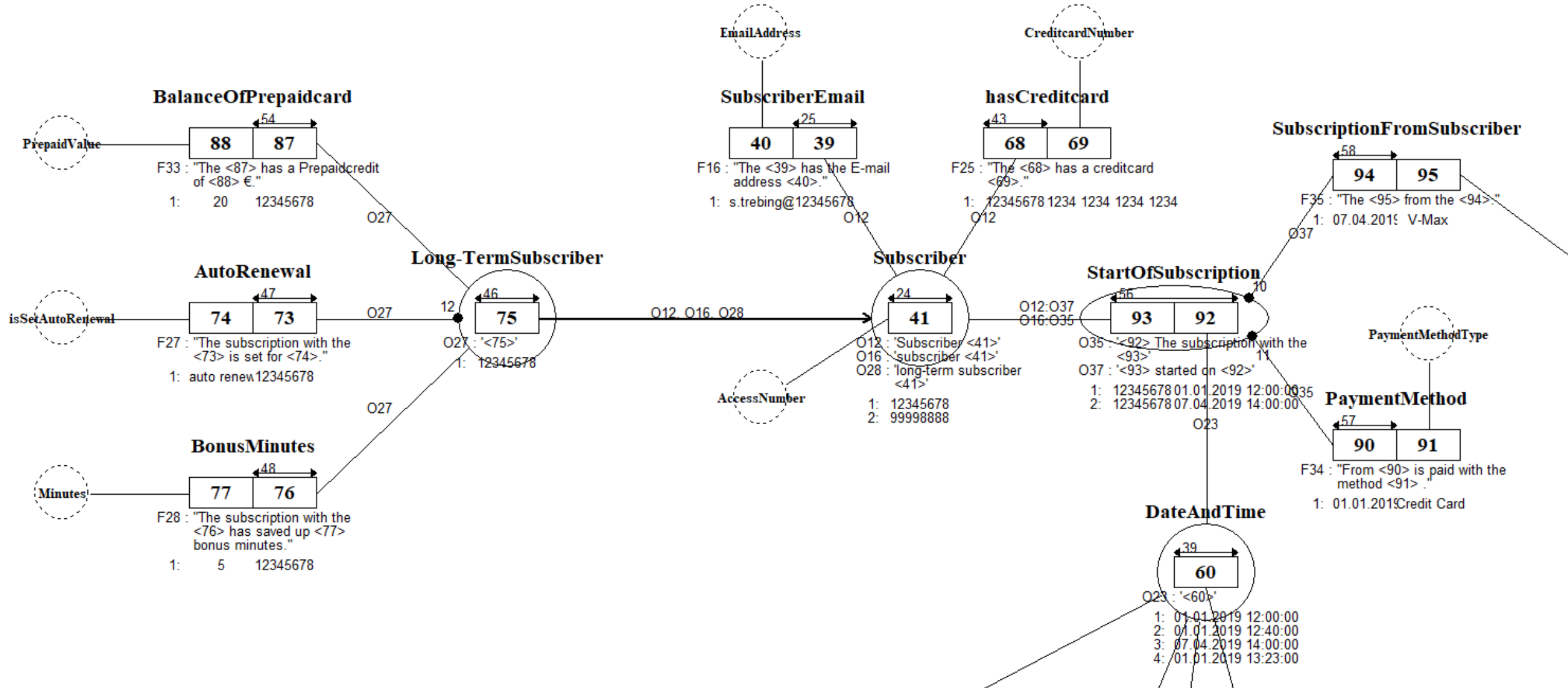
FCO-IM Model of subscribers



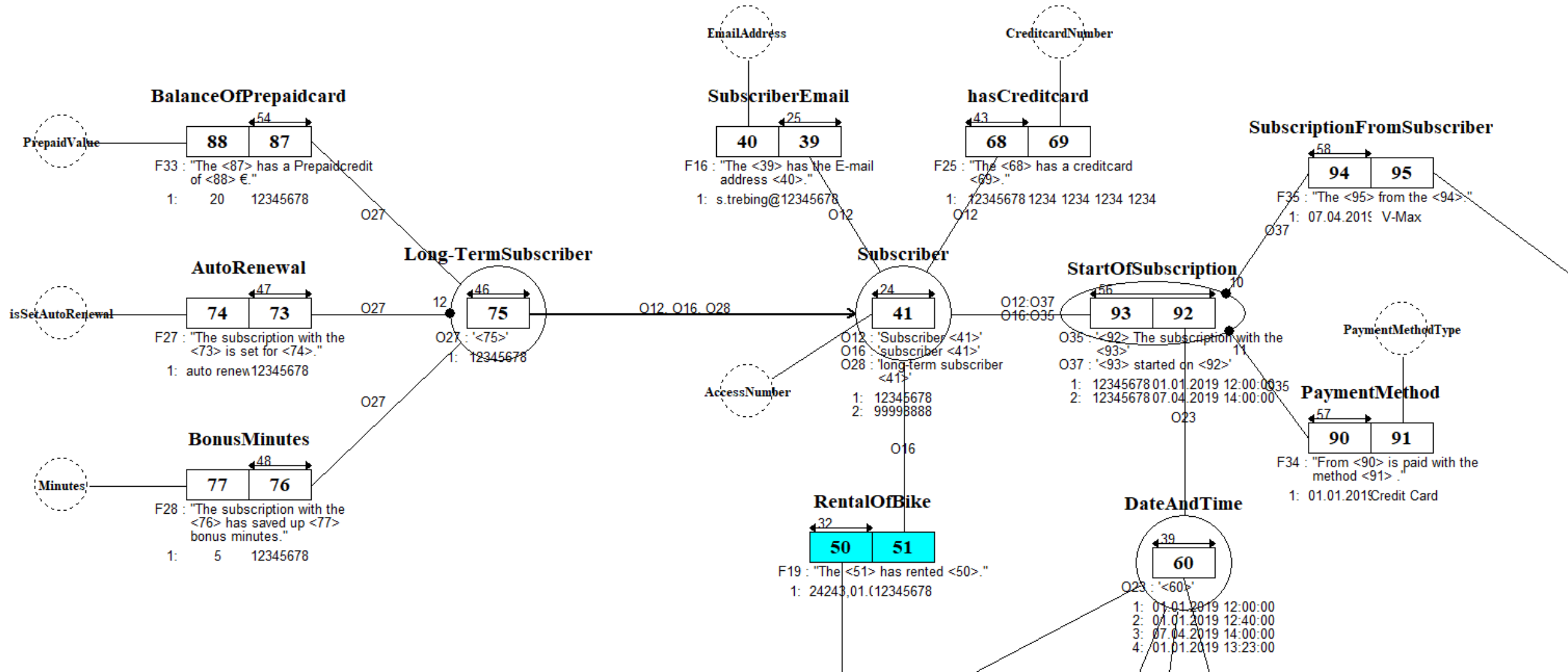
FCO-IM Model of subscribers



FCO-IM Model of subscribers



FCO-IM Model of subscribers



Bike rides verbalization & analysis

The bike post 8 of the station with station number 5001 is blocked.

ET Post

Att postStatus

The subscriber access code 12345678 has rented bike with number 24243 at 01.01.2019 12:00.

ET BikeRide

Att startDate

ID: ET Bike + ET Subscriber

RT BikeRide_OF_Subscriber between BikeRide and Subscriber

RT Bike_OF_BikeRide between Bike and BikeRide(dependent)

Bike with number 24243 rented at 01.01.2019 12:00 from Station with number 5001 from bike post 17.

ET BikeRide

Att startStation

Att: startBikePost

MATCH

RT BikeRide_FROM_STATION between BikeRide and Station.

RT BikeRide_FROM_BIKEPOST between BikeRide and BikePost.

Bike with number 24243 rented at 01.01.2019 12:00 was returned at 01.01.2019 12:40.

ET BikeRide

Att: startDate

Att endDate

MATCH

Bill

There is a Bill with bill number 3456.

ET Bill
ID ATT billNumber

The Bill with bill number 3456 is for long-term subscriber with subscriber access code 12345678.

ET Bill
MATCH

ET LongTermSubscriber
MATCH

RT BILL_OF_LONGTERMSUBSCRIBER between Bill and LongTermSubscriber

The bill with bill number 5637 started on 01.01.2019.

ET Bill
MATCH

Att: startDate

Bill with bill number 3456 contains the bikeride of the bike with number 23234 on 01.01.2019 12:40.

ET Bill
MATCH

ET BikeRide
MATCH

RT: BILL_OF_BIKERIDE between Bill and BikeRide.

Bike & electrical bike

There is a bicycle with bicycle number 21980.

ET Bike
ID: Att bicycleNumber

The bicycle with bicycle number 24243 is from bicycletype electric.

ET Bike Att bicycleType
MATCH

The bicycle with bicycle number 21980 shows that it is unlocked.

ET BIKE Att isLocked
MATCH

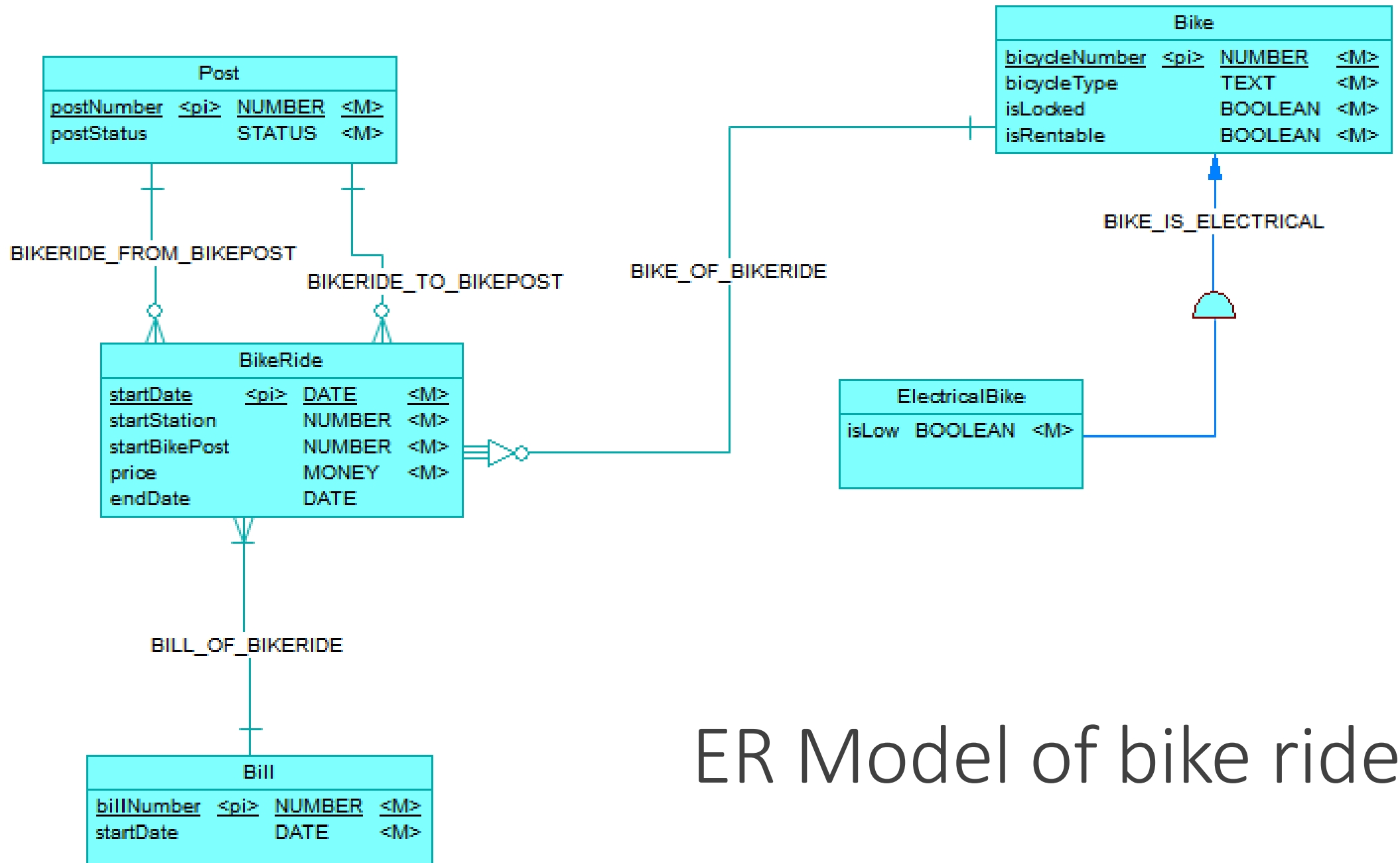
The electric bicycle with bicycle number 24243 has a low battery.

ET ElectricalBike Att isLow
ID: ET Bike

RT BIKE_IS_ELECTRICAL between Bike and ElectricalBike (dependent)

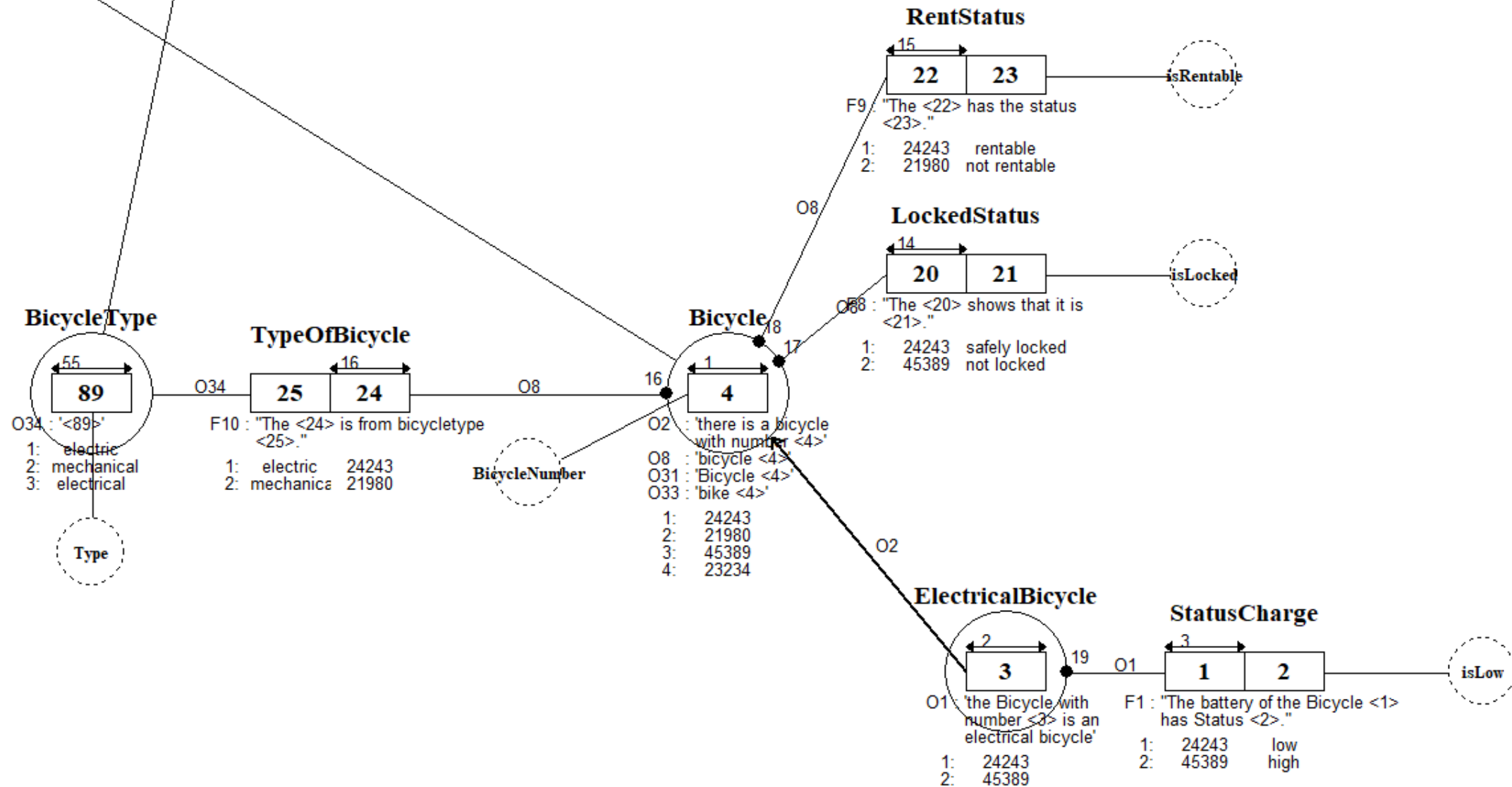
The bicycle with bicycle number 24243 has the status rentable.

ET Bike Att isRentable

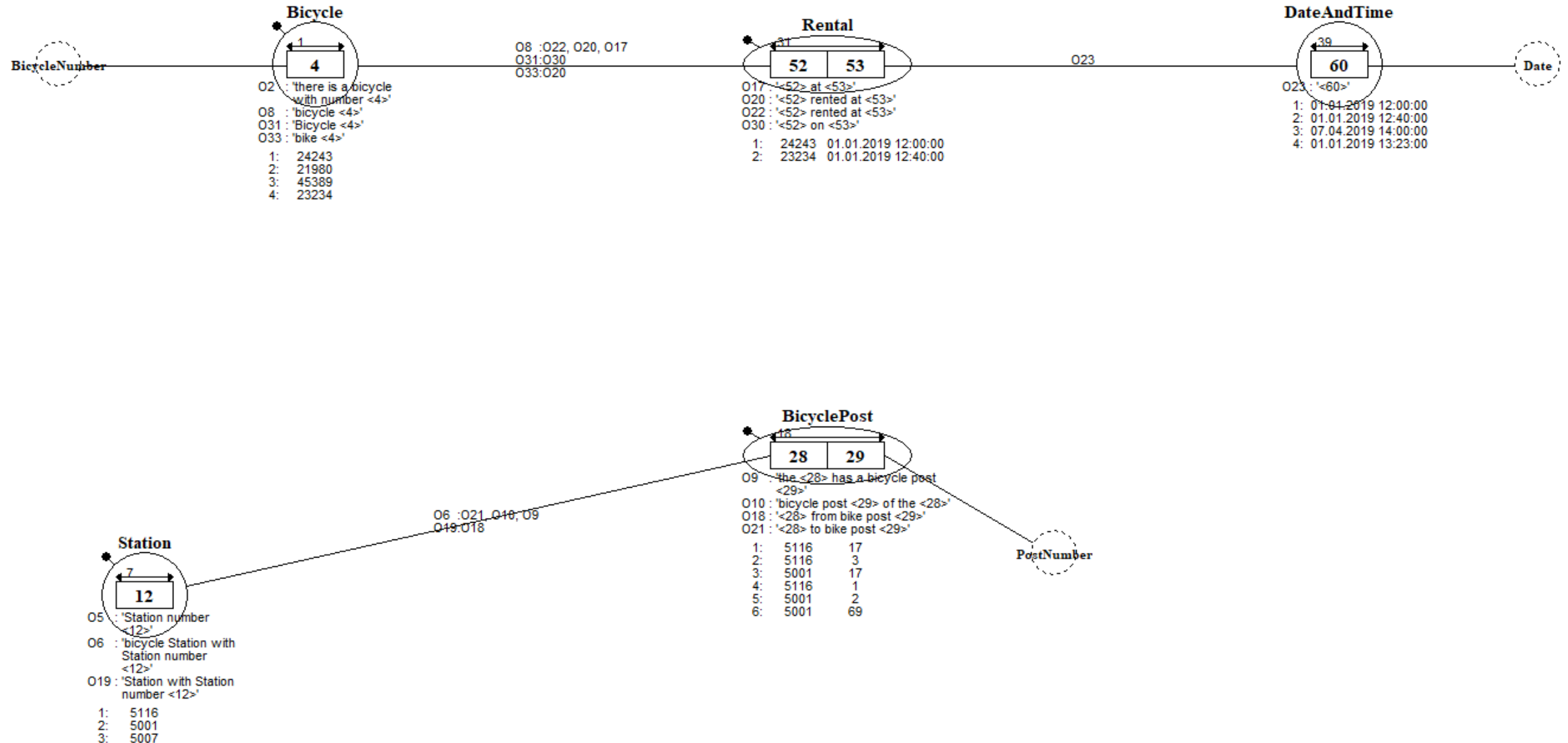


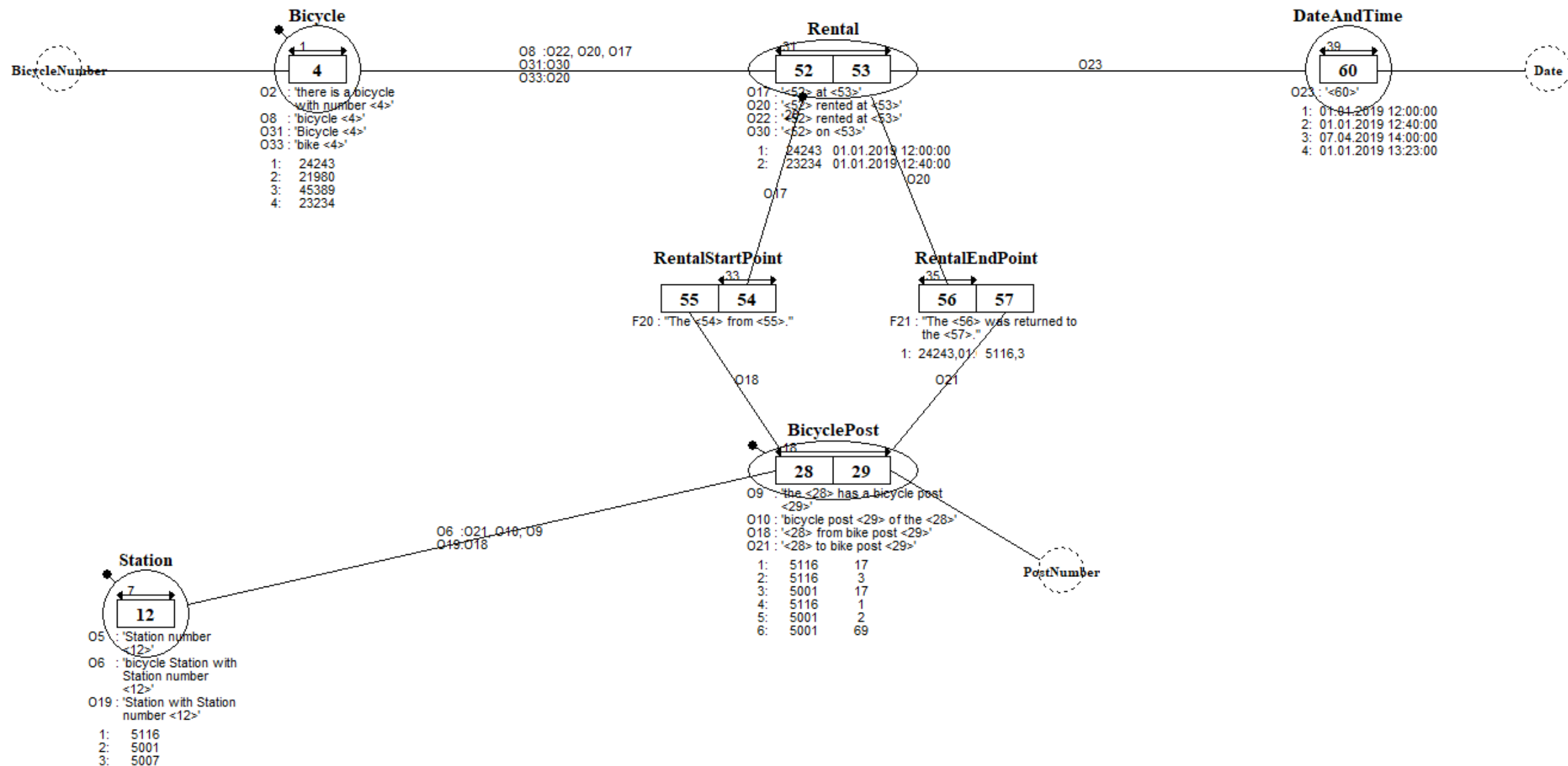
ER Model of bike rides

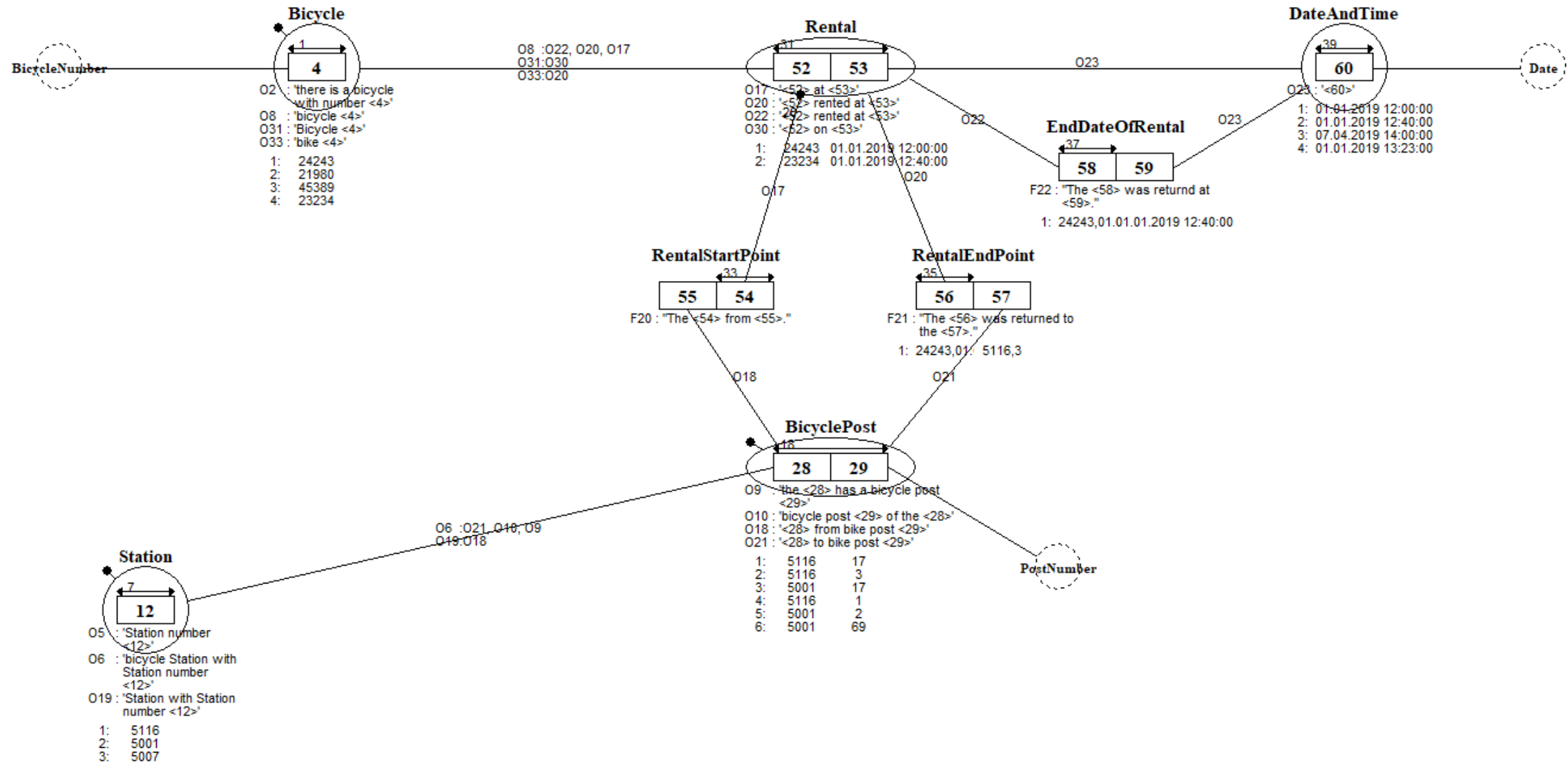
FCO-IM Model of bikeride/rental

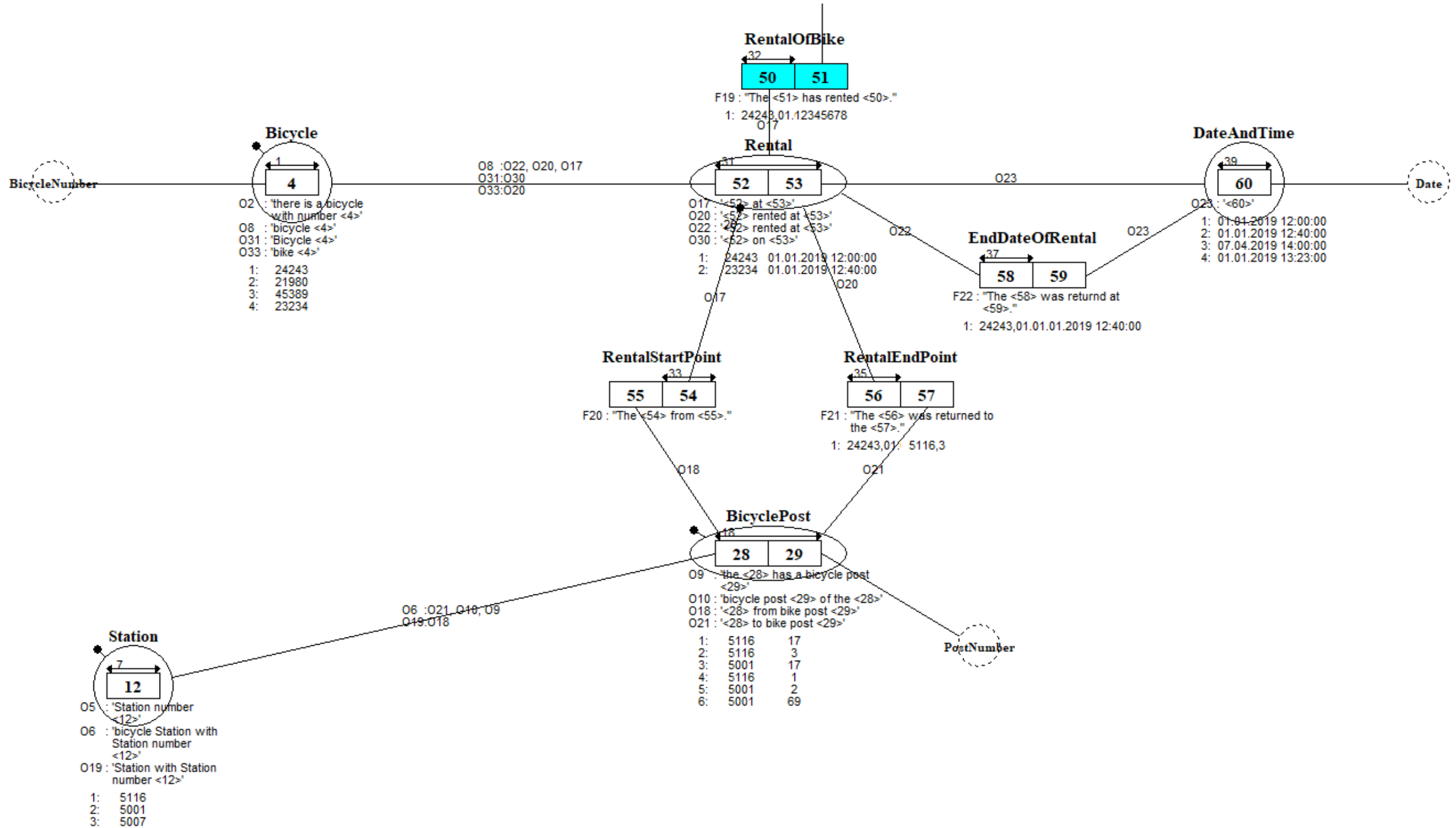


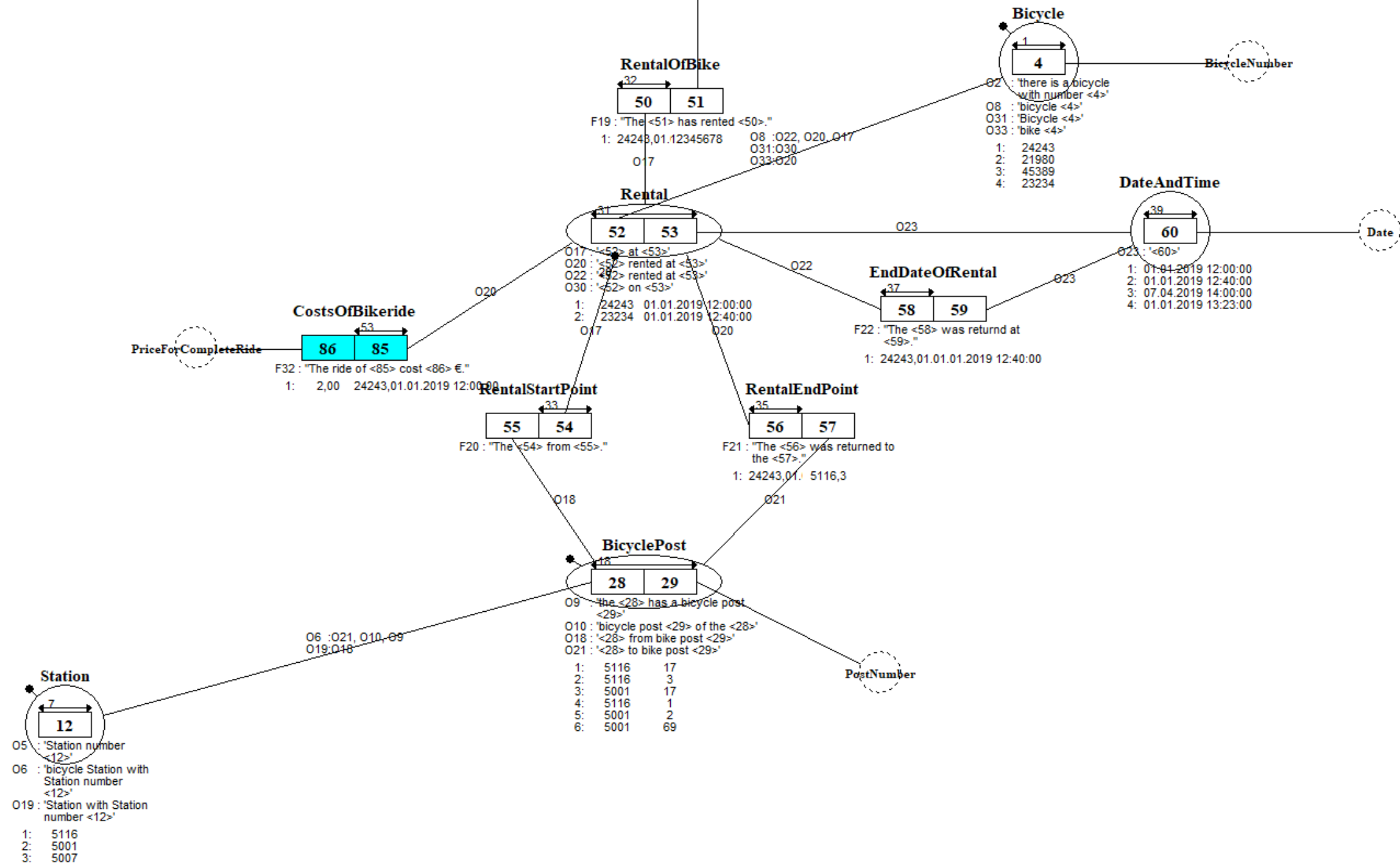
FCO-IM Model of bikeride/rental

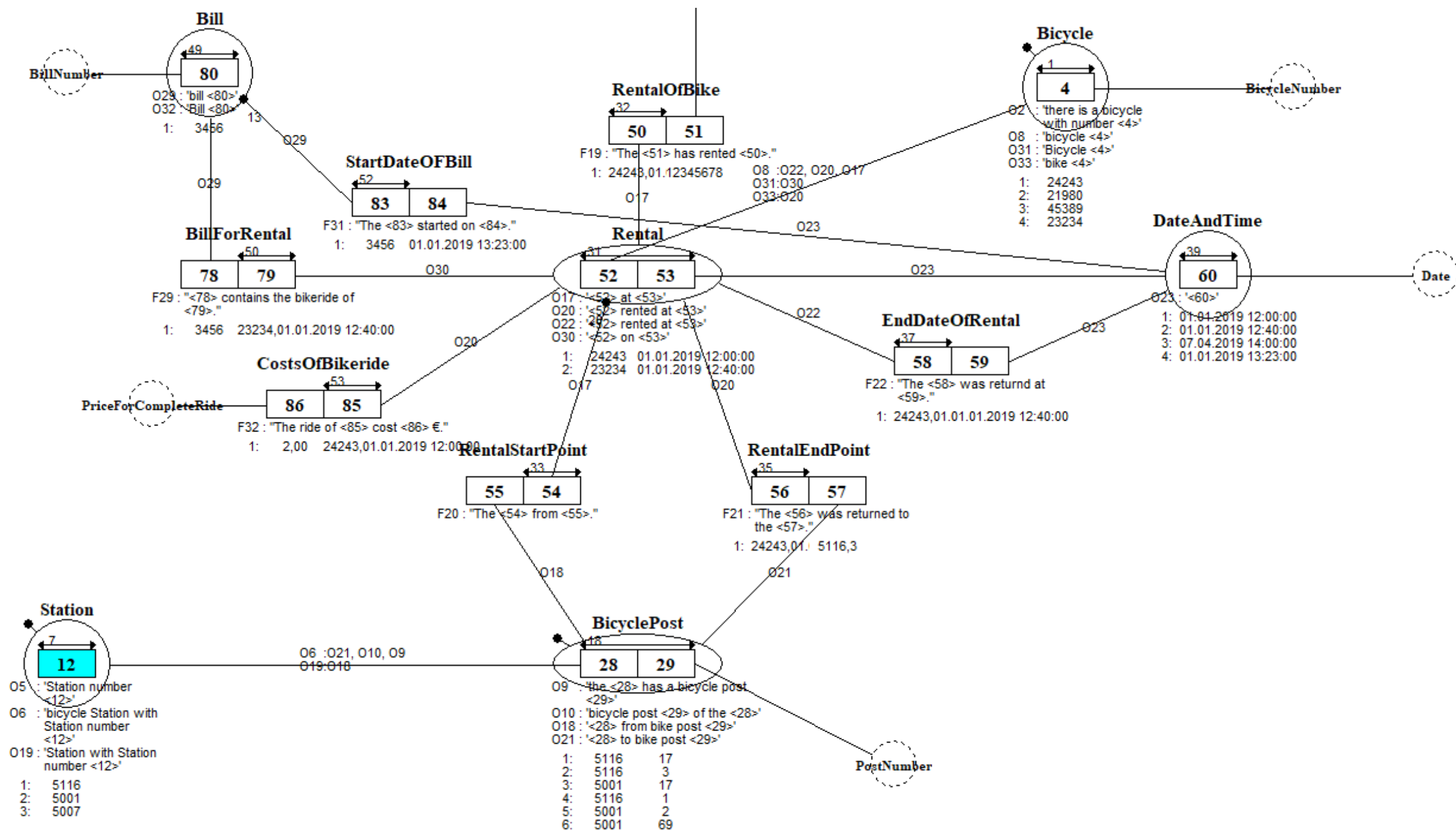


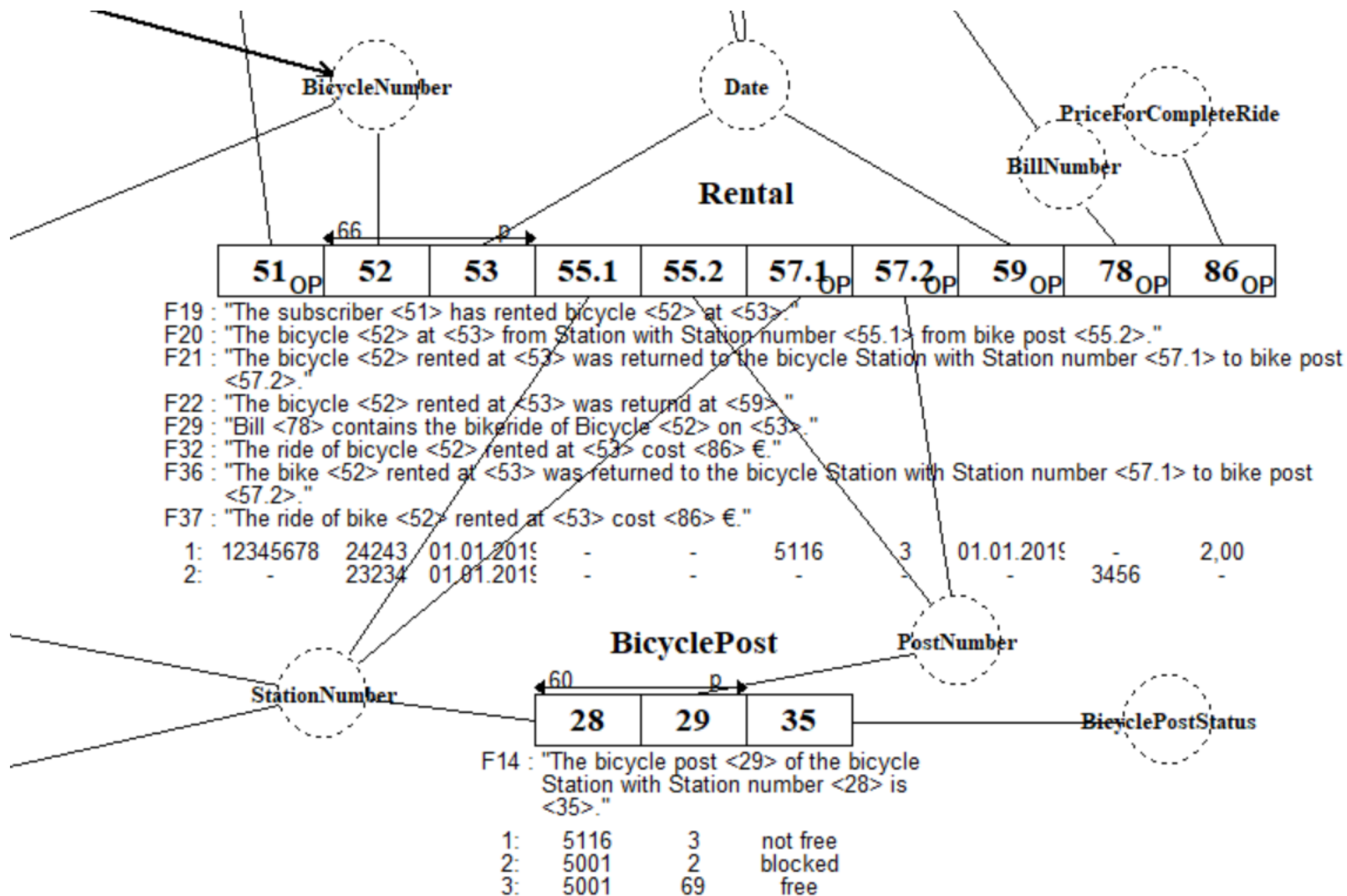


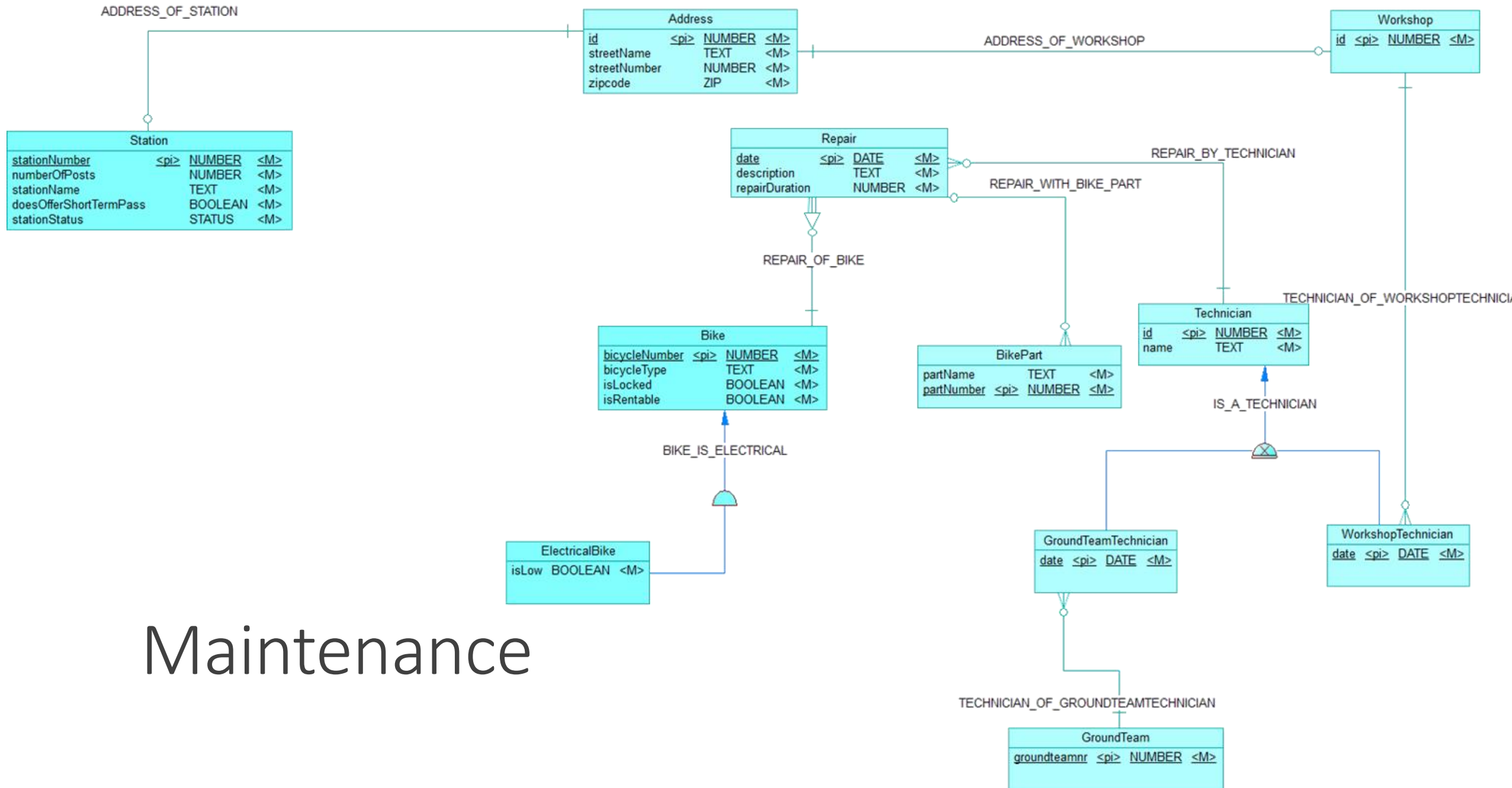












Maintenance

Work process and experiences

- Verbalization
- Improvements the next day
- Modeling in FCO-IM
- Time
- Modifications
- WI-FI

Any questions?
