## A: Datasheet

Algorithm: cogent_1

Developer: Thales

Submission Date: 2018_06_20

Template size: 525 bytes

Template time (2.5 percentile): 542 msec

Template time (median): 551 msec

Template time (97.5 percentile): 579 msec

Investigation:

Frontal mugshot ranking 130 (out of 265) –– FNIR(1600000, 0, 1) = 0.0105  vs. lowest 0.0009 from sensetime_005

Mugshot webcam ranking 142 (out of 227) –– FNIR(1600000, 0, 1) = 0.0461  vs. lowest 0.0062 from sensetime_005

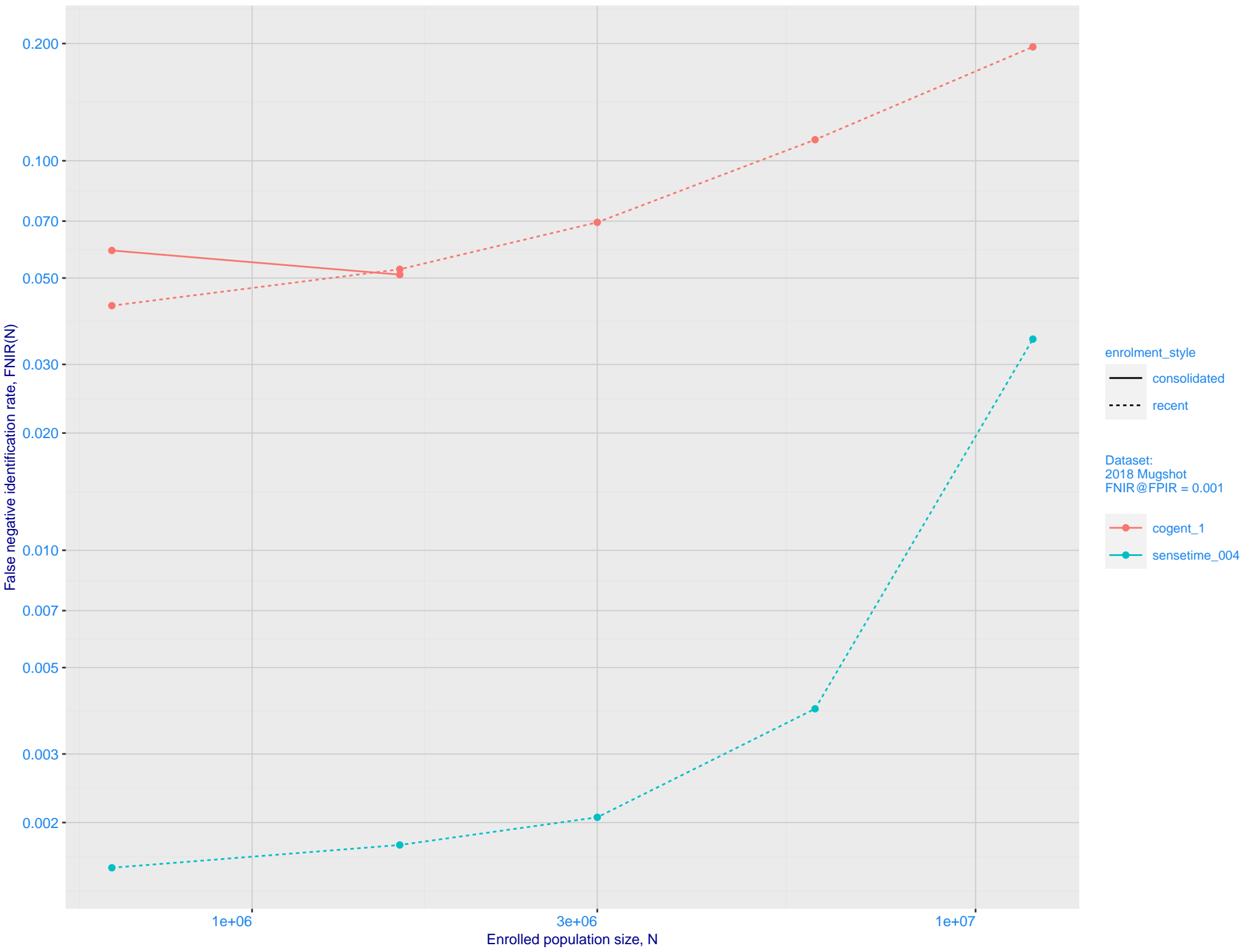Mugshot profile ranking 160 (out of 196) –– FNIR(1600000, 0, 1) = 0.9653  vs. lowest 0.0591 from sensetime_005

Identification:

Frontal mugshot ranking 88 (out of 265) –– FNIR(1600000, T, L+1) = 0.0527, FPIR=0.001000  vs. lowest 0.0018 from sensetime_004
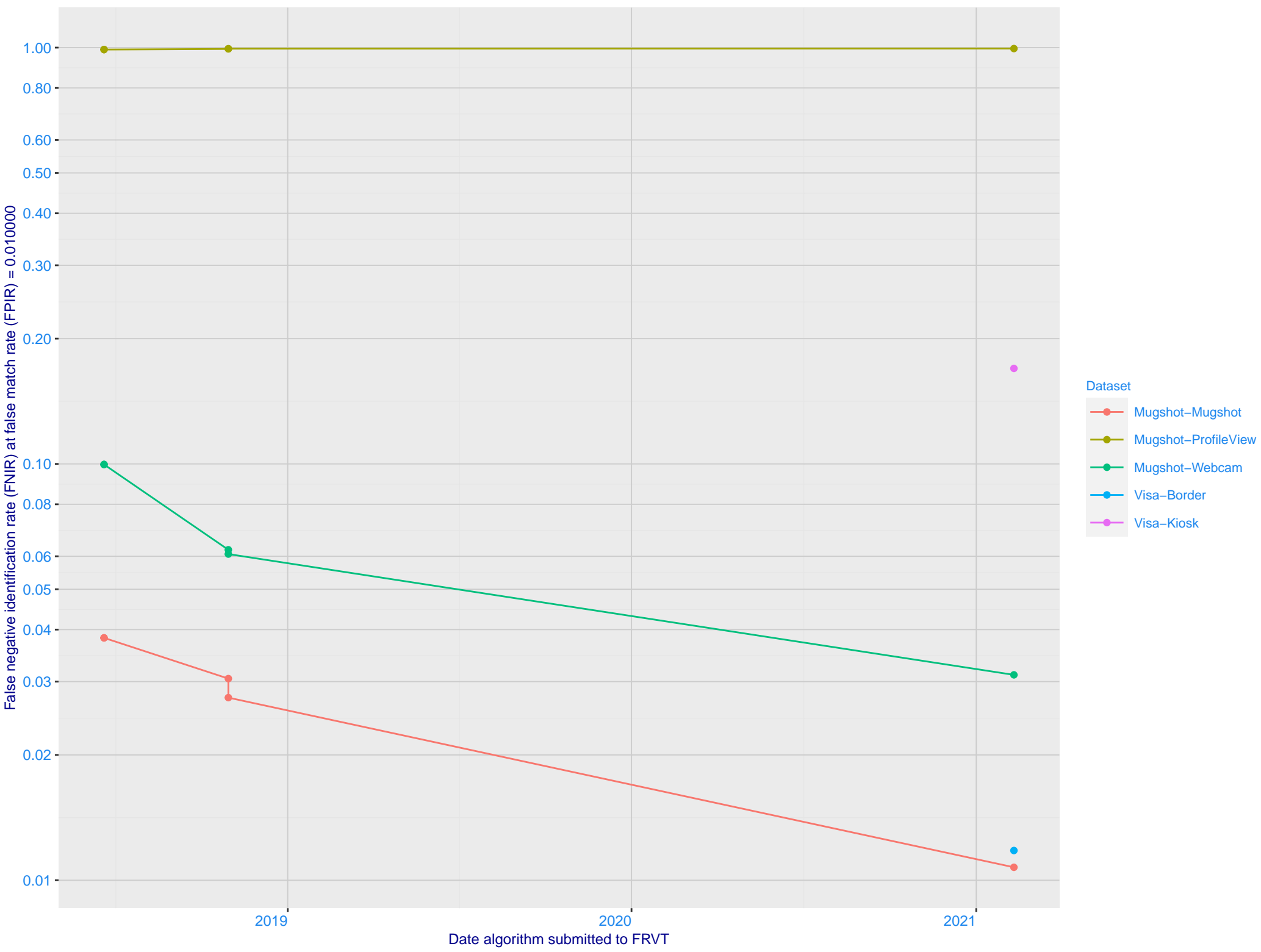
Mugshot webcam ranking 98 (out of 225) –– FNIR(1600000, T, L+1) = 0.1402, FPIR=0.001000  vs. lowest 0.0122 from sensetime_003

Mugshot profile ranking 100 (out of 195) –– FNIR(1600000, T, L+1) = 0.9949, FPIR=0.001000  vs. lowest 0.1331 from hr_000
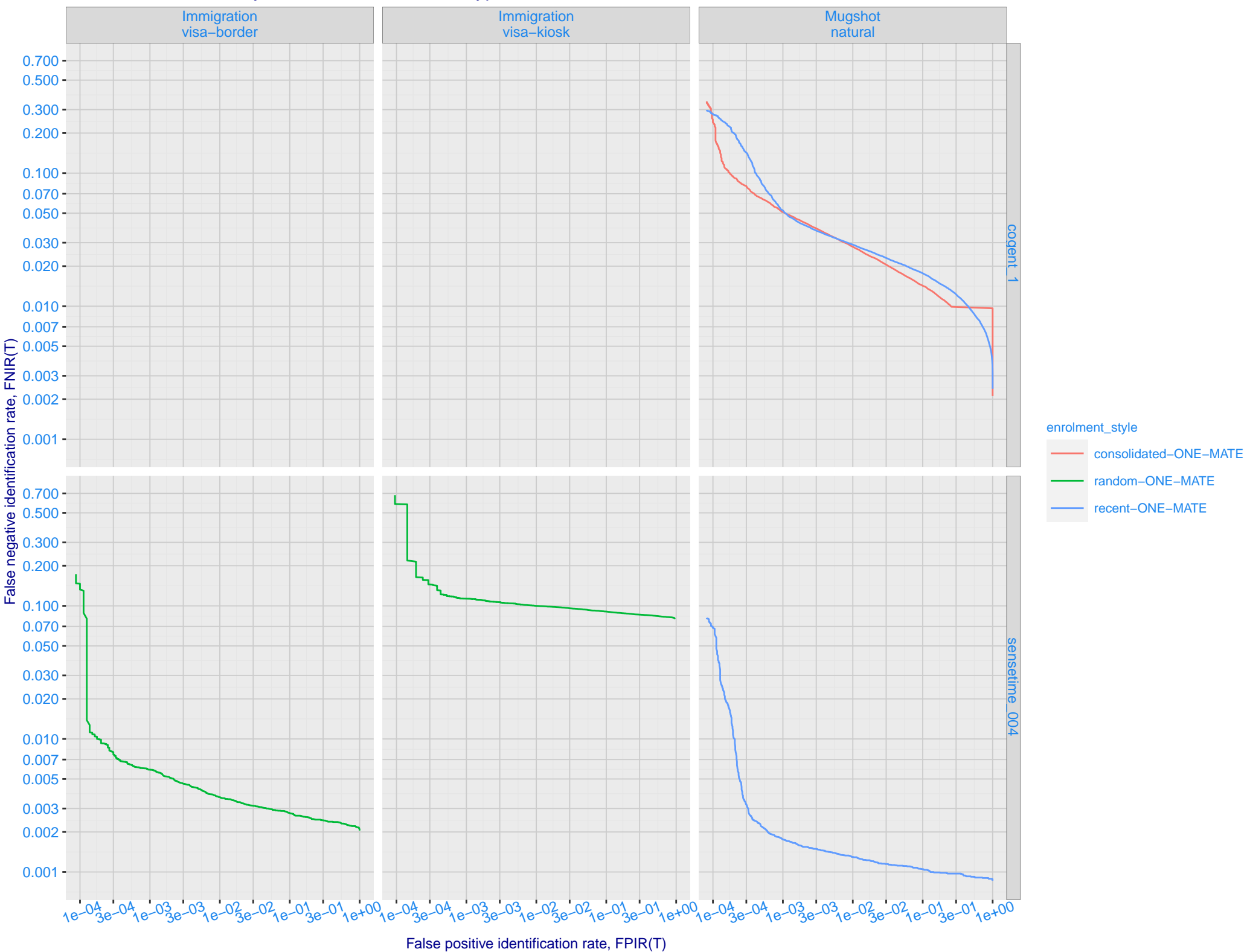
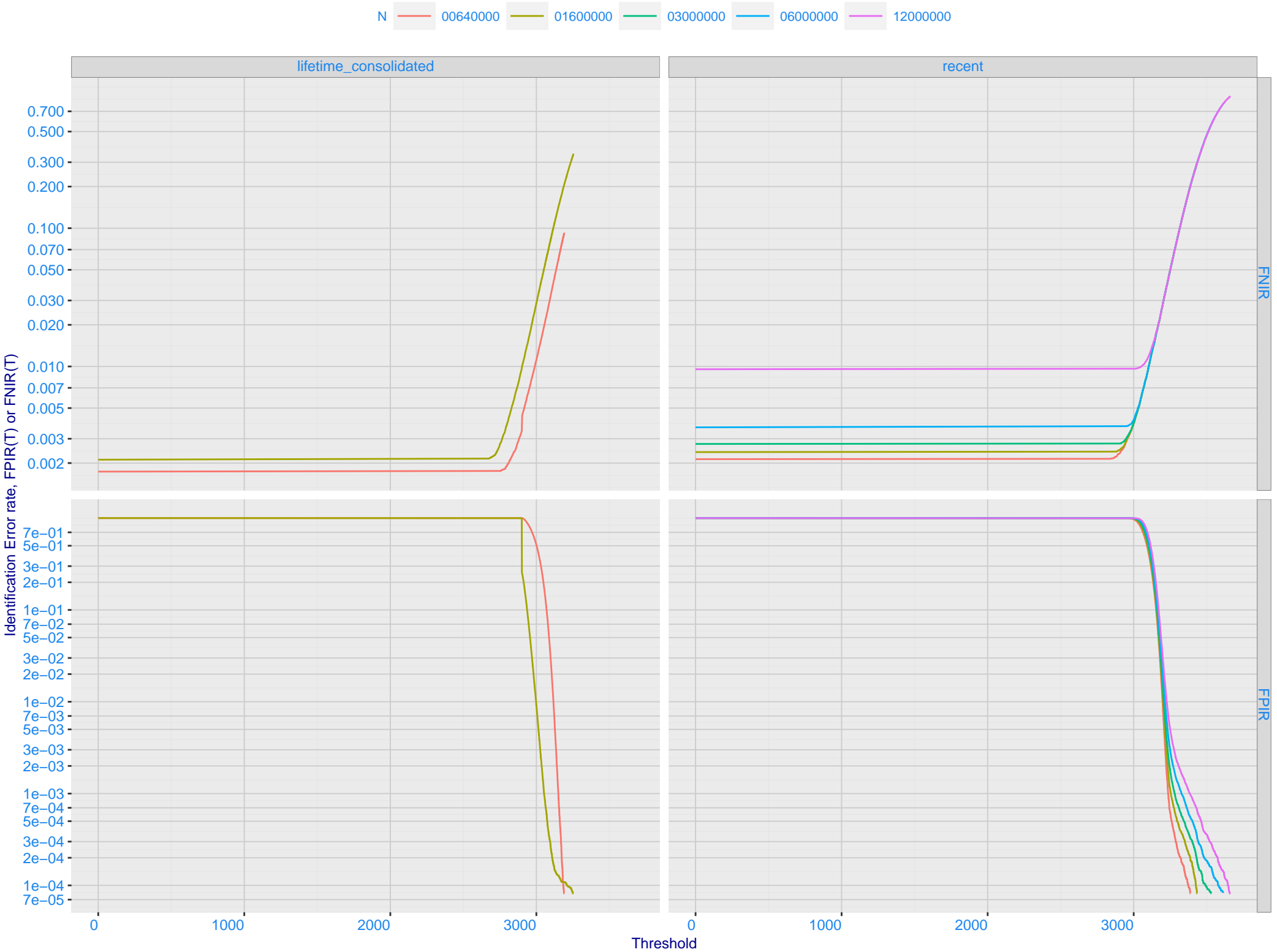B: Mugshot natural images, identification mode: FNIR(N, L+1, T) vs. most accurate (sensetime_004)

**C: Evolution of accuracy for COGENT algorithms on three datasets 2018 – present**

Dataset

- Mugshot–Mugshot
- Mugshot–ProfileView
- Mugshot–Webcam
- Visa–Border
- Visa–Kiosk

False negative identification rate (FNIR) at false match rate (FPIR) = 0.010000

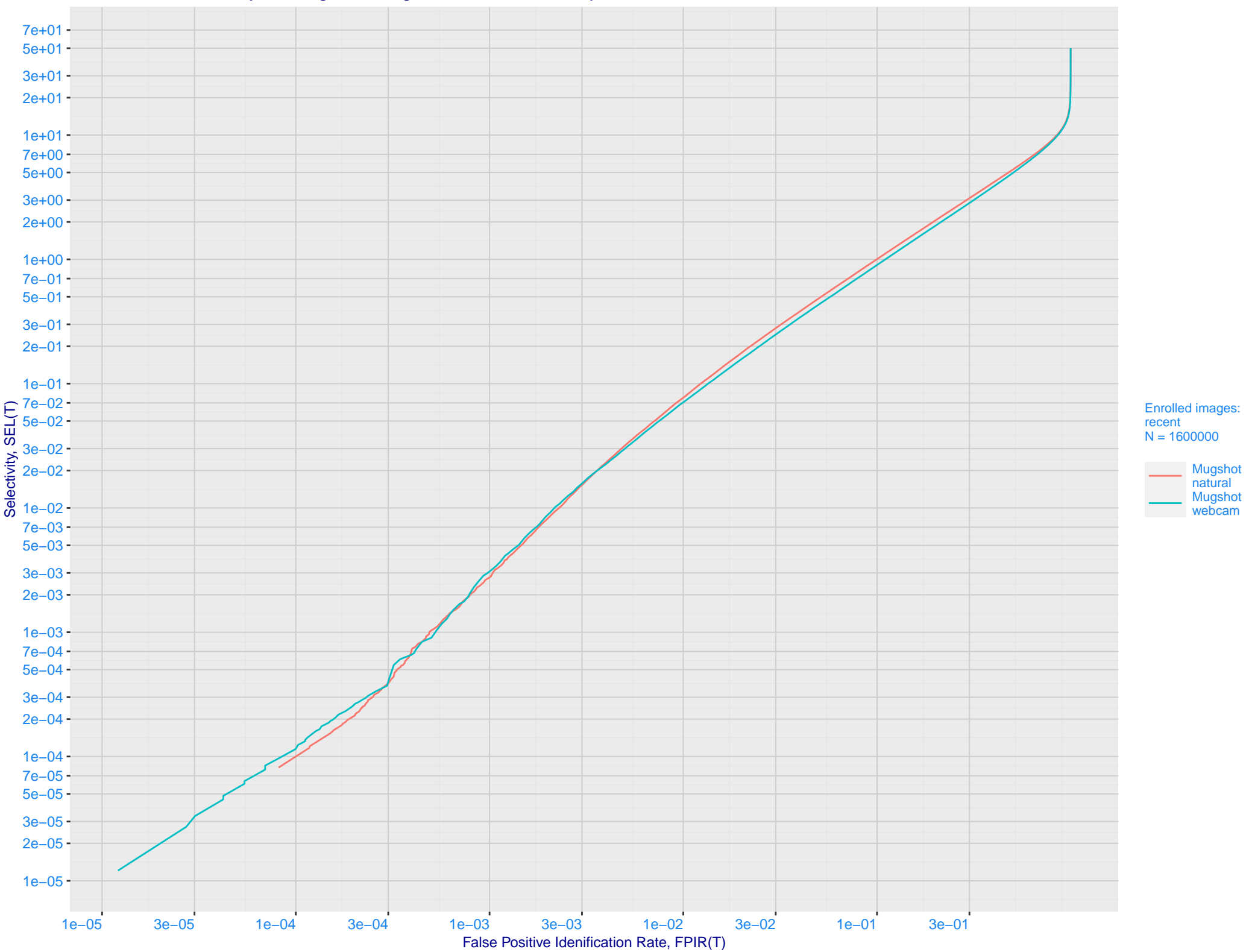Date algorithm submitted to FRVT

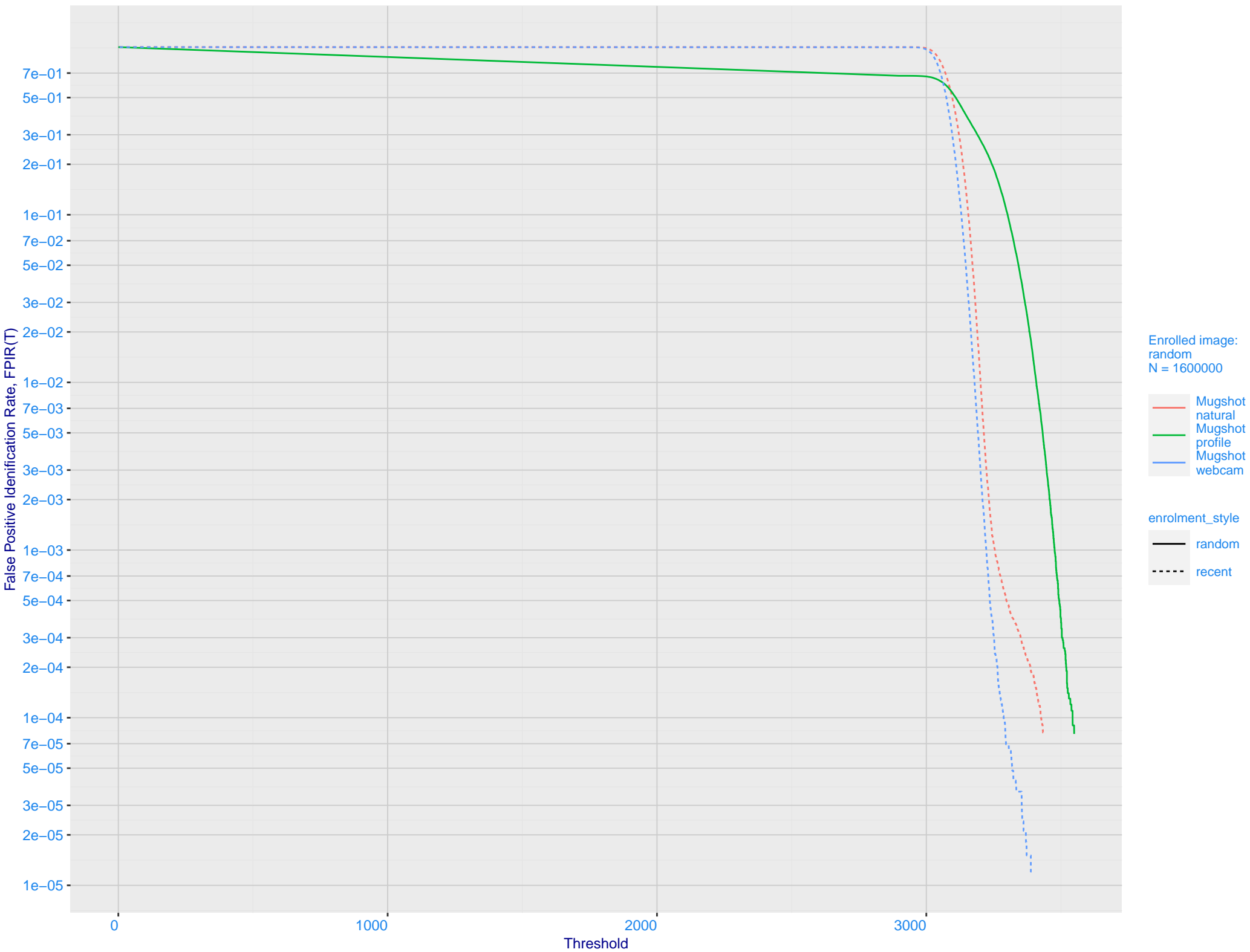D: 1:N error tradeoff by dataset and enrollment type. N = 1600000 individuals

E: Dependence of error rates on T by number enrolled identities, N, for Mugshot natural images
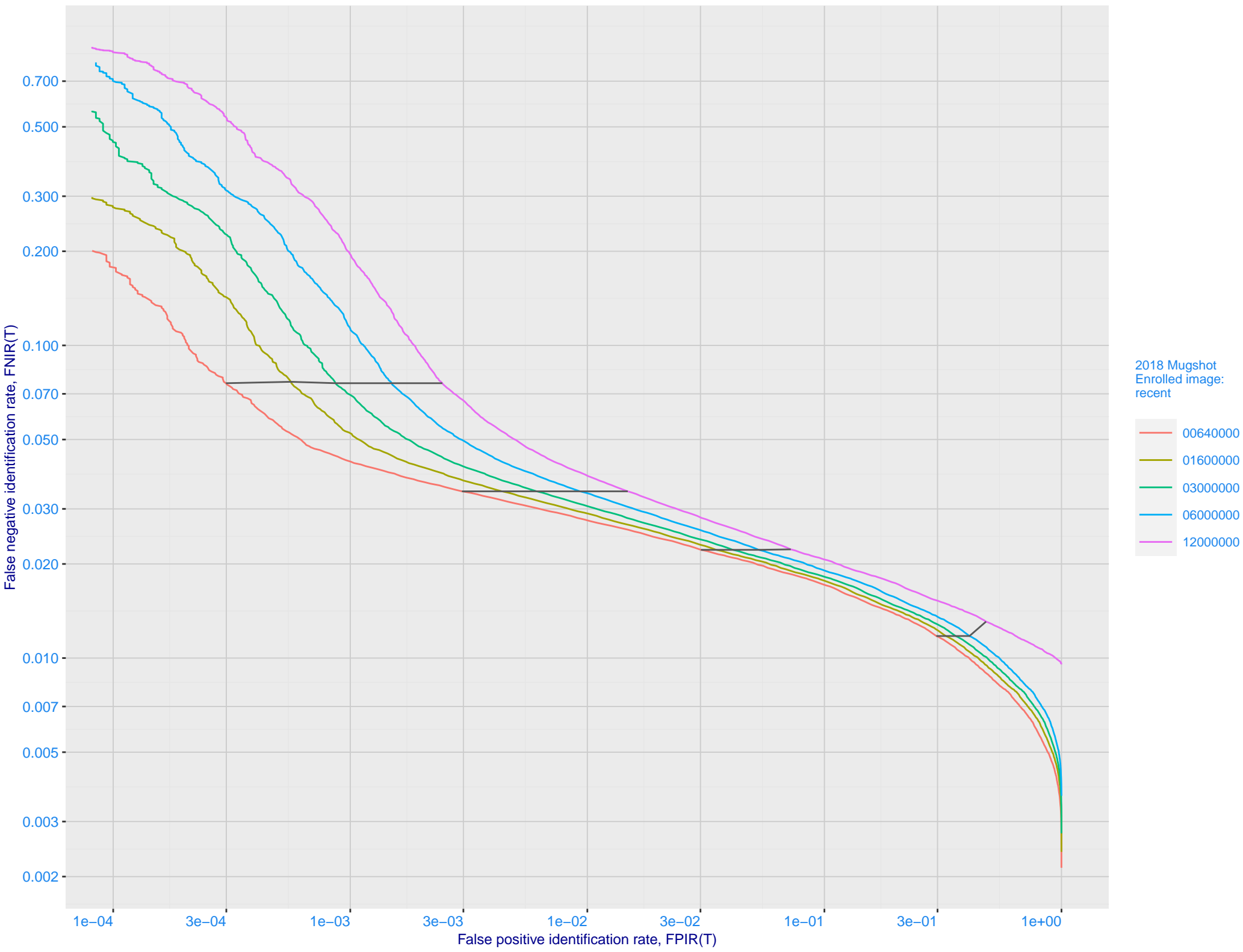
F: FPIR vs. Selectivity for mugshot images, N = 1600000 subjects enrolled with one recent mate

Selectivity, SEL(T)

False Positive Idenification Rate, FPIR(T)

Enrolled images:
recent
N = 1600000

Mugshot
natural
Mugshot
webcam

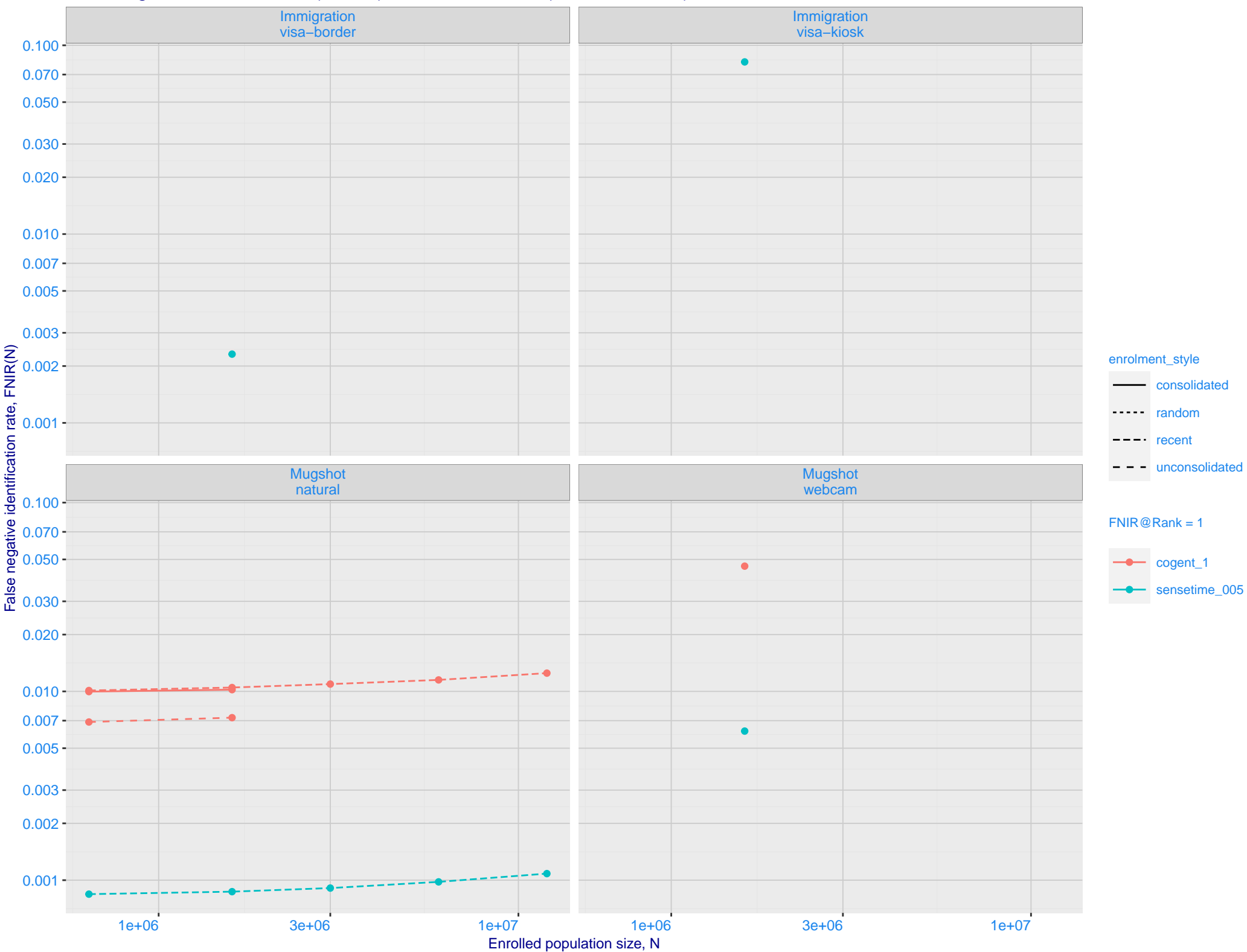G: FPIR dependence on T by probe type for N = 1600000 subjects

H: DET for Mugshot natural images and various N. Links connect points of equal threshold.
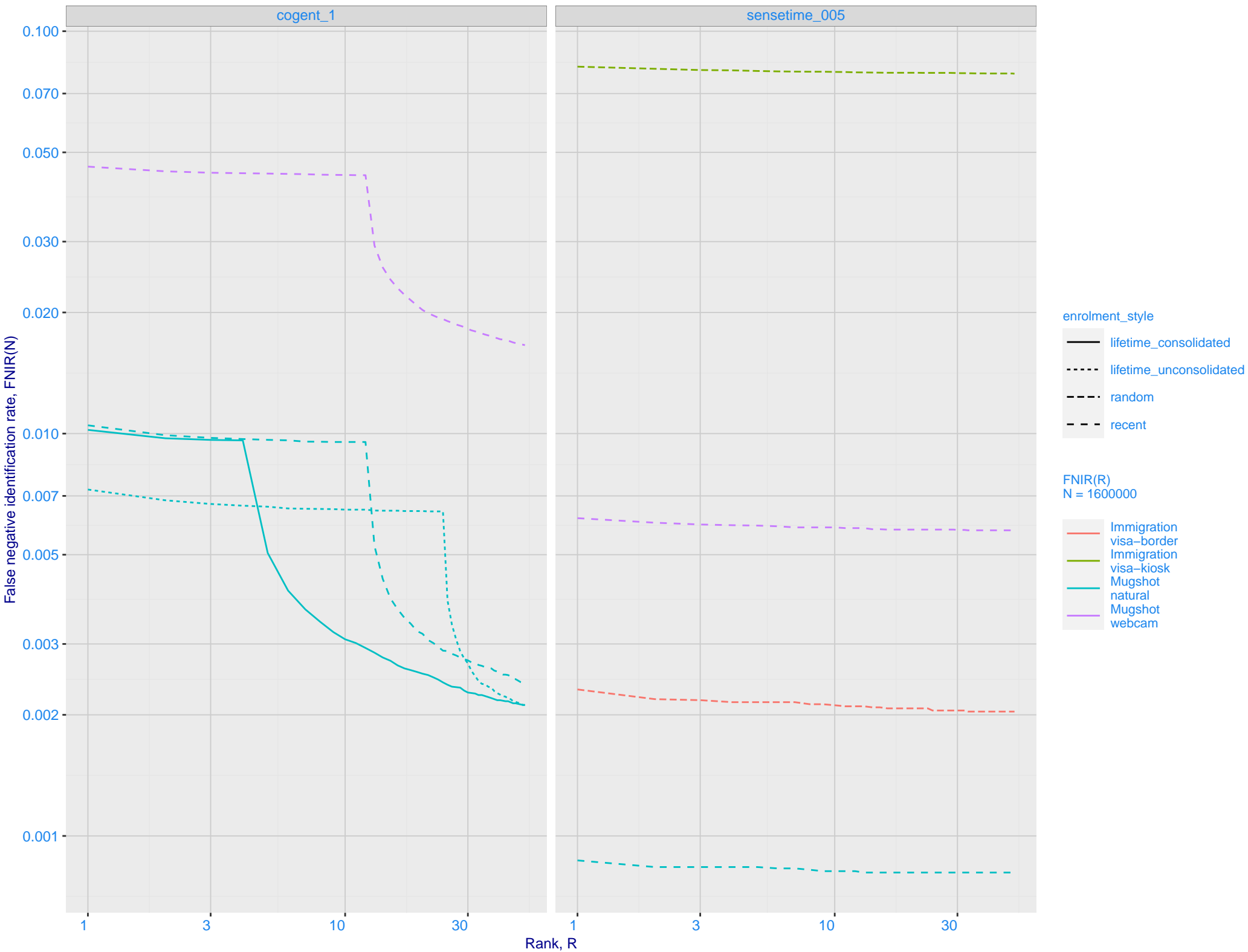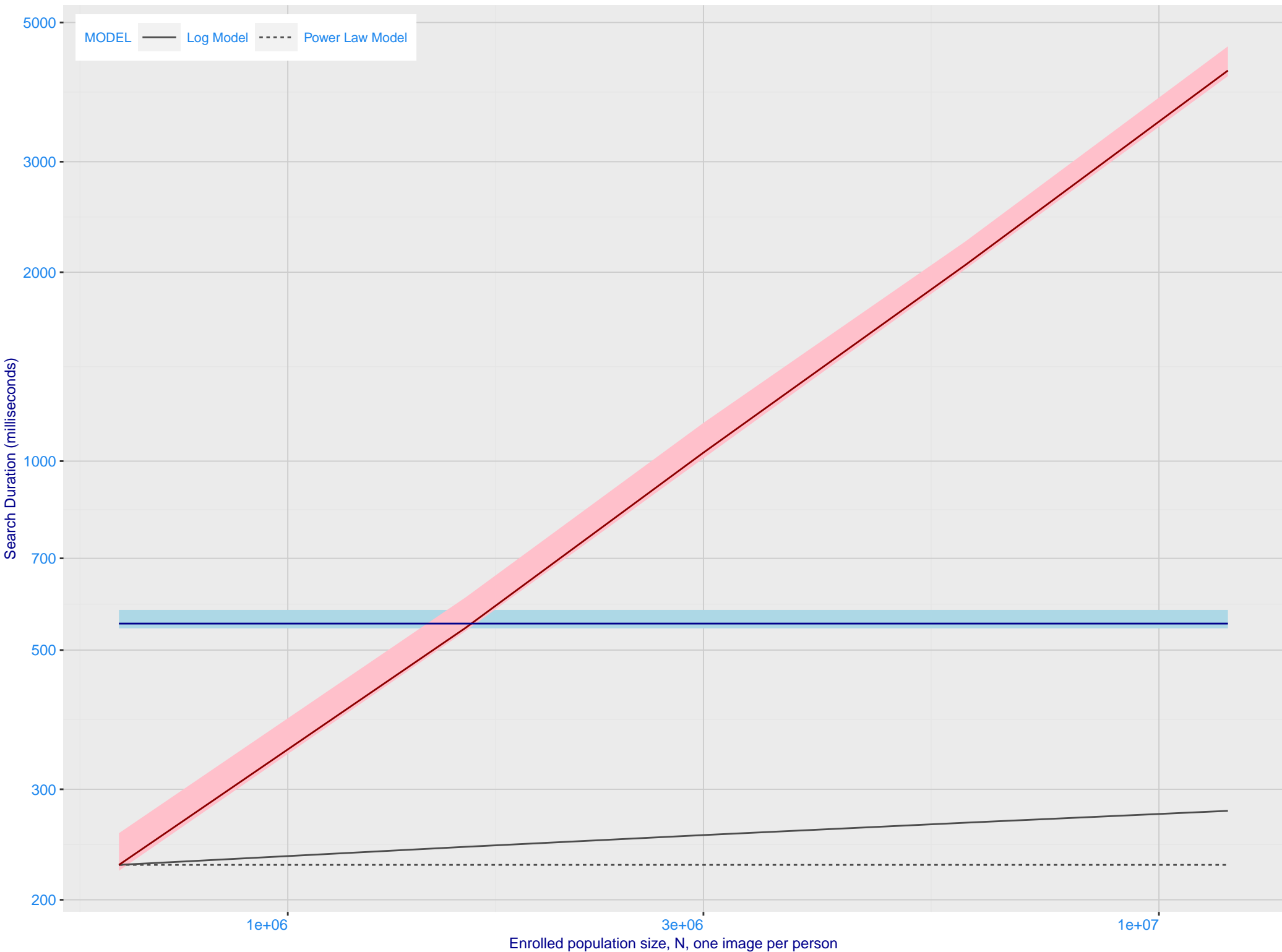
**I: Investigational mode: FNIR(N, 1, 0) vs. most accurate (sensetime_005)**

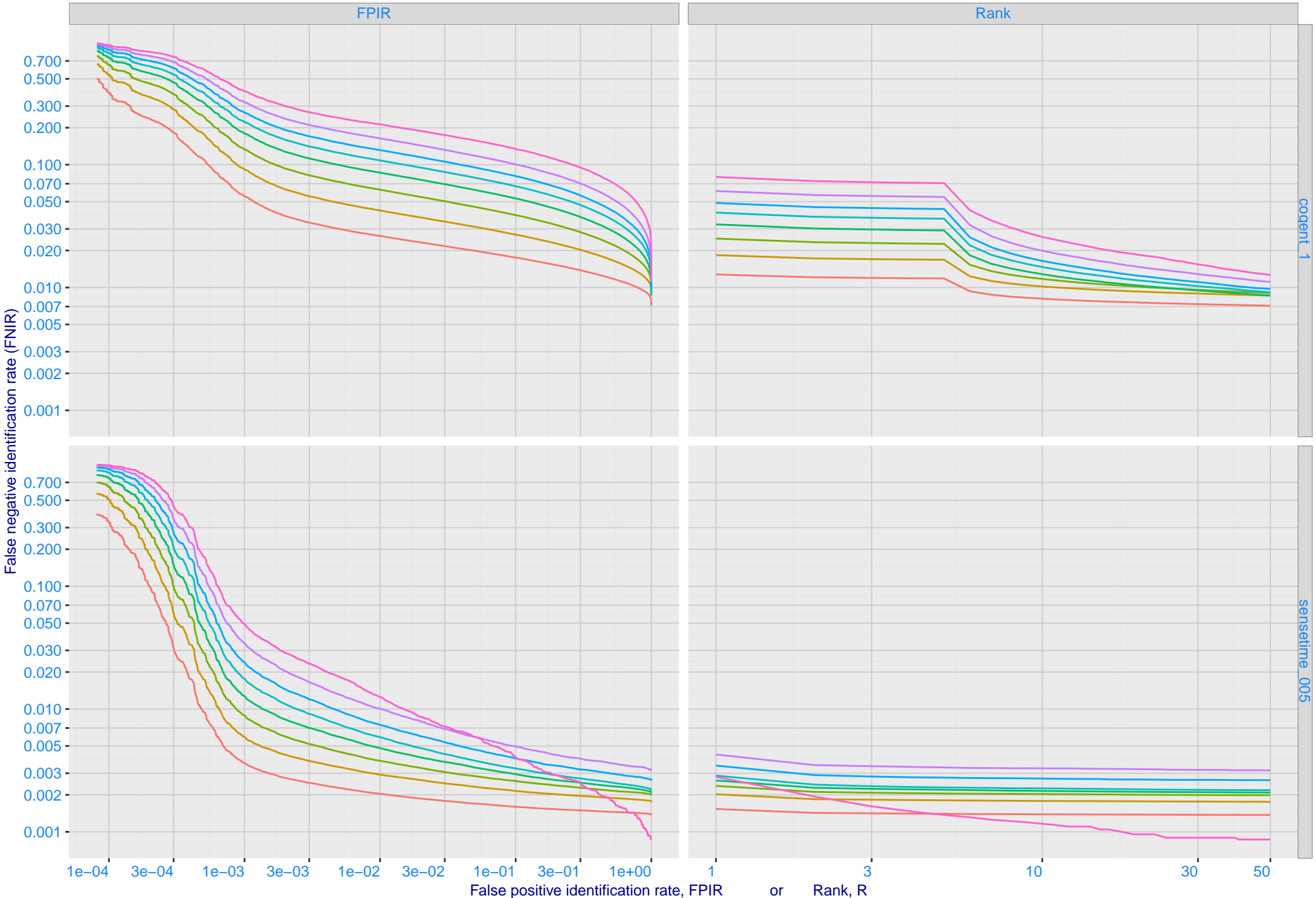J: Investigational mode: FNIR(1600000, R, 0) by probe type

Template duration; search duration vs. N. The blue and pink ribbon covers 95 percent of observed measurements. The template generation time is independent of N. The log and power–law models are fit to the first two (N,T) observations

M: Identification FNIR(N, T, L+1) and Investigational FNIR(N, 0, R) under ageing

N: Decline of genuine scores with ageing