A: Datasheet

Algorithm: xforwardai_000

Developer: Xforward AI Technology

Submission Date: 2020_07_24

Template size: 2048 bytes

Template time (2.5 percentile): 752 msec

Template time (median): 753 msec

Template time (97.5 percentile): 813 msec

Investigation:

Frontal mugshot ranking 36 (out of 265) –– FNIR(1600000, 0, 1) = 0.0023 vs. lowest 0.0009 from sensetime_005

Mugshot webcam ranking 37 (out of 227) –– FNIR(1600000, 0, 1) = 0.0136 vs. lowest 0.0062 from sensetime_005

Mugshot profile ranking 8 (out of 196) –– FNIR(1600000, 0, 1) = 0.0888 vs. lowest 0.0591 from sensetime_005

Immigration visa–border ranking 26 (out of 148) –– FNIR(1600000, 0, 1) = 0.0038 vs. lowest 0.0013 from visionlabs_010

Immigration visa–kiosk ranking 19 (out of 145) –– FNIR(1600000, 0, 1) = 0.0937 vs. lowest 0.0568 from hr_000

Identification:

Frontal mugshot ranking 27 (out of 265) –– FNIR(1600000, T, L+1) = 0.0151, FPIR=0.001000 vs. lowest 0.0018 from sensetime_004

Mugshot webcam ranking 29 (out of 225) –– FNIR(1600000, T, L+1) = 0.0534, FPIR=0.001000 vs. lowest 0.0122 from sensetime_003

Mugshot profile ranking 6 (out of 195) –– FNIR(1600000, T, L+1) = 0.4402, FPIR=0.001000 vs. lowest 0.1331 from hr_000

Immigration visa–border ranking 20 (out of 146) –– FNIR(1600000, T, L+1) = 0.0210, FPIR=0.001000 vs. lowest 0.0049 from hr_000

Immigration visa–kiosk ranking 14 (out of 141) –– FNIR(1600000, T, L+1) = 0.1703, FPIR=0.001000 vs. lowest 0.0996 from hr_000
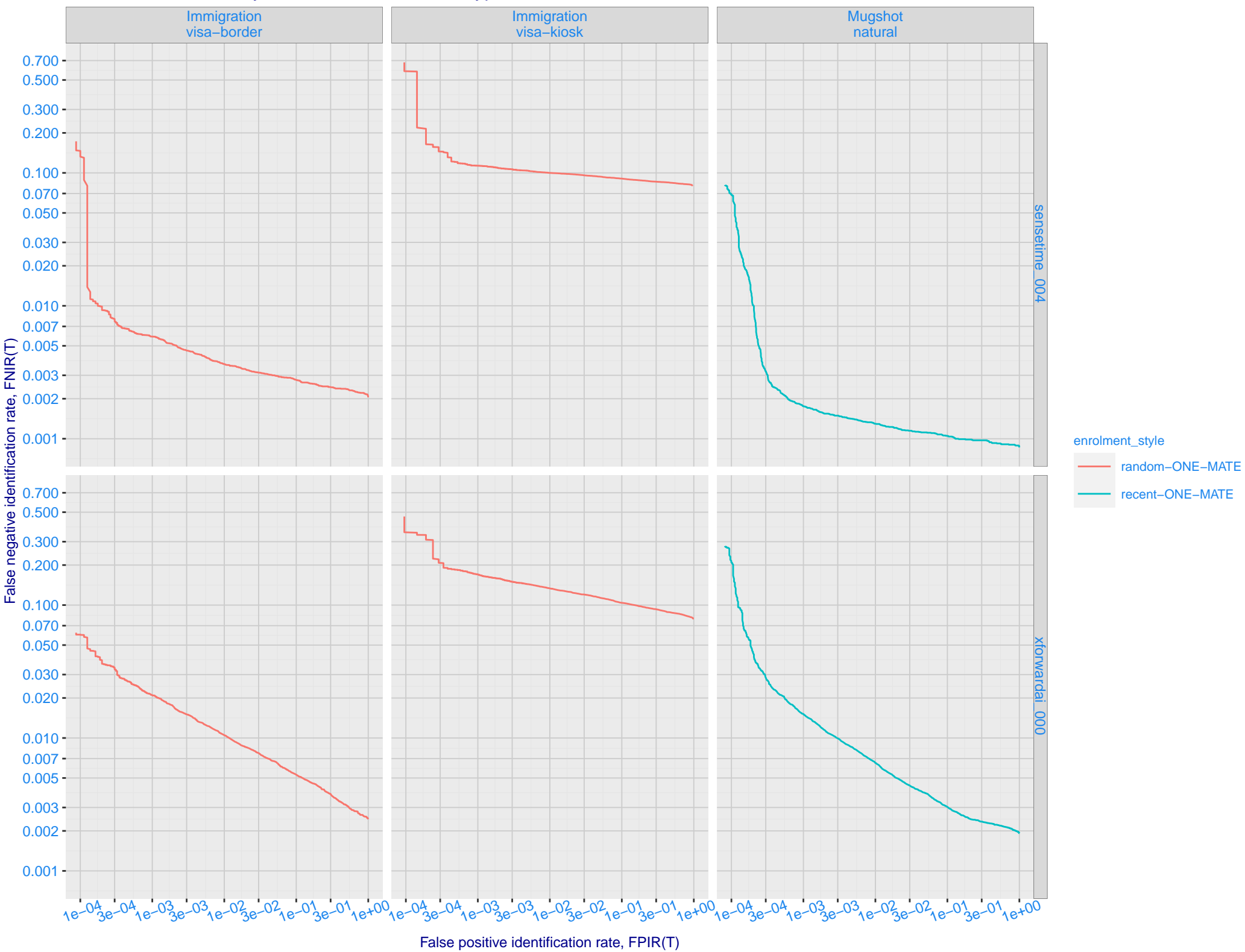
B: Mugshot natural images, identification mode: FNIR(N, L+1, T) vs. most accurate (sensetime_004)
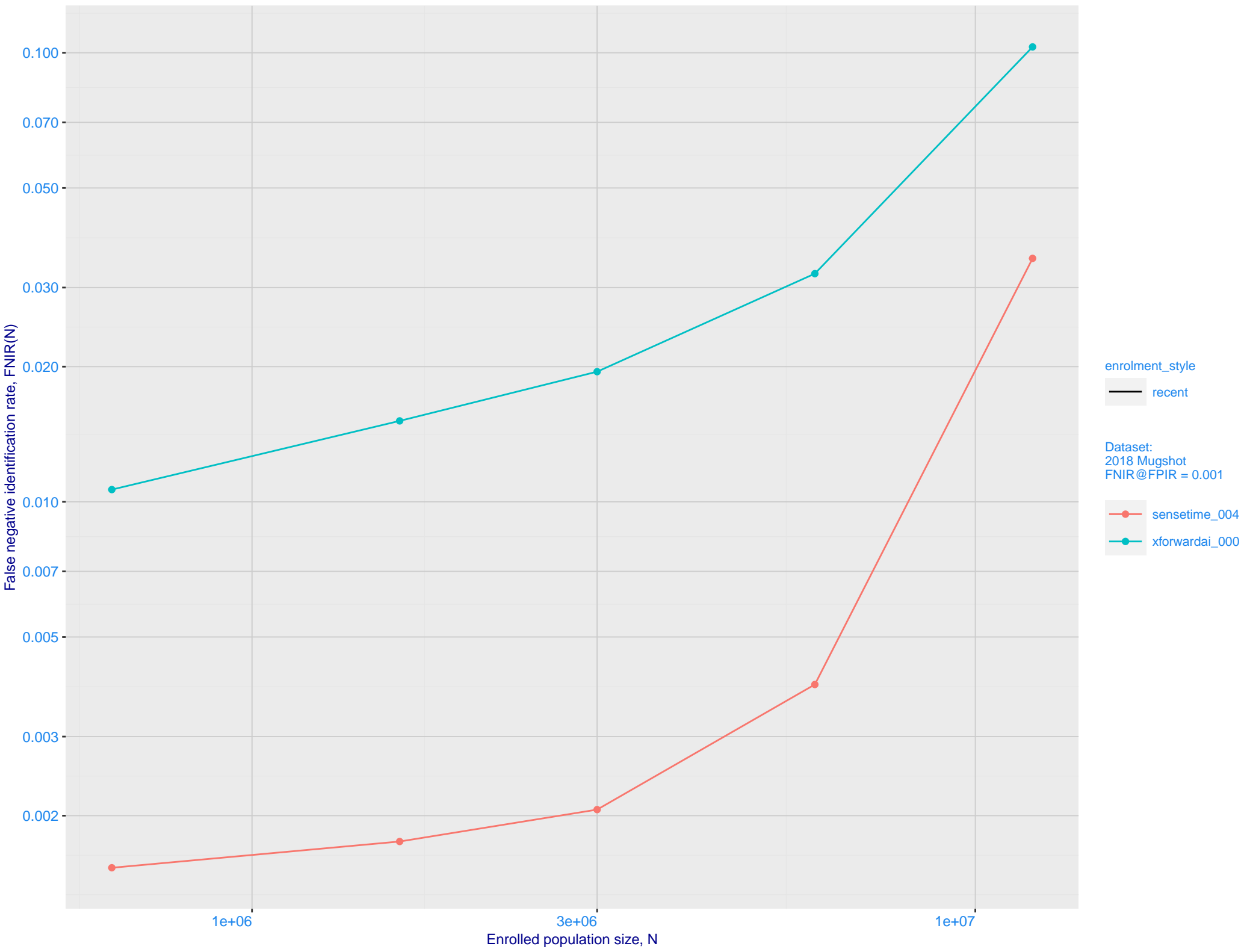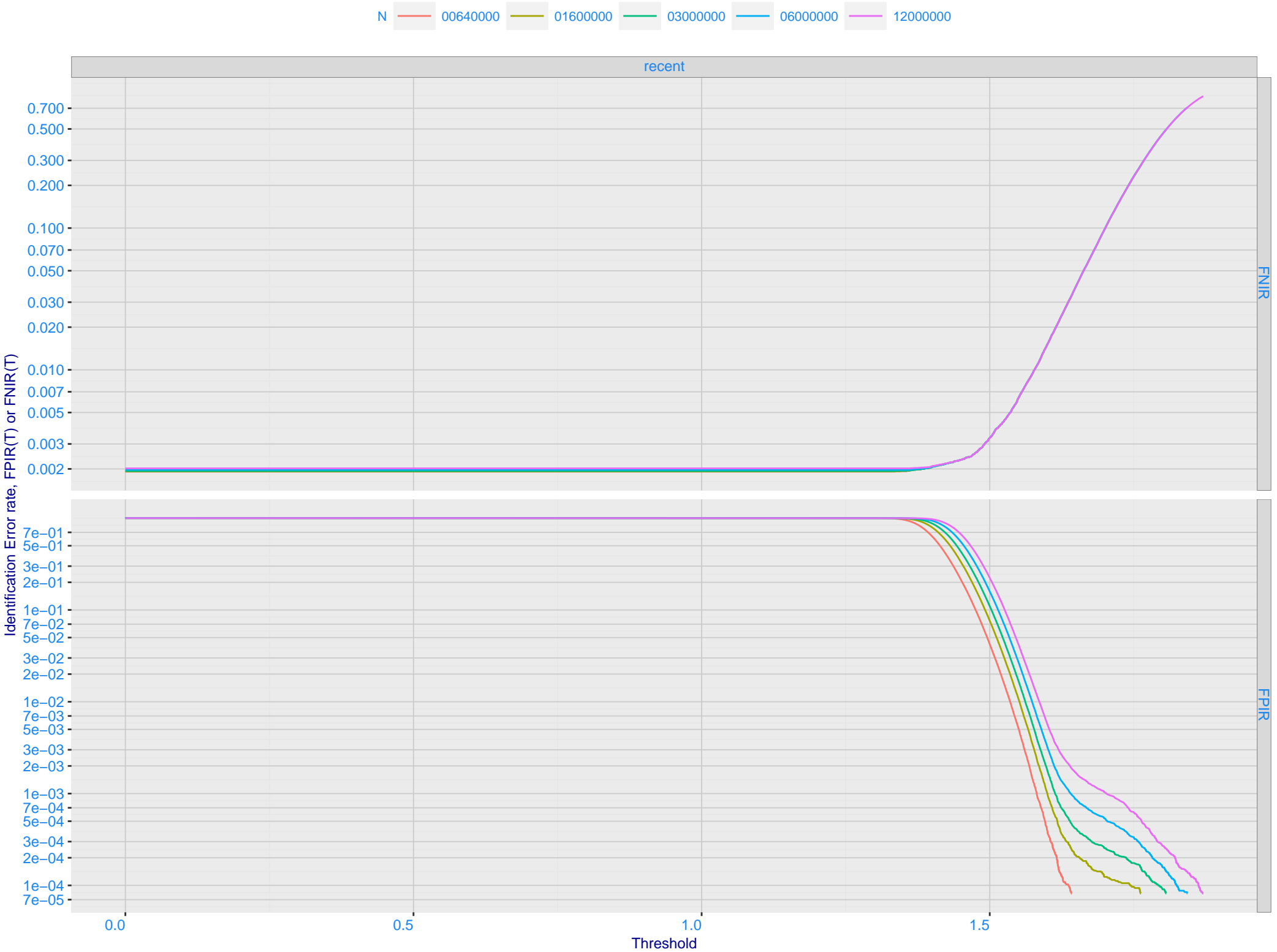
C: Evolution of accuracy for XFORWARDAI algorithms on three datasets 2018 – present
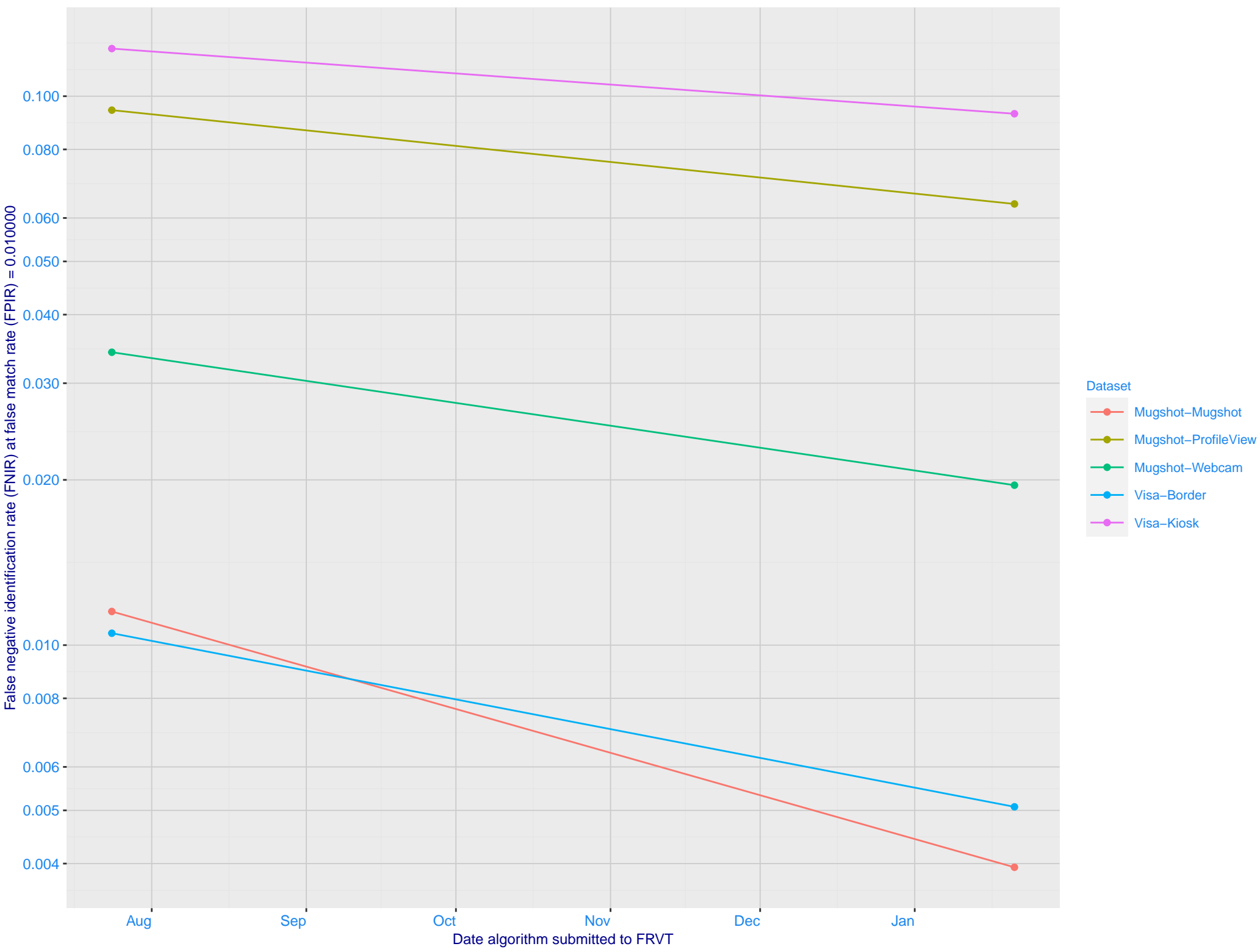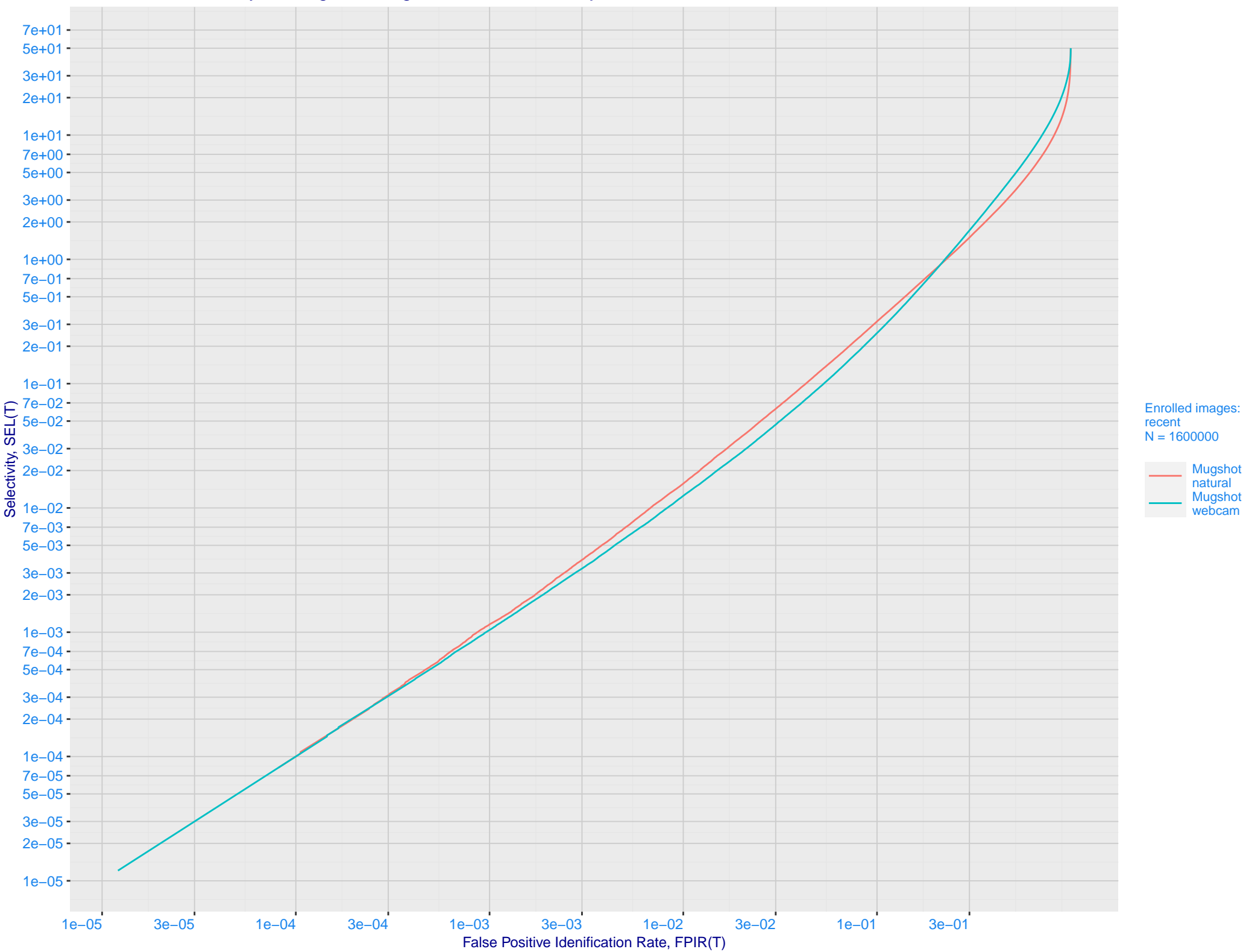
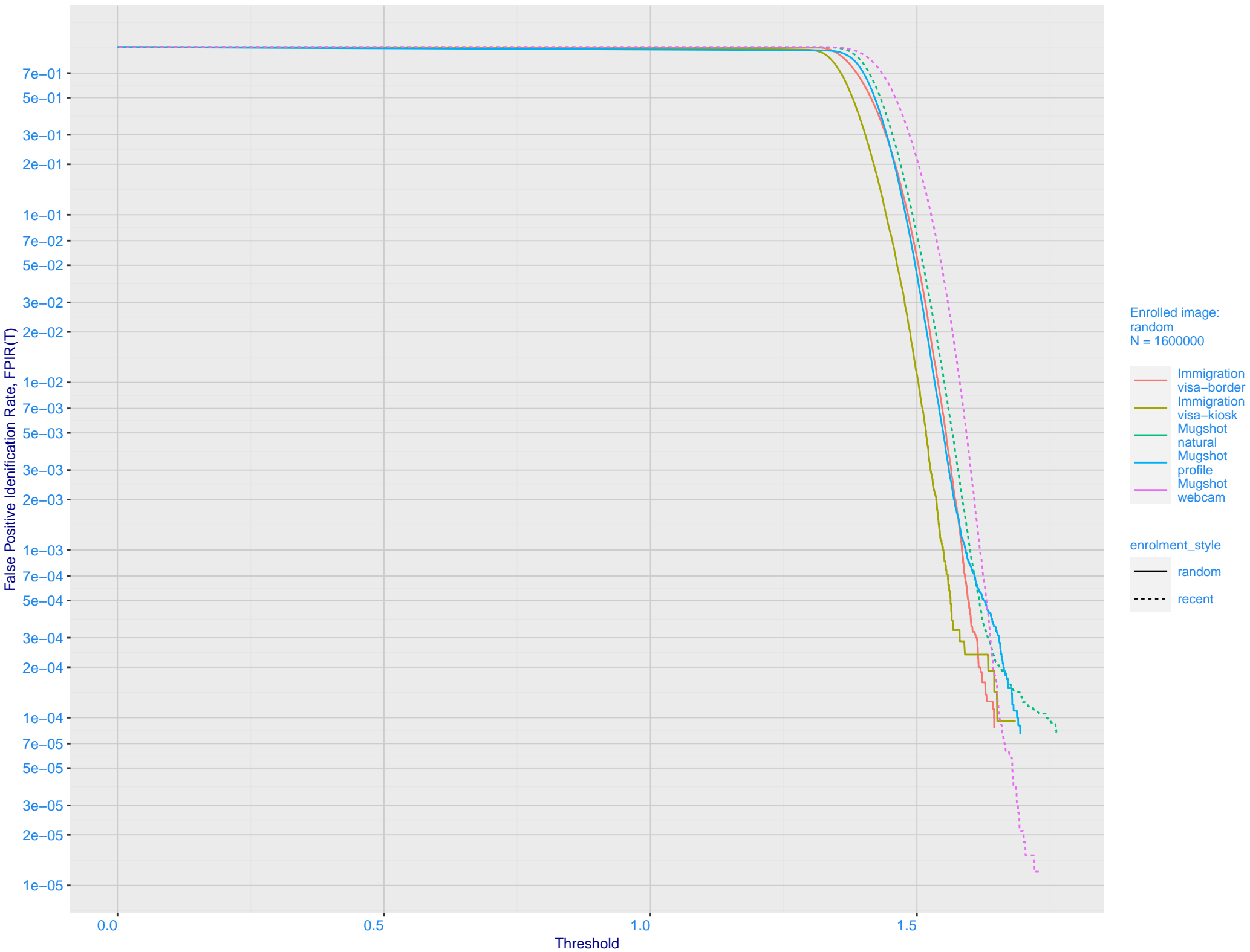D: 1:N error tradeoff by dataset and enrollment type. N = 1600000 individuals

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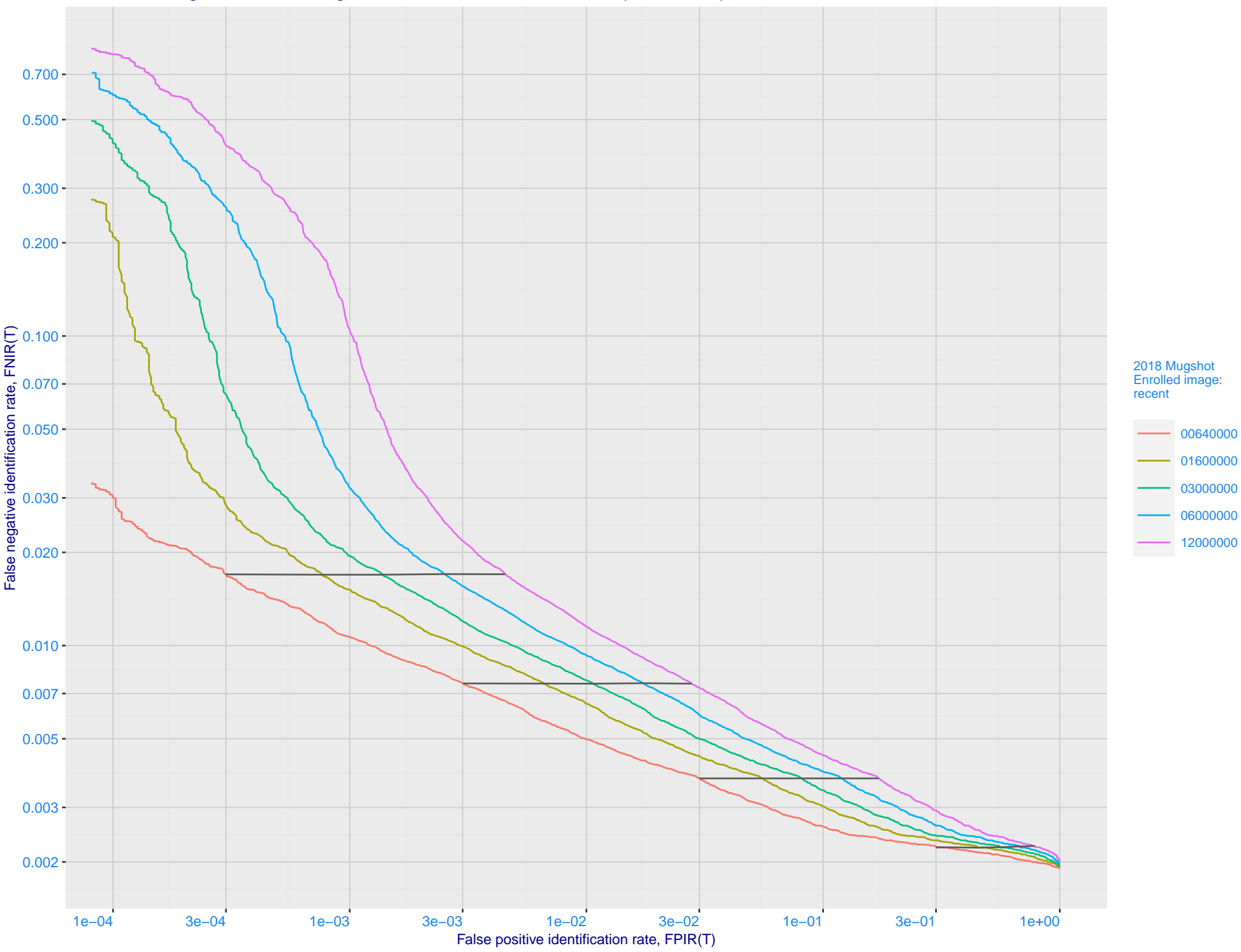
F: FPIR vs. Selectivity for mugshot images, N = 1600000 subjects enrolled with one recent mate
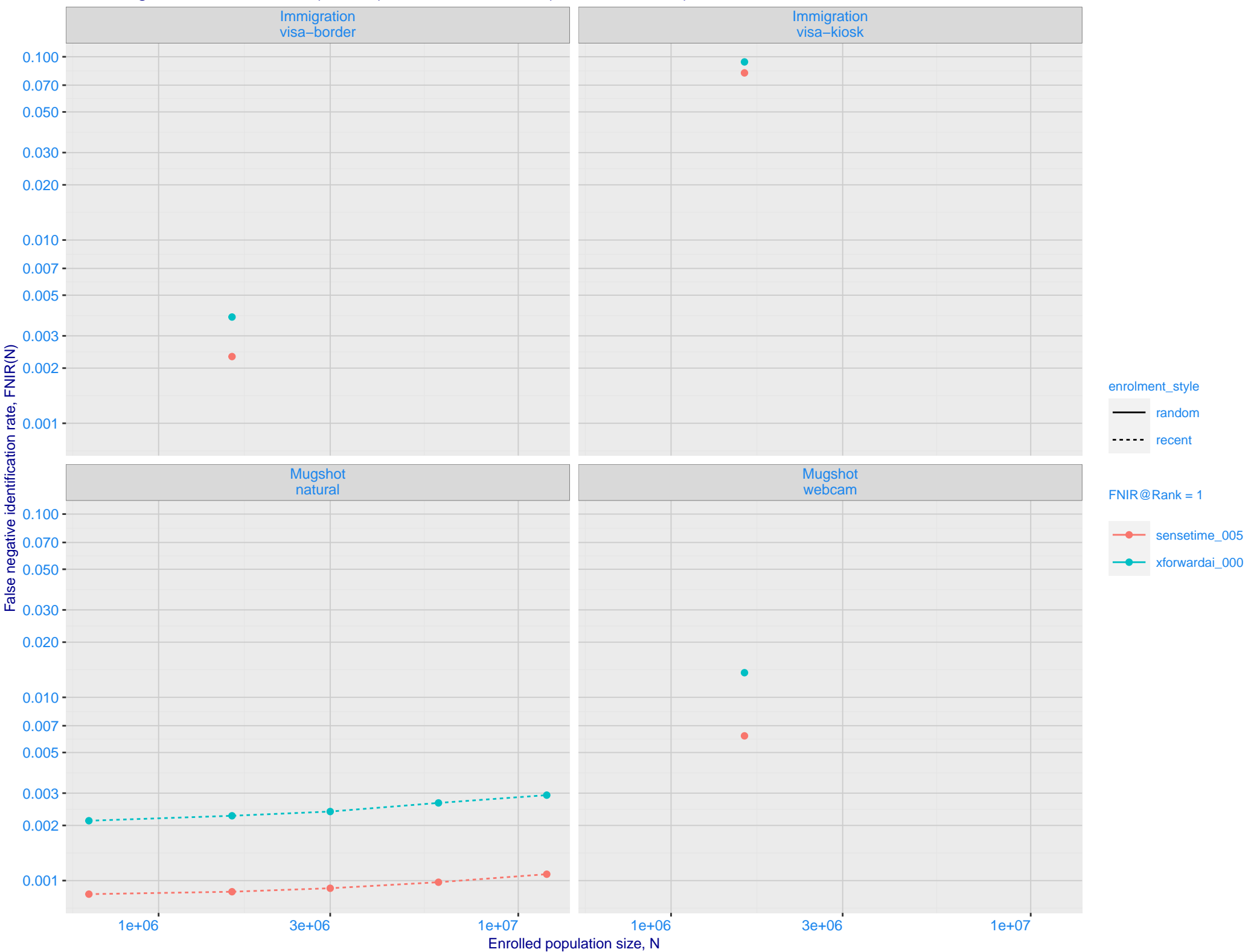
G: FPIR dependence on T by probe type for N = 1600000 subjects

H: DET for Mugshot natural images and various N. Links connect points of equal threshold.

False negative identification rate, FNIR(T) (vertical axis)

False positive identification rate, FPIR(T) (horizontal axis)

2018 Mugshot
Enrolled image:
recent

- 00640000
- 01600000
- 03000000
- 06000000
- 12000000

I: Investigational mode: FNIR(N, 1, 0) vs. most accurate (sensetime_005)

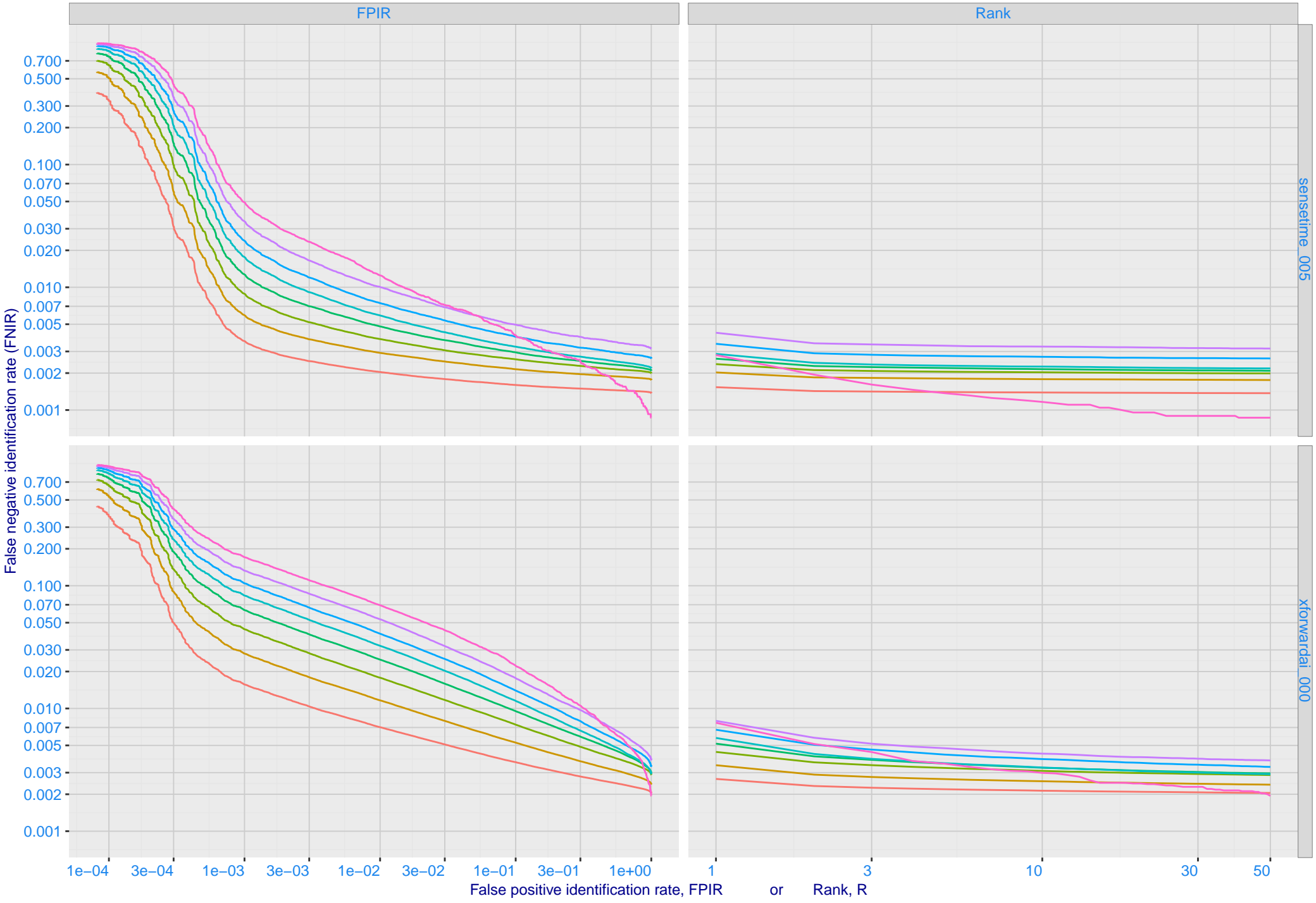J: Investigational mode: FNIR(1600000, R, 0) by probe type
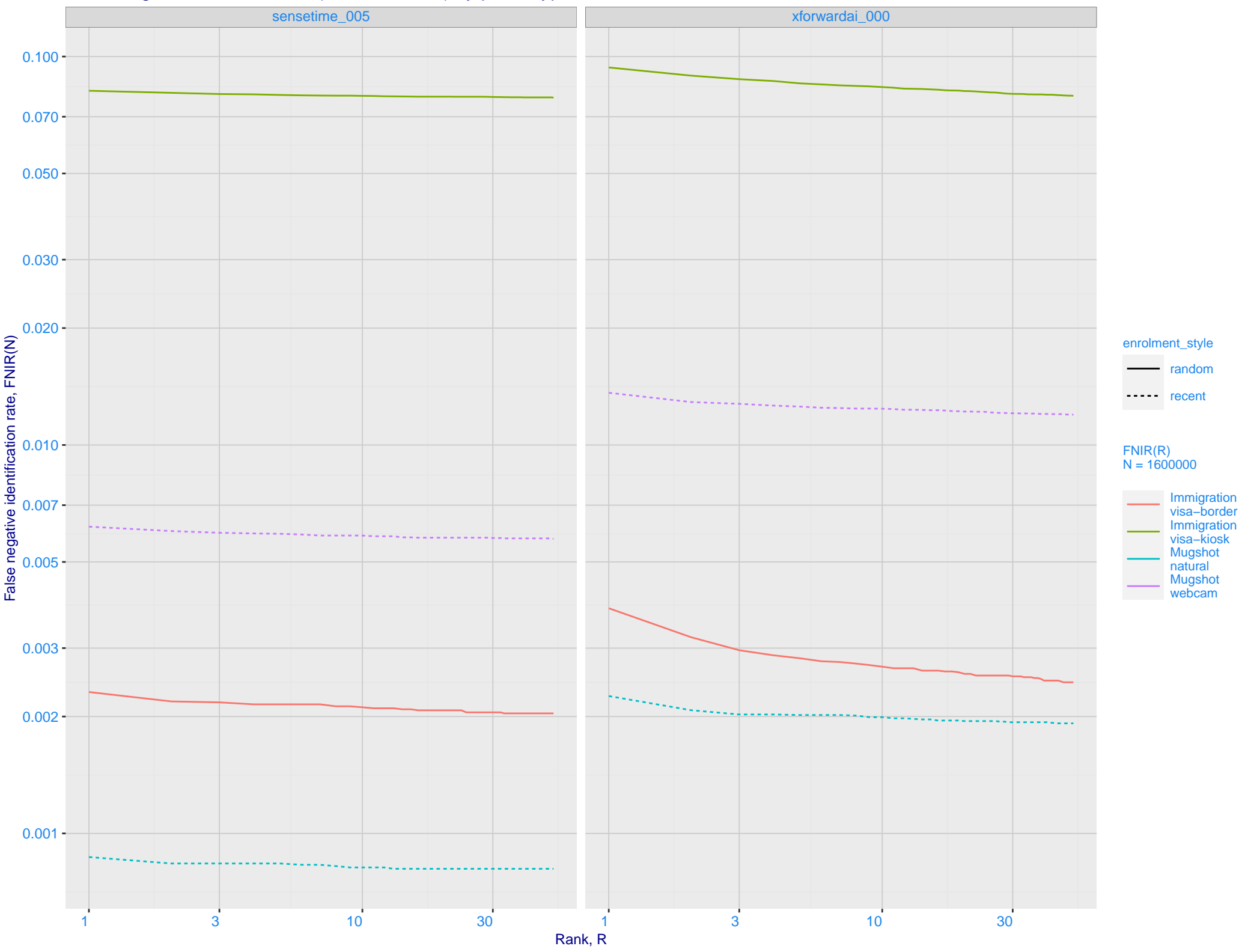
Template duration; search duration vs. N. The blue and pink ribbon covers 95 percent of observed measurements. The template generation time is independent of N. The log and power–law models are fit to the first two (N,T) observations
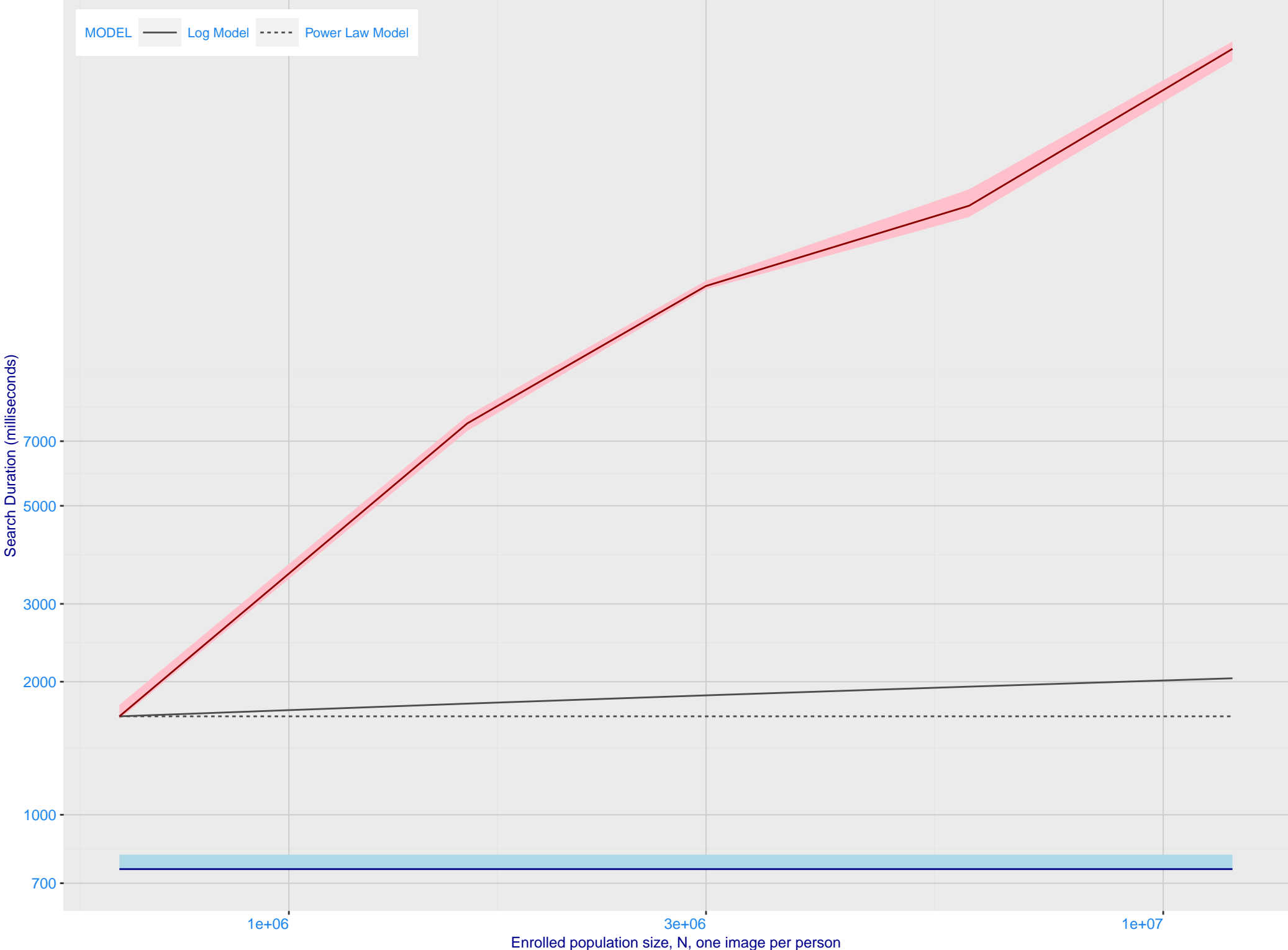
M: Identification FNIR(N, T, L+1) and Investigational FNIR(N, 0, R) under ageing

N: Decline of genuine scores with ageing