Description: This MATLAB dataset (.mat) contains the collected real measurement data from a total of 470 access points (APs) deployed in the Linnanmaa campus of the University of Oulu, Finland. The measurements include IDs, dates of data collection, number of users, received traffic data, transmitted traffic data and location names of each AP. Each observation of traffic data and number of users provide the data value at every 10-minute interval between December 18, 2018 and February 12, 2019. Please cite this as: S. P. Sone & Janne Lehtomäki & Zaheer Khan. "Wireless Traffic Usage Forecasting Using Real Enterprise Network Data: Analysis and Methods". supplementary material, Dataset, 2020. **Size**: 25.1 MB (26,338,384 bytes). **Platform and Environment**: any platform supporting MATLAB .mat files (such as MATLAB, Octave, etc.)

Major component description: There are 3 main major components: number of users connected at collected time (numb_users), received traffic data in bytes (rxbytes) and transmitted traffic data in bytes (txbytes) of each AP in this dataset. Dates and times of data collection (date) can be converted into the serial date number by using datenum() function in MATLAB.
Received and transmitted traffic data are in the cumulative time series format so that differencing every 2 consecutive observations is required to get the actual values at every 10-minute. It can be done by using diff() function in MATLAB, for example, "diff(ap184016.txbytes)".

Setup and running instructions: First, MATLAB must be installed in the computer correctly. Then, the downloaded dataset should be placed in the folder whose path is already specified in MATLAB (see https://in.mathworks.com/help/matlab/matlab_env/specify-file-names.html).
Once the dataset (APs_dataset.mat) is loaded correctly in MATLAB, total 470 structure arrays with the IDs of each AP will appear in MATLAB Workspace. Then, the desired time series can be called in MATLAB, for example, "Tx_data = diff(ap184016.txbytes);".

Output description: The example output figure can be seen as in Fig. 1. The MATLAB codes for the output figure is as follow:

```
load APs_dataset
S = load('APs_dataset');
A = S.ap184016;
A1 = S.ap184194;
figure('DefaultAxesFontSize',12)
subplot(2,1,1)
eval(['plot(datetime(ap184016.date(2:end),"ConvertFrom","datenum"), double(diff(A.txbytes)))']);
legend('Transmitted bytes');
xlabel('(a) ap184016')
subplot(2,1,2)
eval(['plot(datetime(ap184194.date(2:end),"ConvertFrom","datenum"), double(diff(A1.txbytes)))']);
legend('Transmitted bytes');
xlabel('(b) ap184194')
```

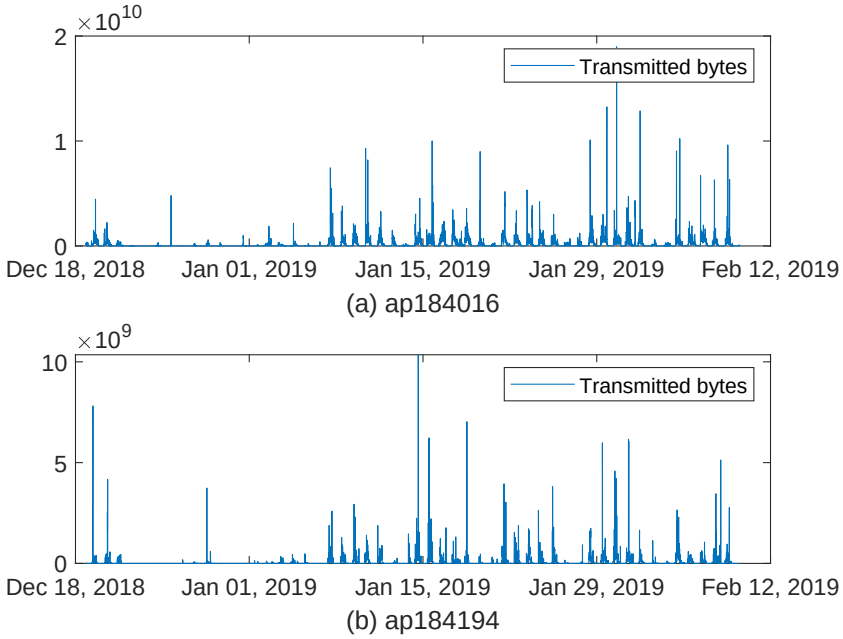

Figure 1. Transmitted traffic for two different APs

Supplementary information: In the article with title: "Wireless Traffic Usage Forecasting Using Real Enterprise Network Data: Analysis and Methods", only the data between January 5, 2019 and February 8, 2019 is used since there is a long holiday season in December. The total 8 APs at a specific location of the University (study and conference lounge) are ap184016, ap184192, ap185166, ap184194, ap184145, ap185165, ap184193, ap184014. The four representative APs of High group used in the article are ap184074, ap184149, ap184202 and ap185135. The list of all APs in the High group are shown in Table I.

Contact information: You can contact Ms. Su Pyae Sone (sone.supyae@oulu.fi) for further questions regarding to this dataset.

TABLE I. List of all APs in the High group

ap184014	ap184085	ap184145	ap184193	ap185081	ap185149	ap185214	ap186022
ap184016	ap184099	ap184149	ap184194	ap185100	ap185151	ap185228	ap186023
ap184028	ap184101	ap184158	ap184196	ap185104	ap185152	ap185229	ap186026
ap184029	ap184110	ap184161	ap184197	ap185111	ap185153	ap185230	ap186031
ap184040	ap184112	ap184170	ap184199	ap185124	ap185159	ap185232	ap186033
ap184054	ap184113	ap184172	ap184200	ap185135	ap185165	ap185233	ap186042
ap184055	ap184117	ap184174	ap184202	ap185136	ap185166	ap185234	ap186045
ap184069	ap184118	ap184176	ap184204	ap185146	ap185171	ap185237	ap187031
ap184074	ap184131	ap184183	ap184205	ap185147	ap185172	ap185249	ap187032
ap184080	ap184141	ap184189	ap184230	ap185148	ap185203	ap186011	