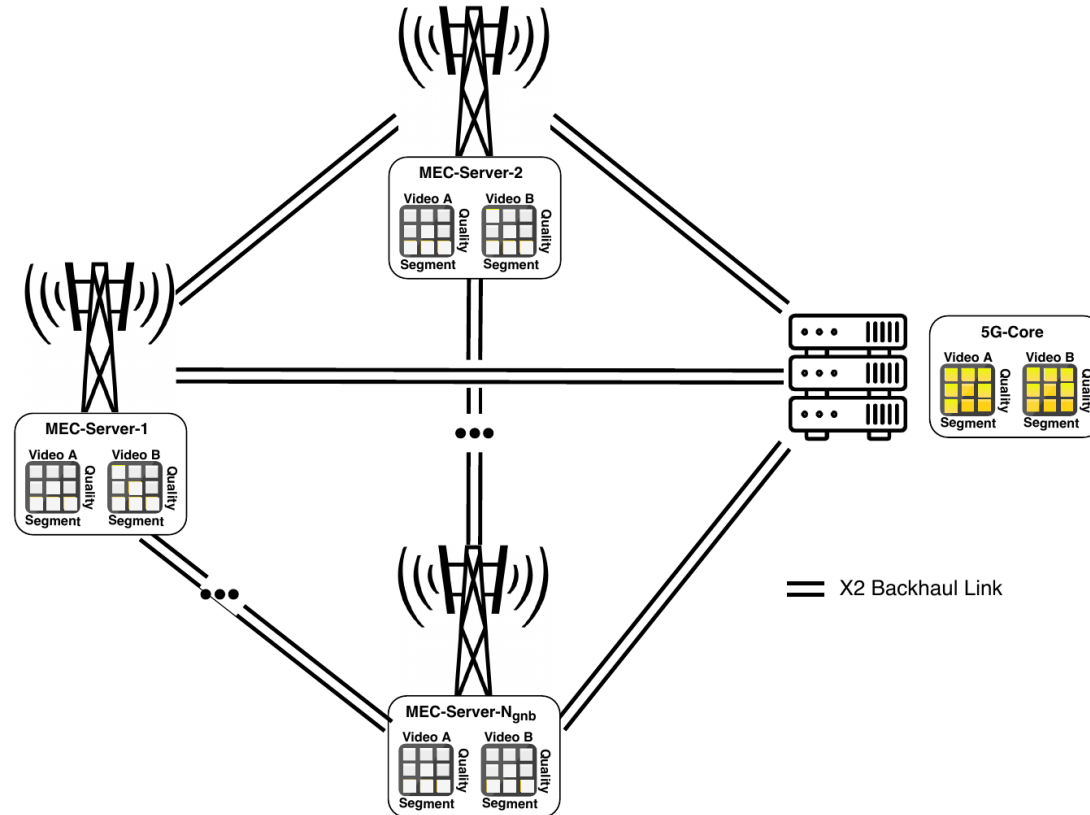# Updates on DASH

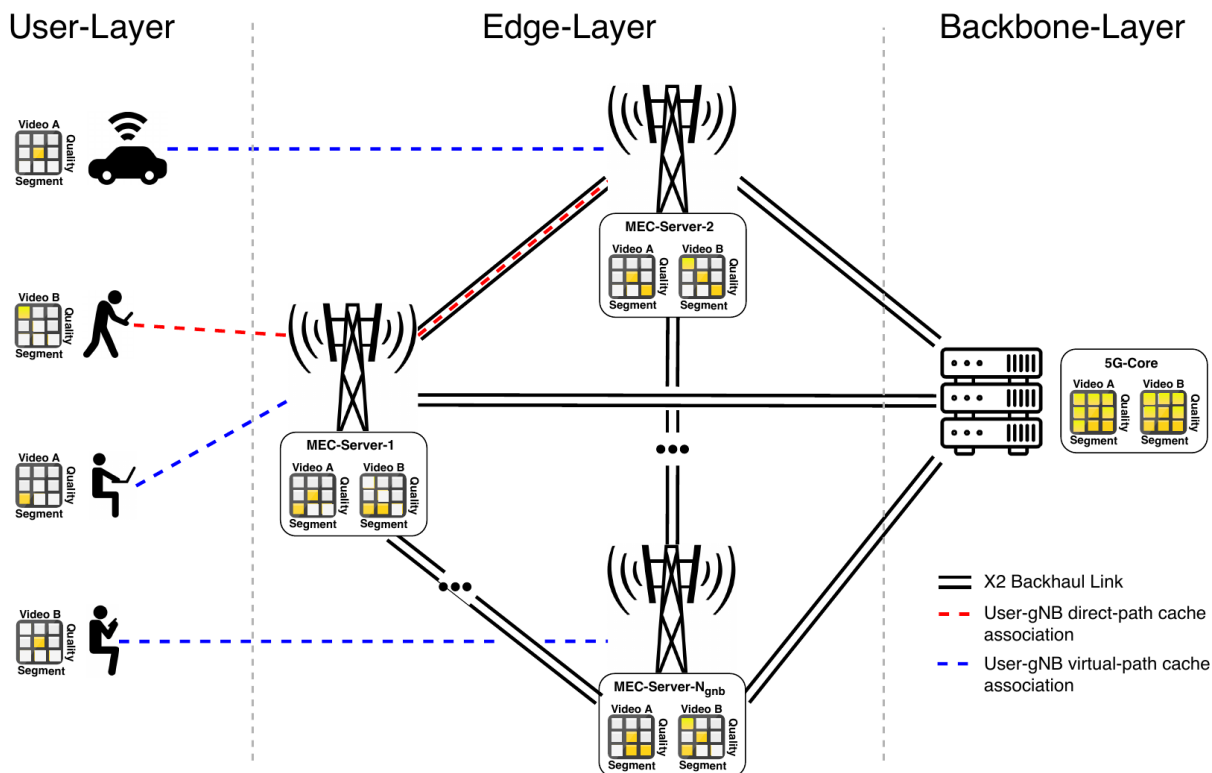*Rasoul, Akhila, Daniel*

Stockholm, Sweden
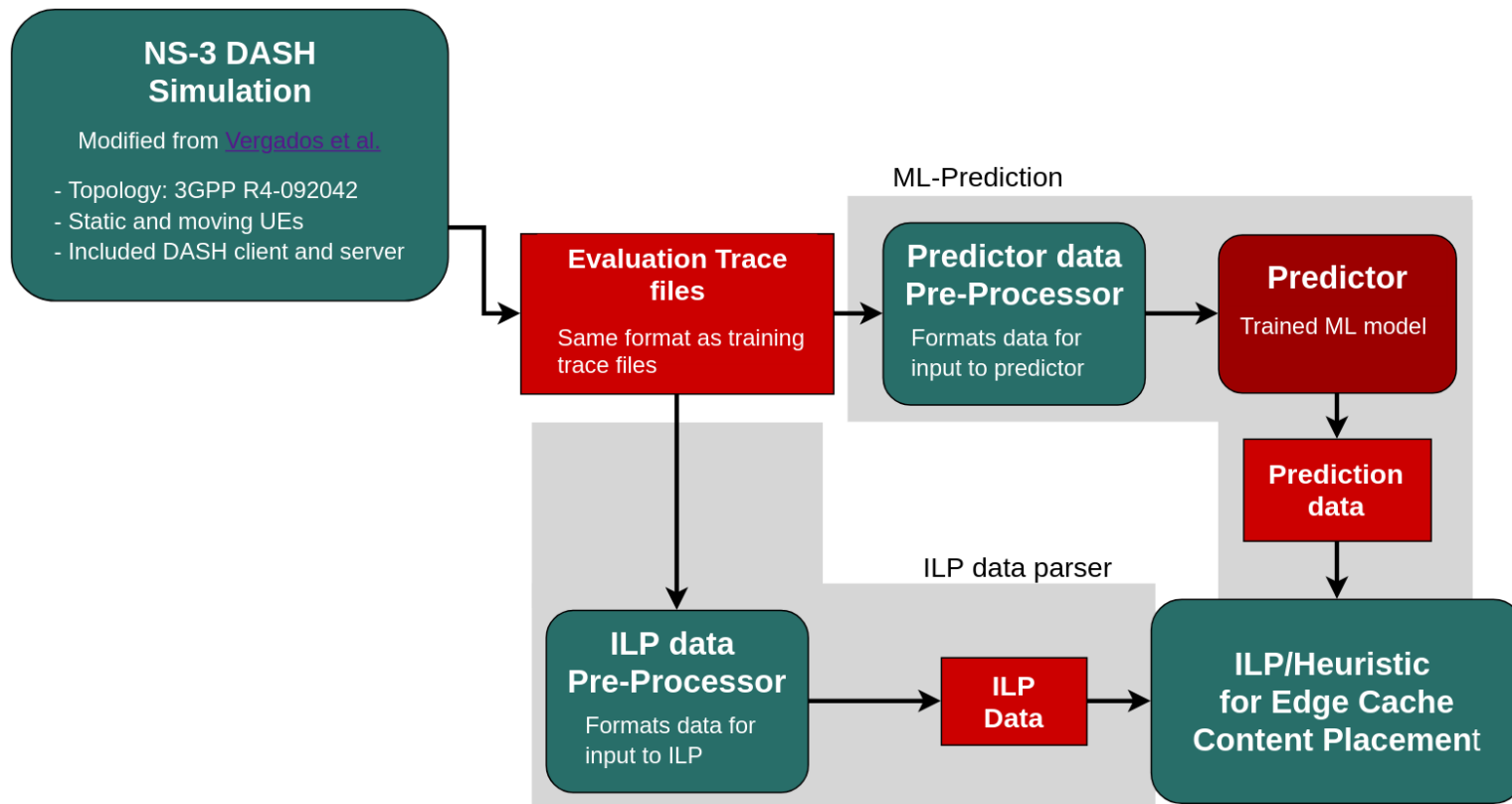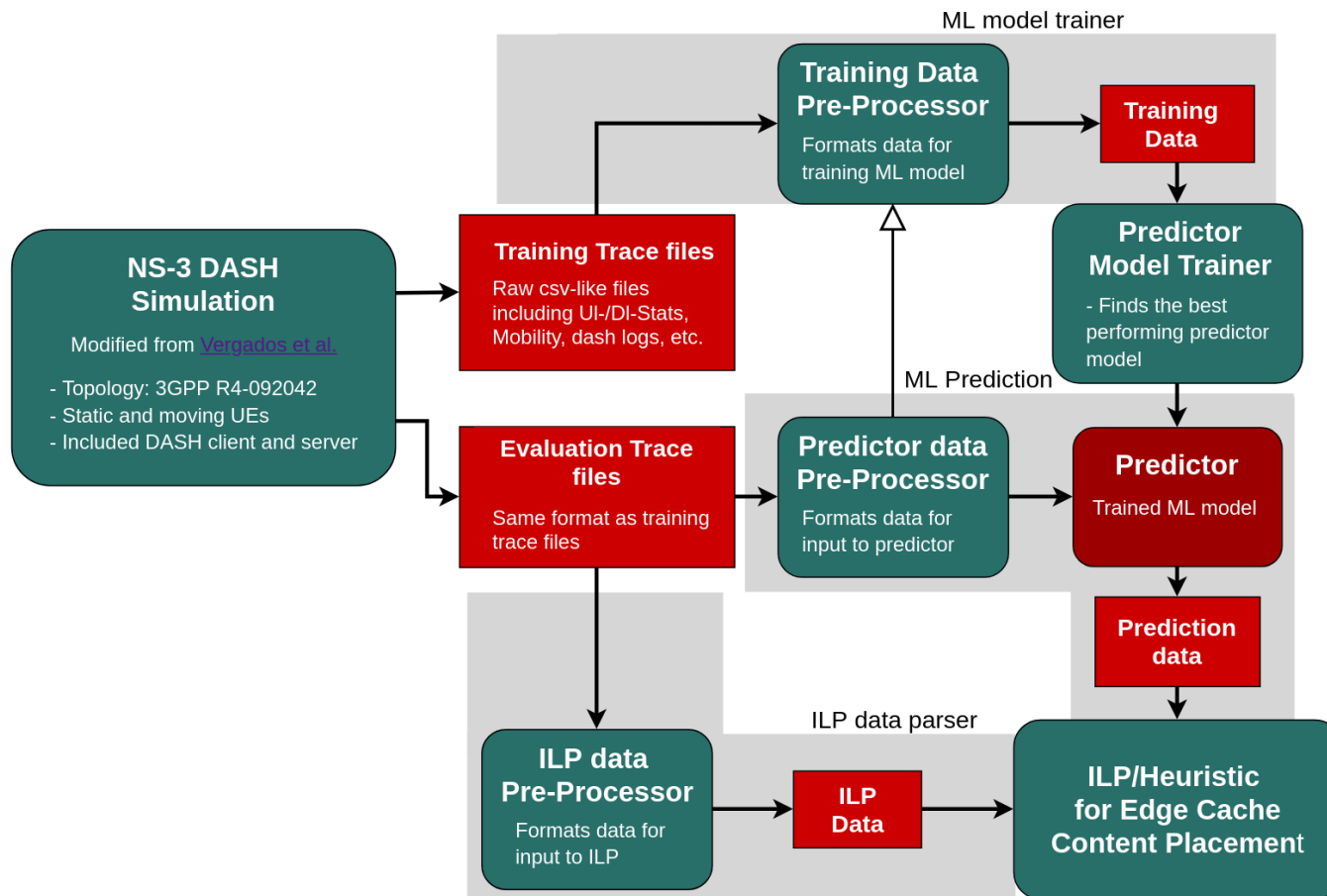
Overview

Initial situation

Overview

After each *'decision period'*: ILP decides where to cache content at Edge layer based on output from a prediction algorithm
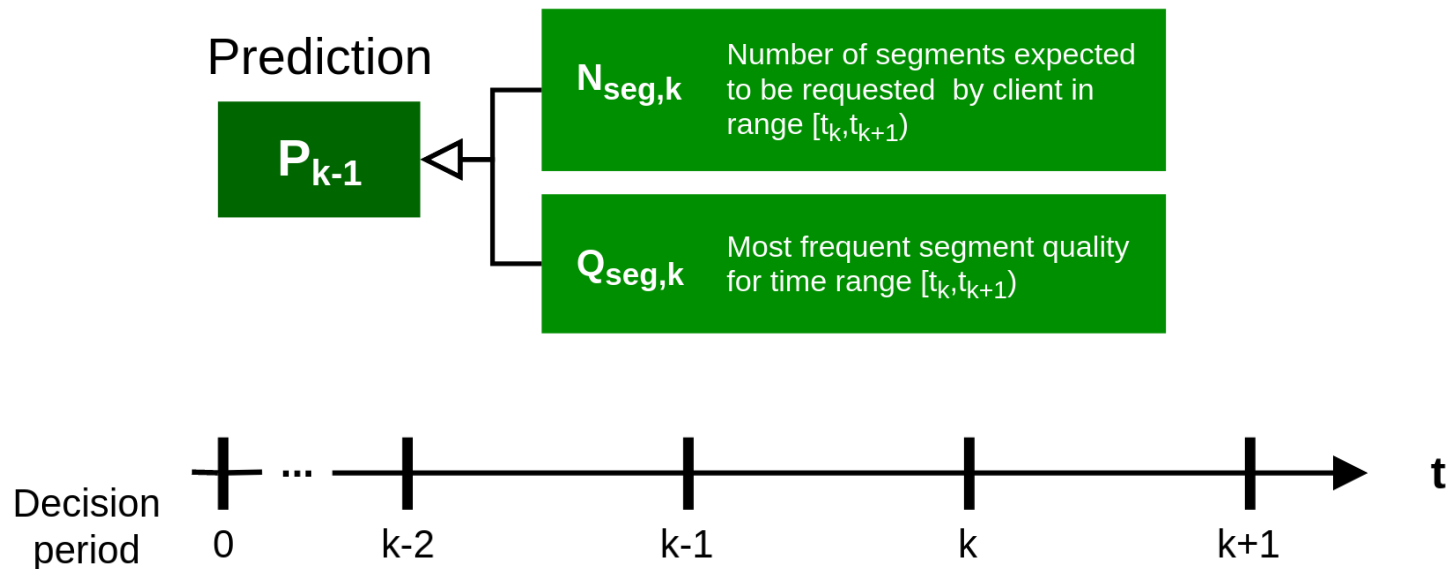
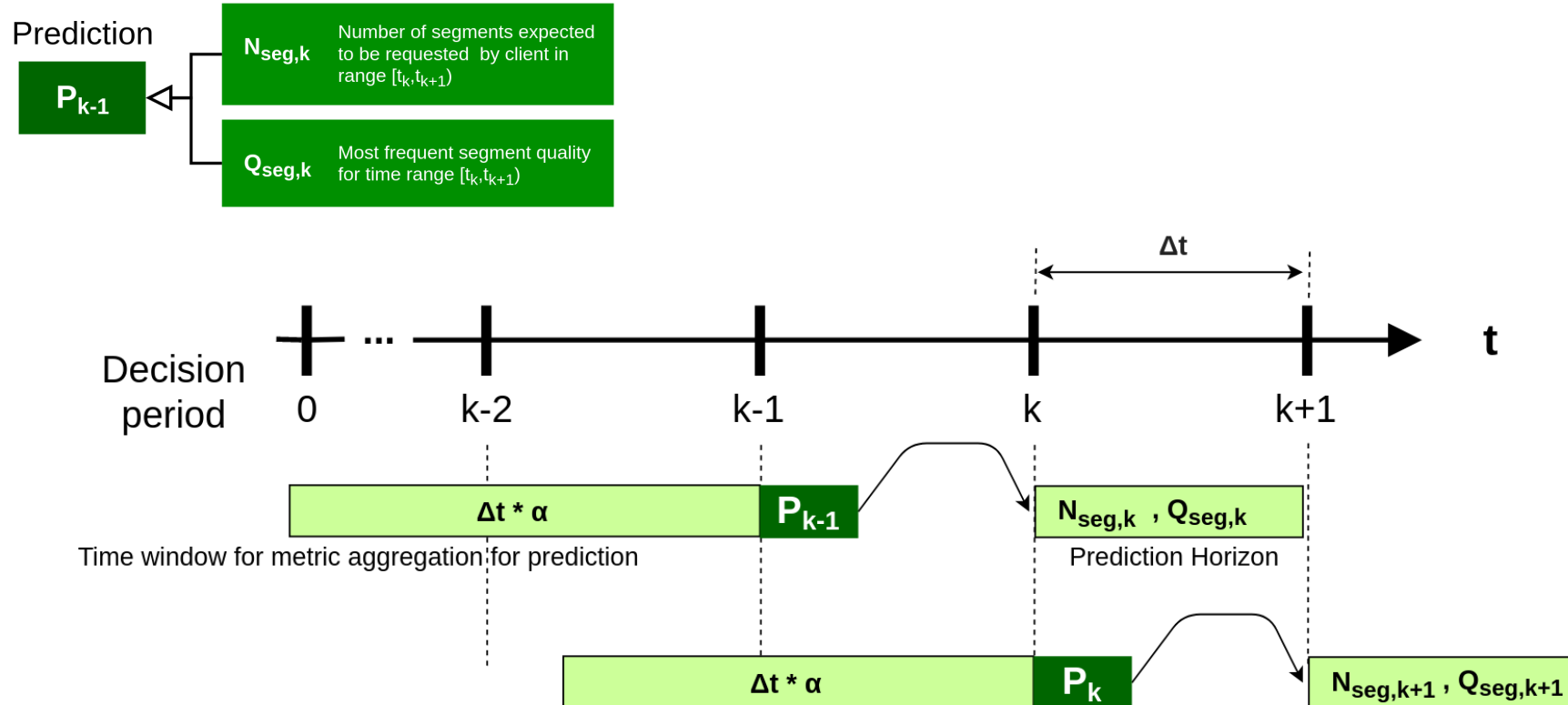# High-Level component interaction

High-Level component interaction

On the prediction procedure

Prediction consists of 2 values:

Prediction

P_{k-1}

$N_{seg,k}$ Number of segments expected to be requested by client in range $[t_k, t_{k+1})$

$Q_{seg,k}$ Most frequent segment quality for time range $[t_k, t_{k+1})$

Decision period

...

0   k-2   k-1   k   k+1   t

On the prediction procedure

Prediction + ILP runtime + Pre-fetching

Prediction

P_{k-1}

$N_{seg,k}$ — Number of segments expected to be requested by client in range $[t_k, t_{k+1})$

$Q_{seg,k}$ — Most frequent segment quality for time range $[t_k, t_{k+1})$

Δt

Decision period

0   k-2   k-1   k   k+1   t

Predict
Get P_{k-1} Get P_k Get P_{k+1}

Run ILP

Pre-Fetch
Pre-fetch for $[t_{k-1}, t_k)$ Pre-fetch for $[t_k, t_{k+1})$ Pre-fetch for $[t_{k+1}, t_{k+2})$
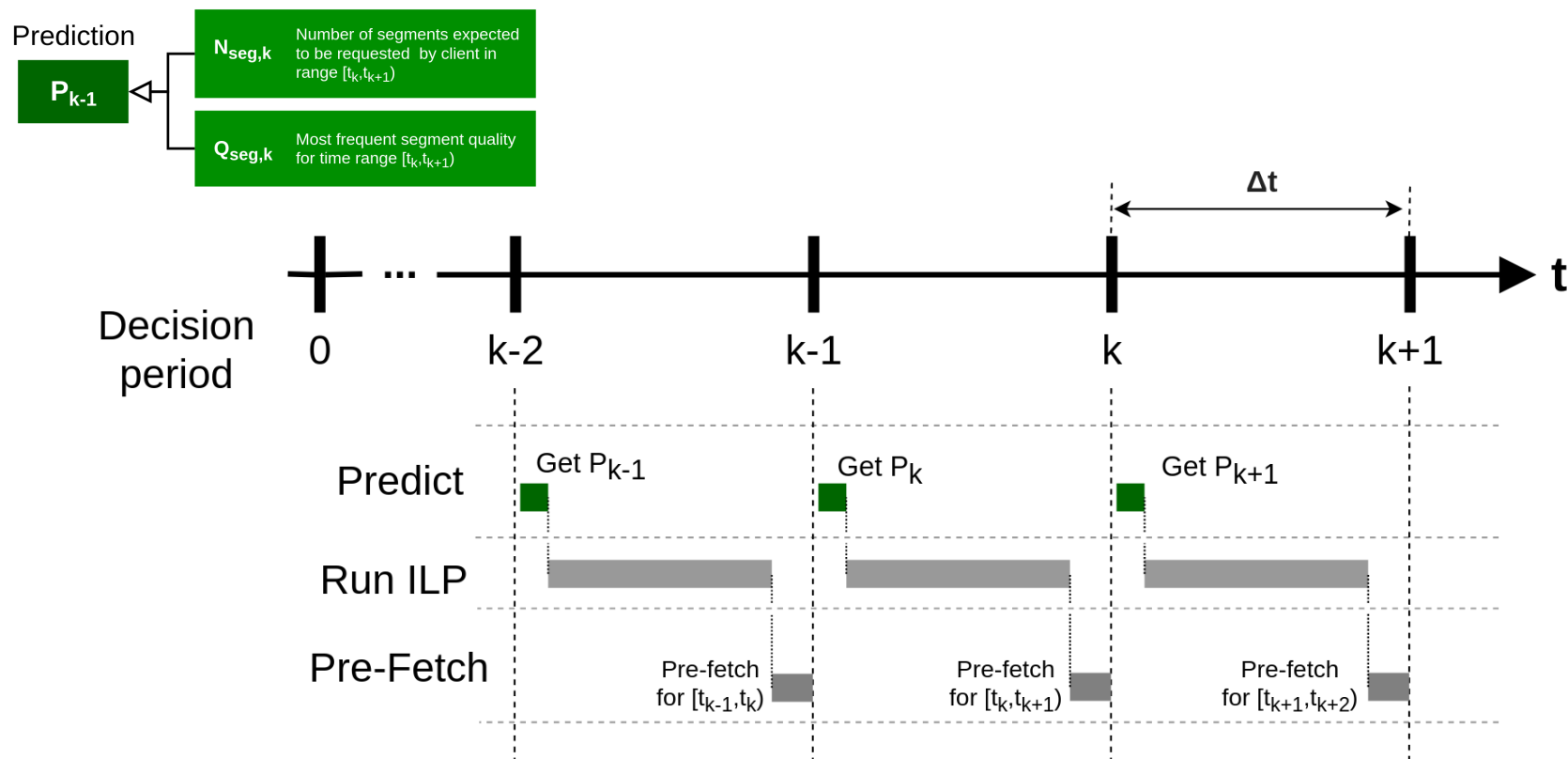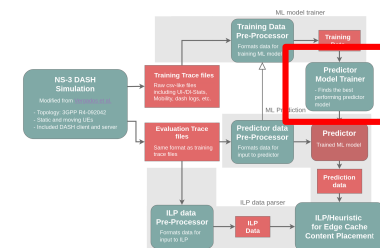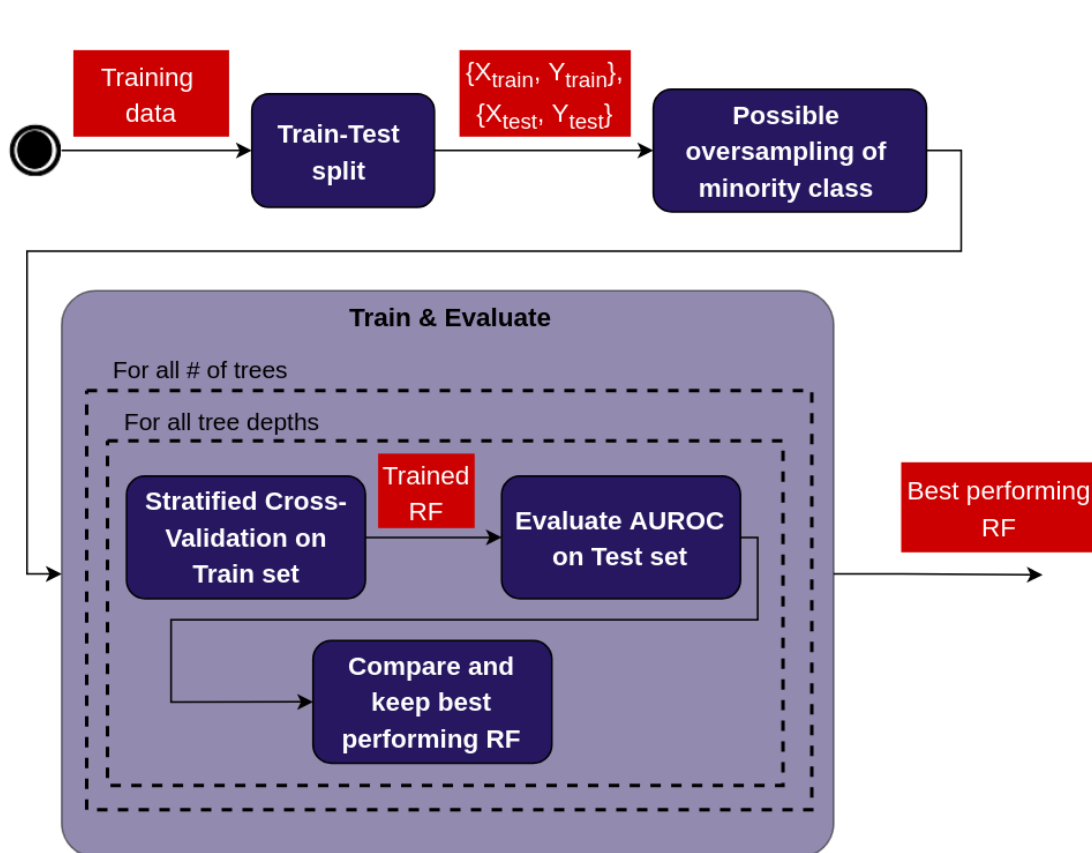
* Boxes are not proportional to the time it takes to run each procedure.

Training Data Pre-processor
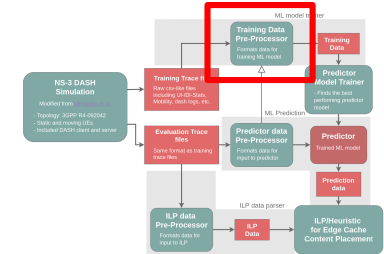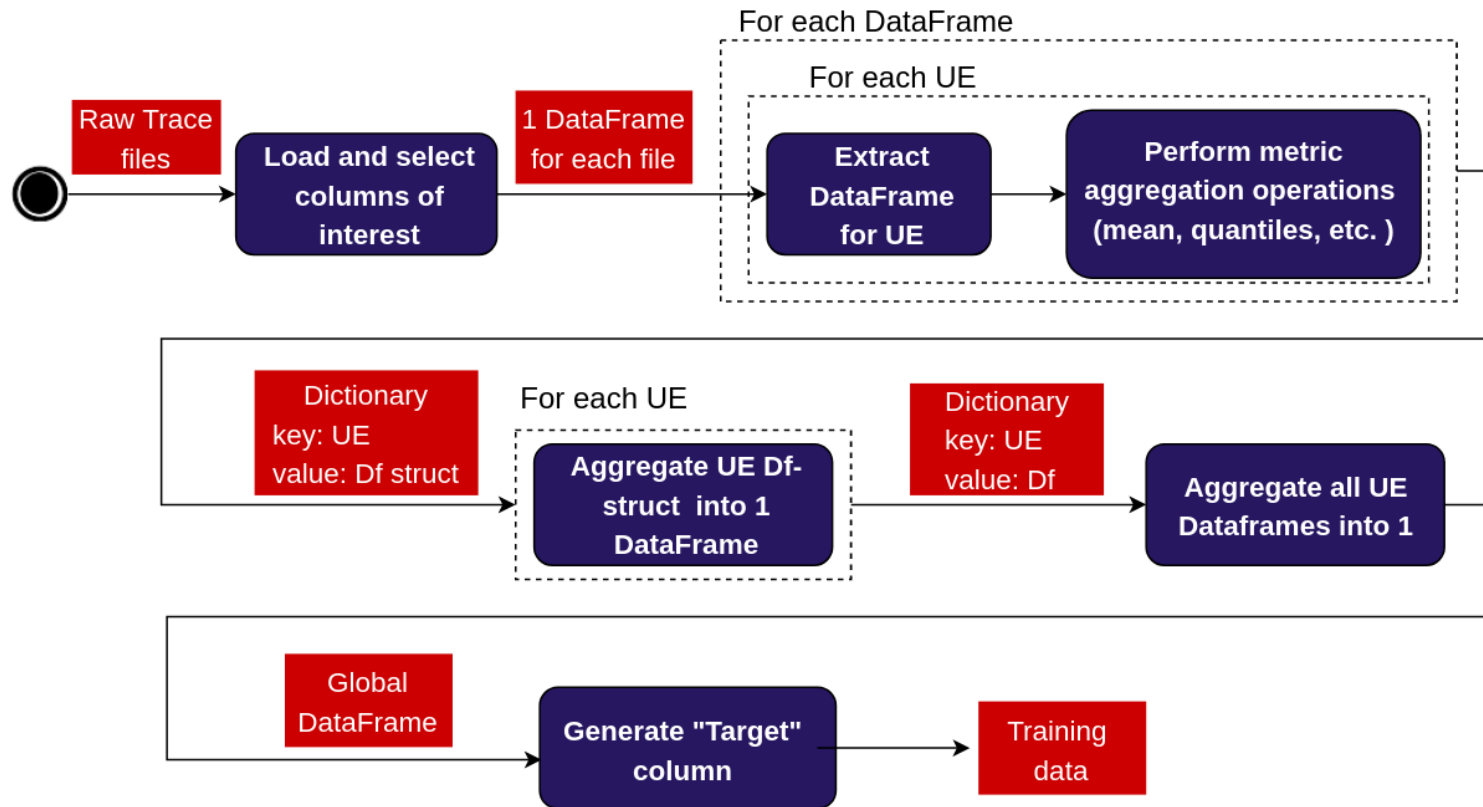
Predictor-model trainer: Random Forest

Thanks

Network Intelligence Group
RISE Research institutes of Sweden AB