A: Datasheet

Algorithm: lookman_005

Developer: Lookman Electroplast Industries

Submission Date: 2019_09_16

Template size: 548 bytes

Template time (2.5 percentile): 503 msec

Template time (median): 506 msec

Template time (97.5 percentile): 552 msec

Investigation:

Frontal mugshot ranking 121 (out of 279) –– FNIR(1600000, 0, 1) = 0.0080 vs. lowest 0.0009 from sensetime_005

Mugshot webcam ranking 134 (out of 241) –– FNIR(1600000, 0, 1) = 0.0364 vs. lowest 0.0062 from sensetime_005

Mugshot profile ranking 186 (out of 210) –– FNIR(1600000, 0, 1) = 0.9724 vs. lowest 0.0587 from xforwardai_002

Immigration visa–border ranking 103 (out of 168) –– FNIR(1600000, 0, 1) = 0.0348 vs. lowest 0.0013 from visionlabs_010

Immigration visa–kiosk ranking 102 (out of 165) –– FNIR(1600000, 0, 1) = 0.2372 vs. lowest 0.0568 from cloudwalk_hr_000

Identification:

Frontal mugshot ranking 60 (out of 279) –– FNIR(1600000, T, L+1) = 0.0301, FPIR=0.001000 vs. lowest 0.0018 from sensetime_004
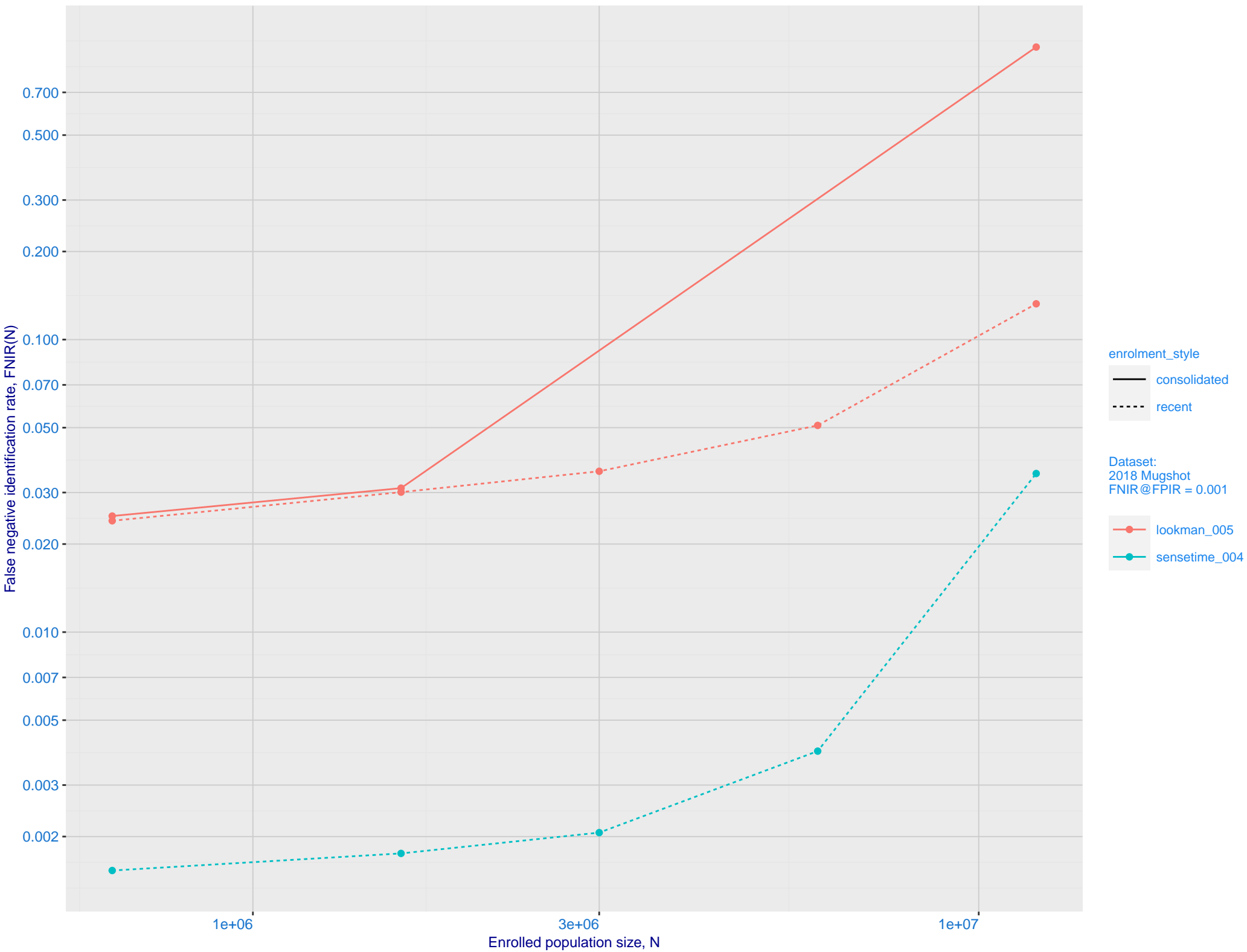
Mugshot webcam ranking 56 (out of 236) –– FNIR(1600000, T, L+1) = 0.0855, FPIR=0.001000 vs. lowest 0.0122 from sensetime_003

Mugshot profile ranking 60 (out of 209) –– FNIR(1600000, T, L+1) = 0.9775, FPIR=0.001000 vs. lowest 0.1331 from cloudwalk_hr_000
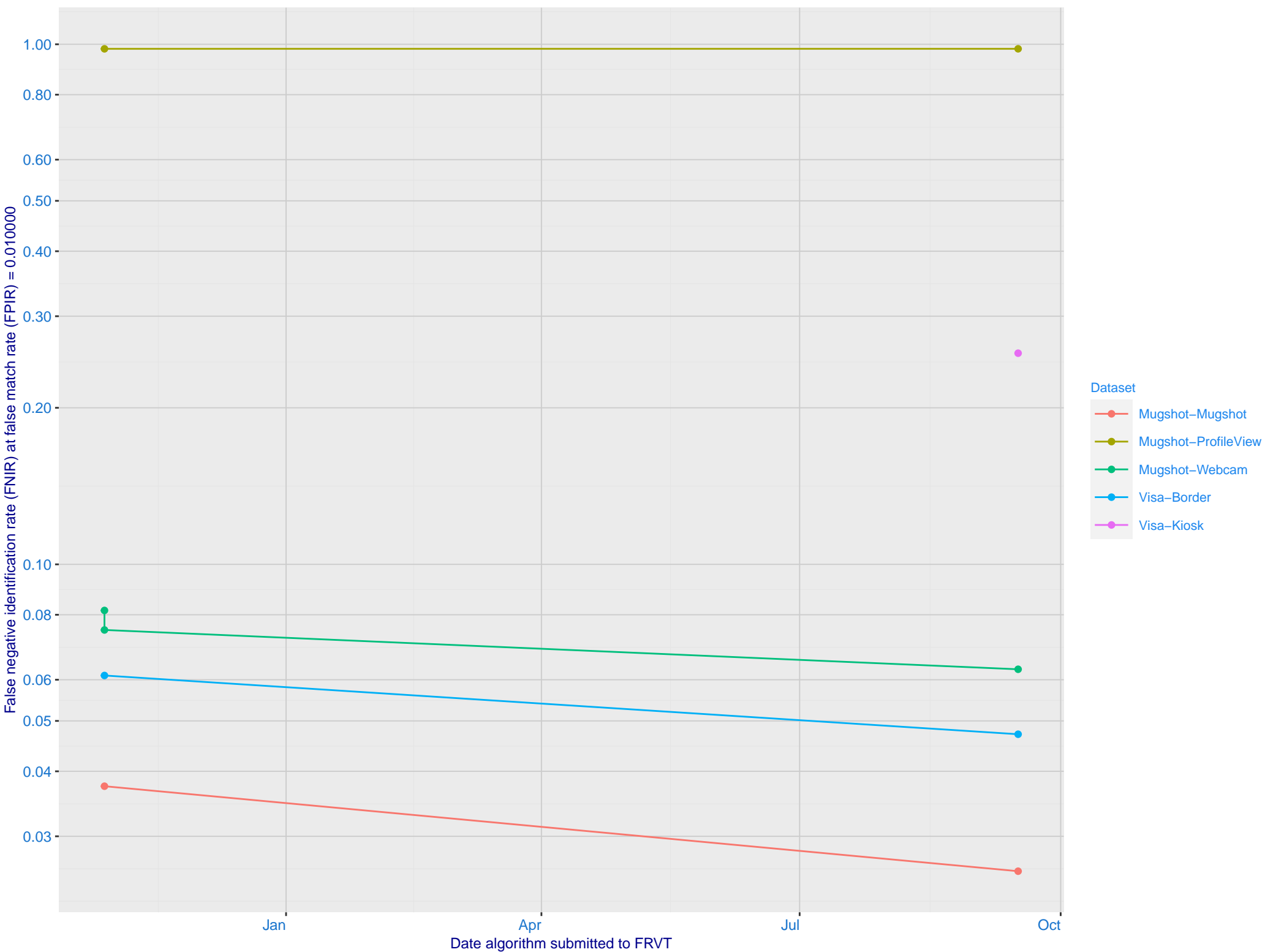
Immigration visa–border ranking 63 (out of 167) –– FNIR(1600000, T, L+1) = 0.0624, FPIR=0.001000 vs. lowest 0.0047 from idemia_008

Immigration visa–kiosk ranking 47 (out of 162) –– FNIR(1600000, T, L+1) = 0.3093, FPIR=0.001000 vs. lowest 0.0996 from cloudwalk_hr_000
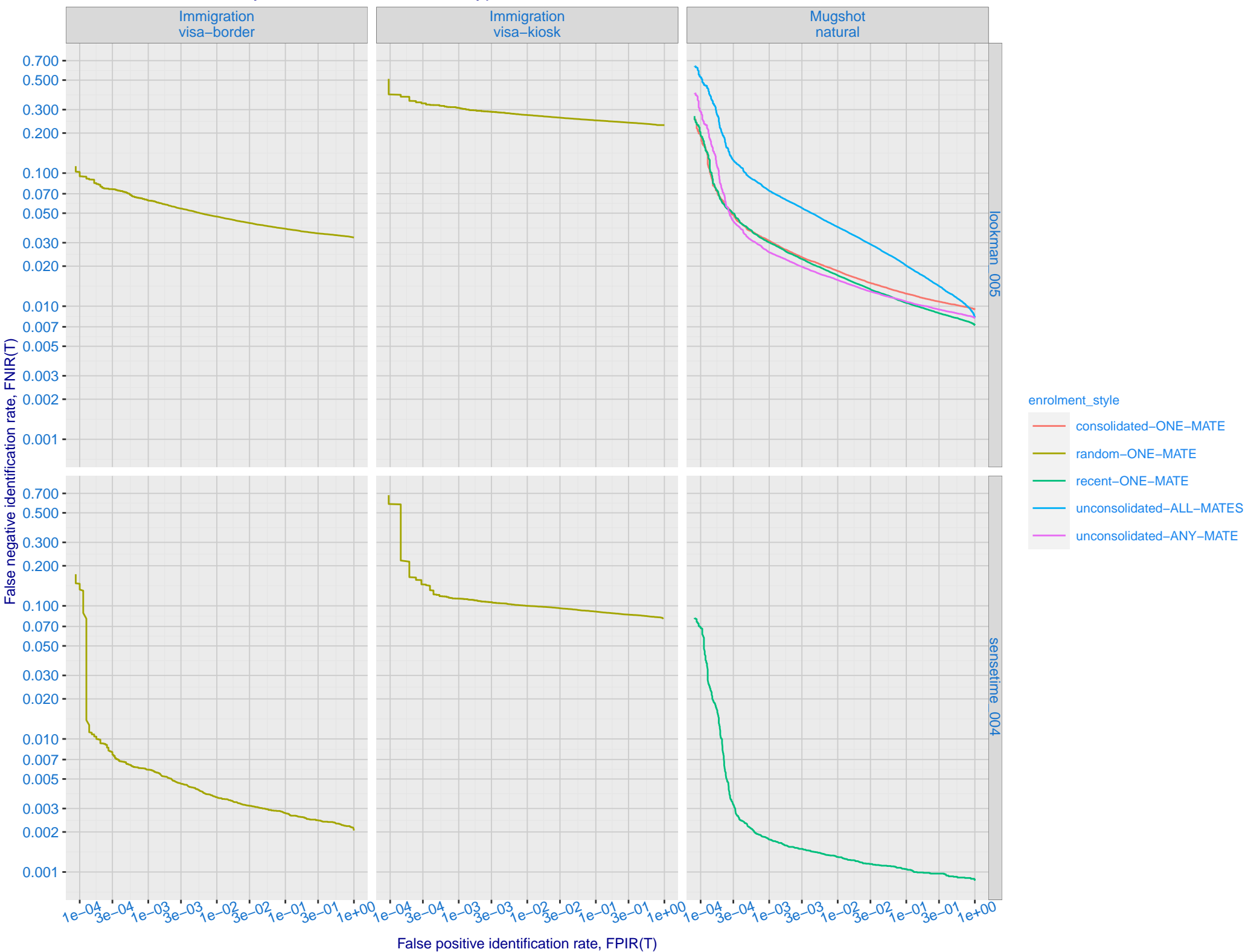
B: Mugshot natural images, identification mode: FNIR(N, L+1, T) vs. most accurate (sensetime_004)

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

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

Date algorithm submitted to FRVT

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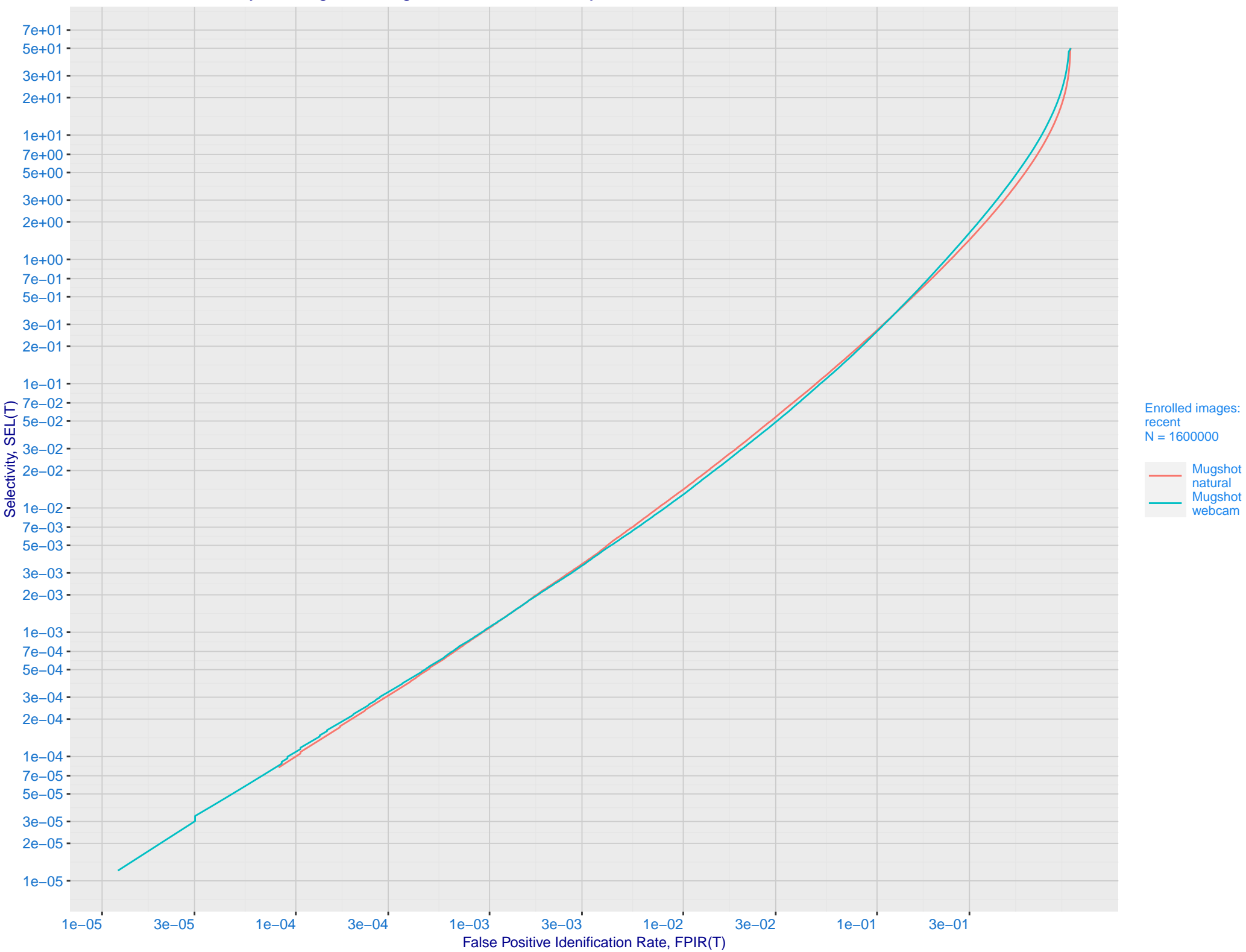- Mugshot–ProfileView
- Mugshot–Webcam
- Visa–Border
- Visa–Kiosk

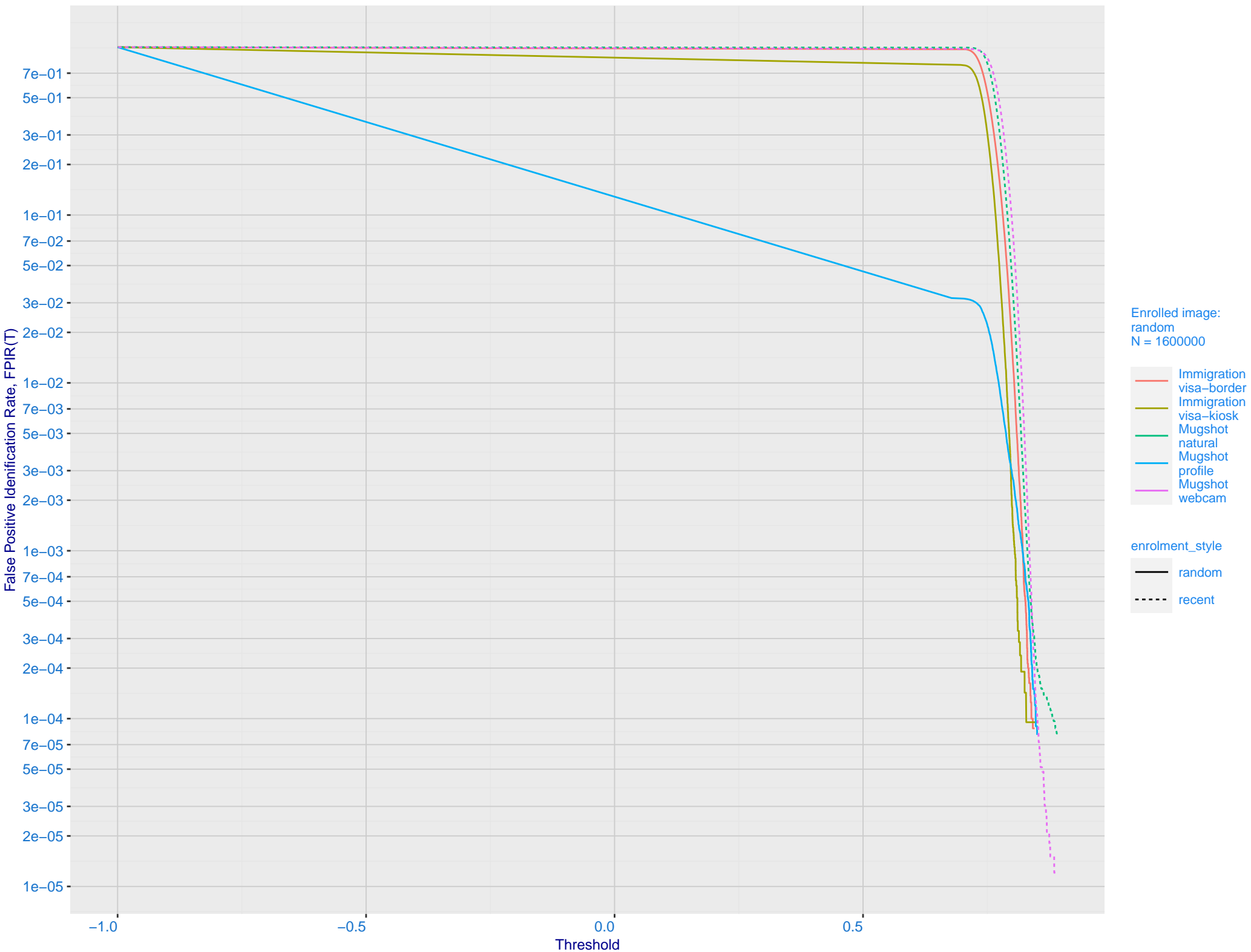D: 1:N error tradeoff by dataset and enrollment type. N = 1600000 individuals

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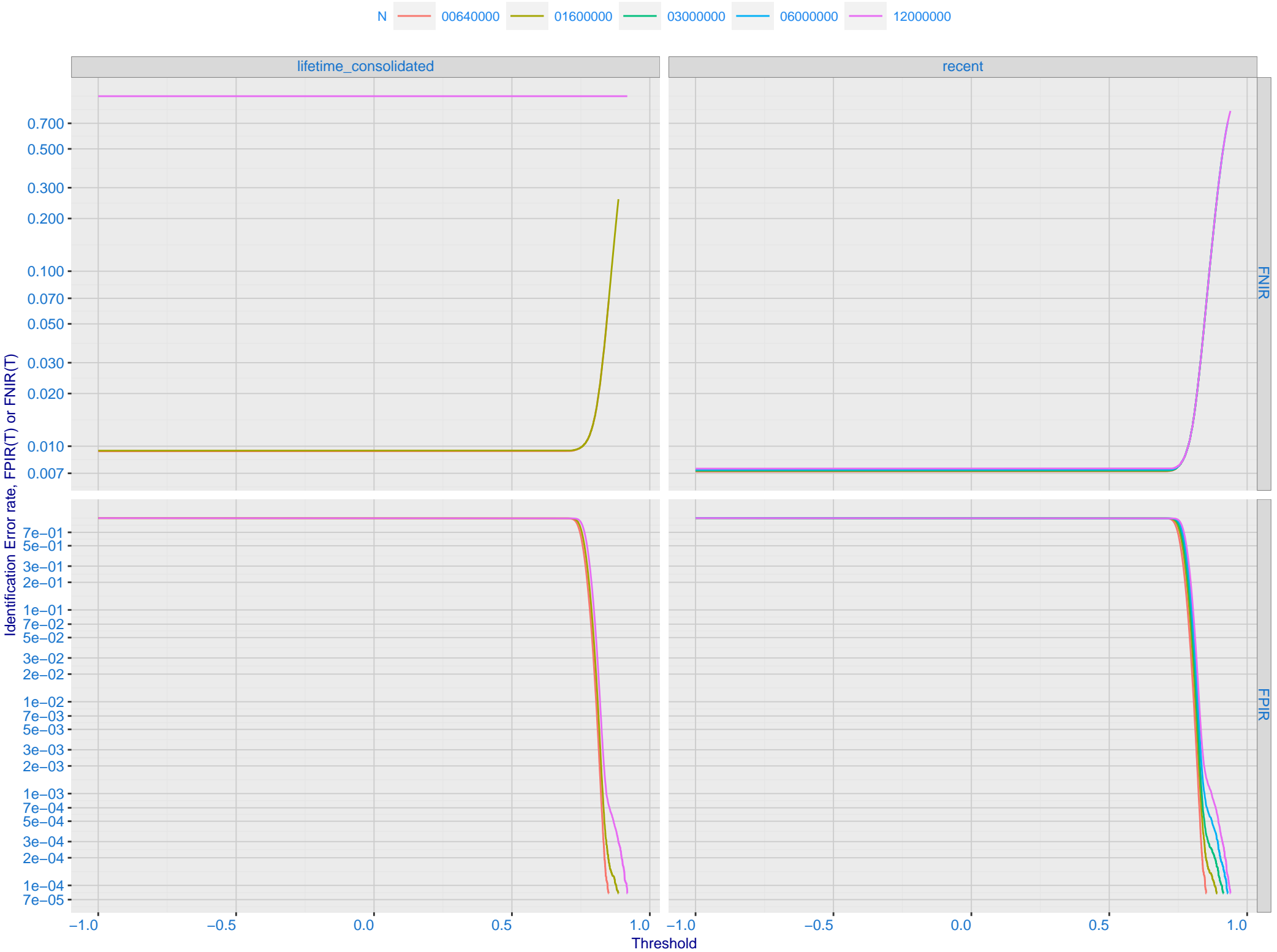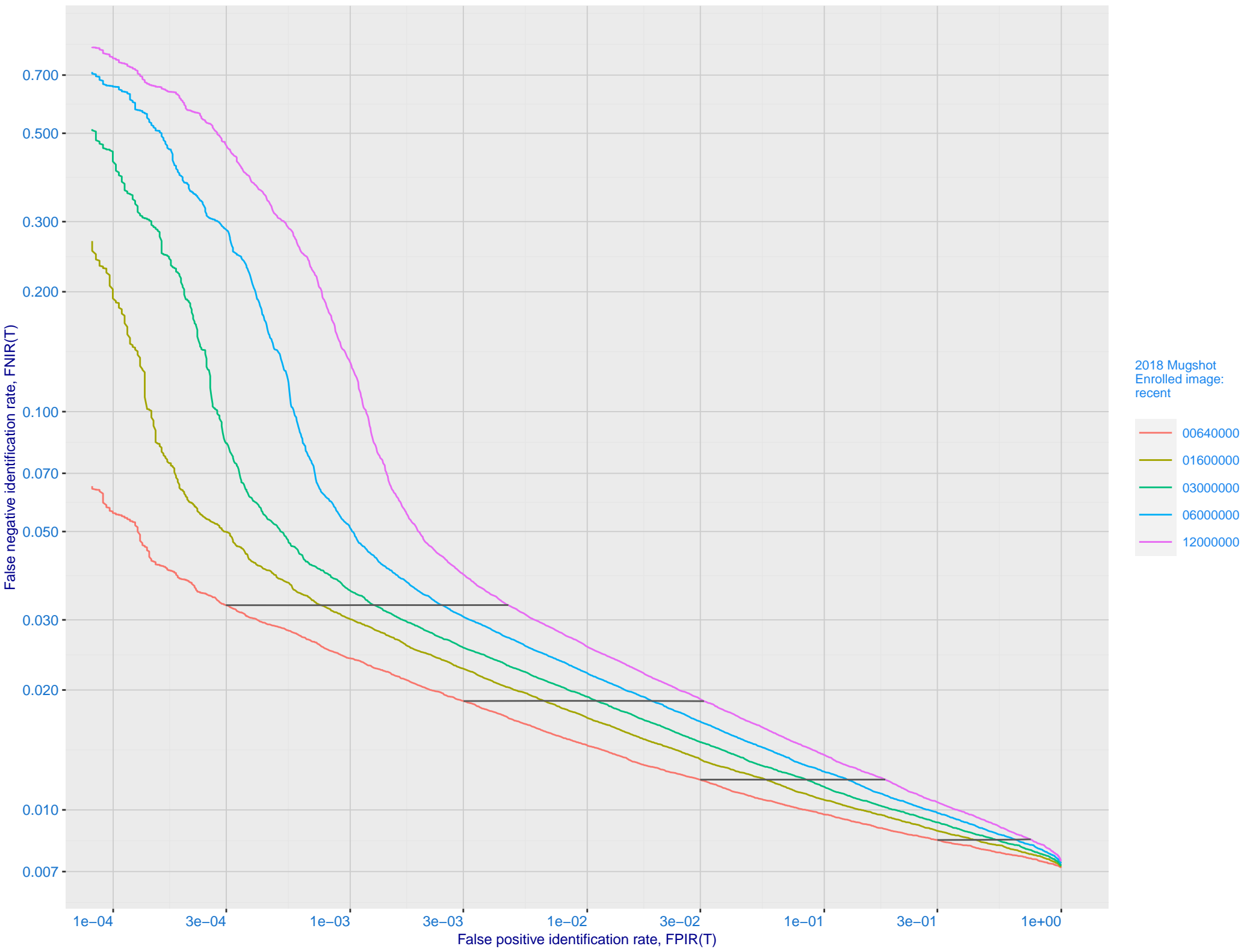
F: FPIR vs. Selectivity for mugshot images, N = 1600000 subjects enrolled with one recent mate
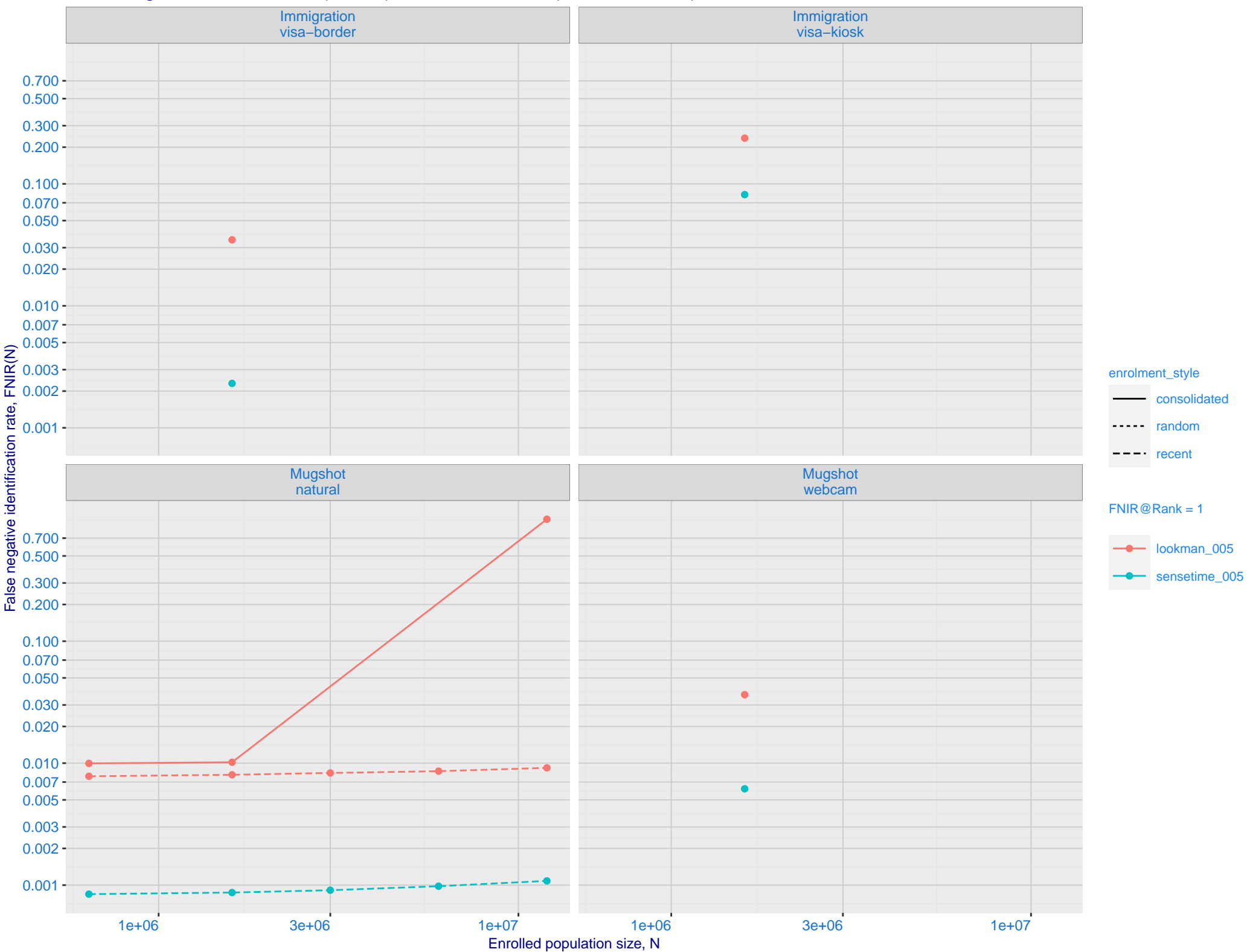
G: FPIR dependence on T by probe type for N = 1600000 subjects

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

False negative identification rate, FNIR(T)

False positive identification rate, FPIR(T)

2018 Mugshot
Enrolled image:
recent

— 00640000
— 01600000
— 03000000
— 06000000
— 12000000

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

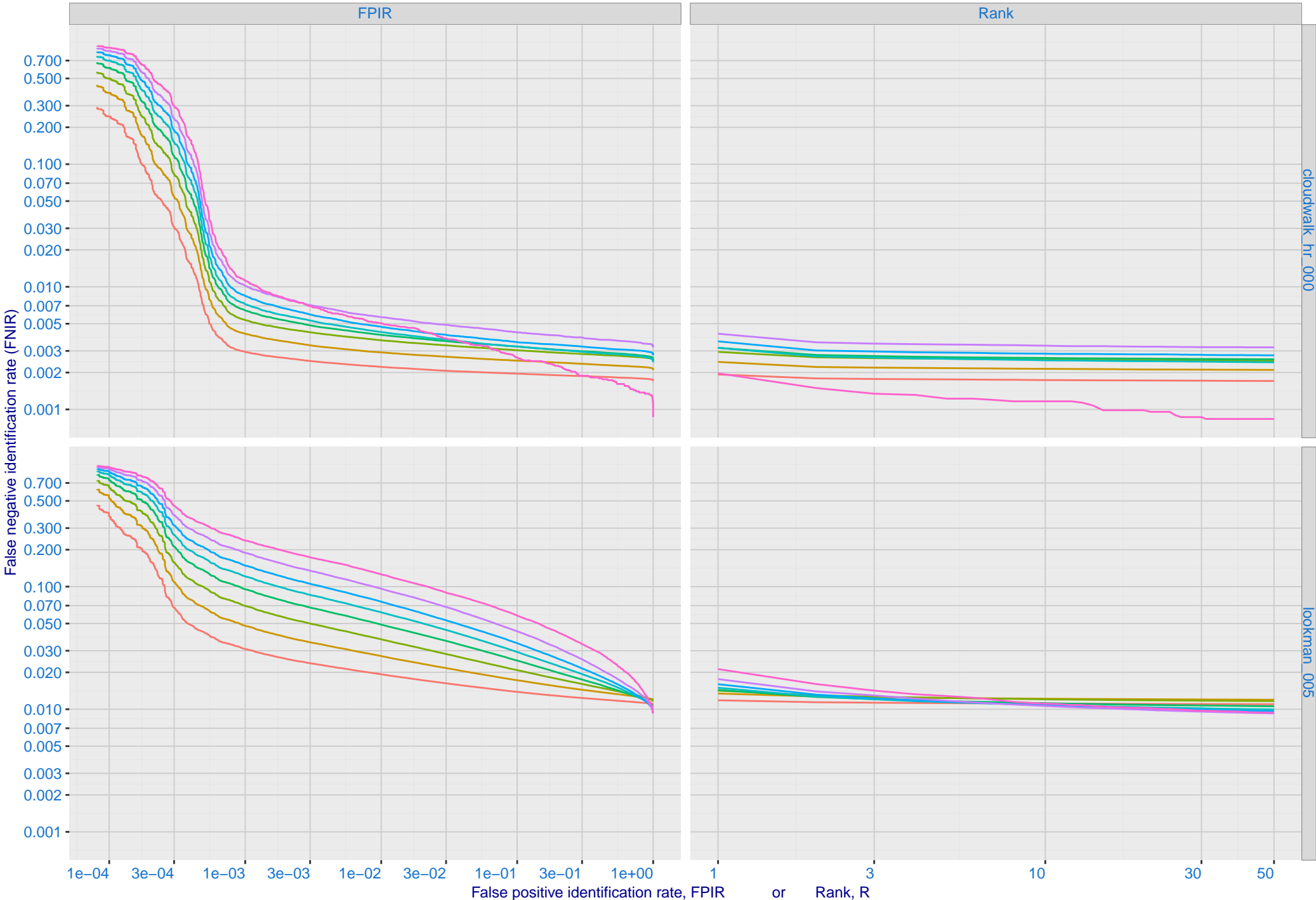L: Investigational mode: FNIR(1600000, R, 0) by probe type
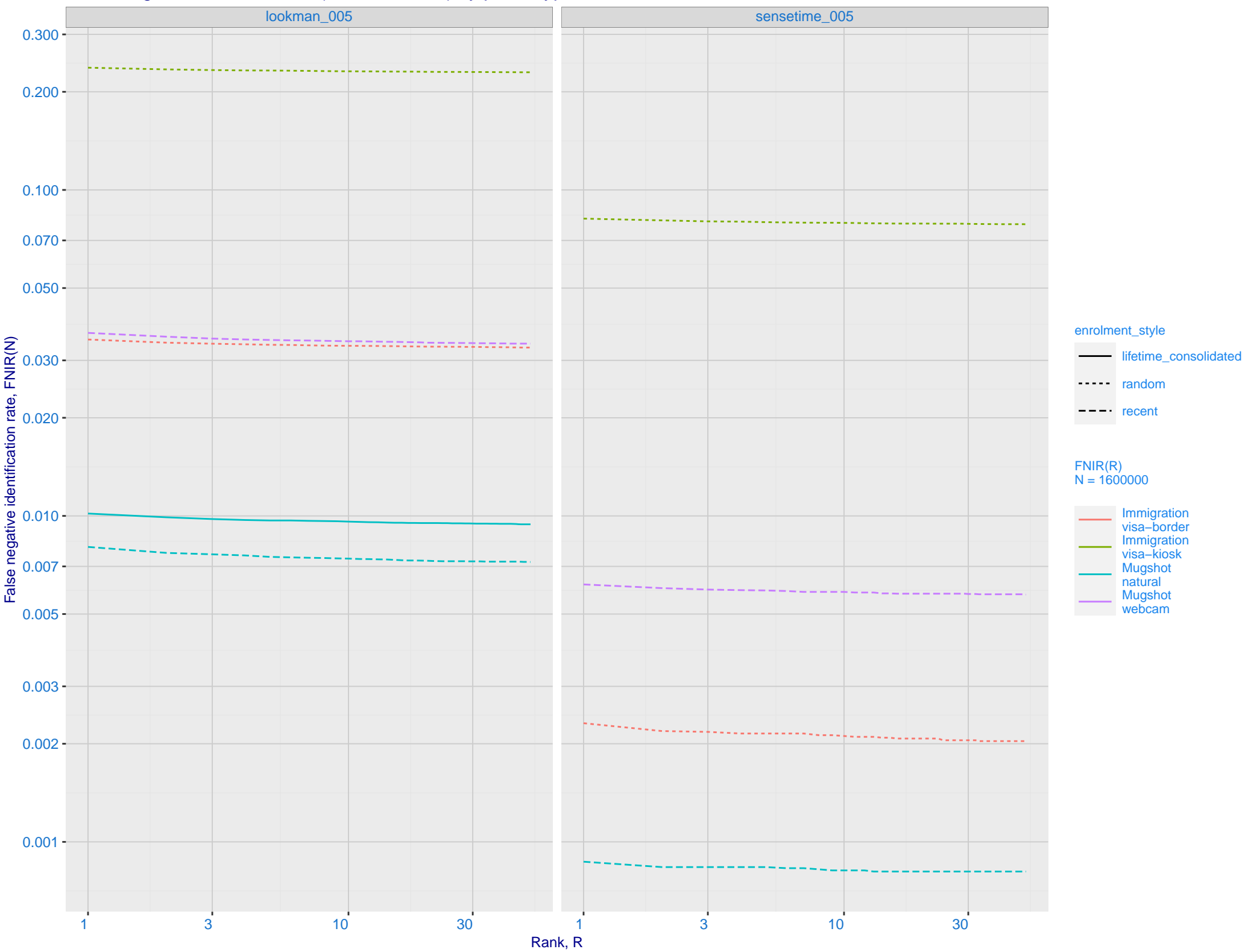
M: Template duration; search duration vs. N. The blue and pink ribbon covers 95 percent of observed measurements. The template generation time is independent of N. The log and power–law models are fit to the first two (N,T) observations
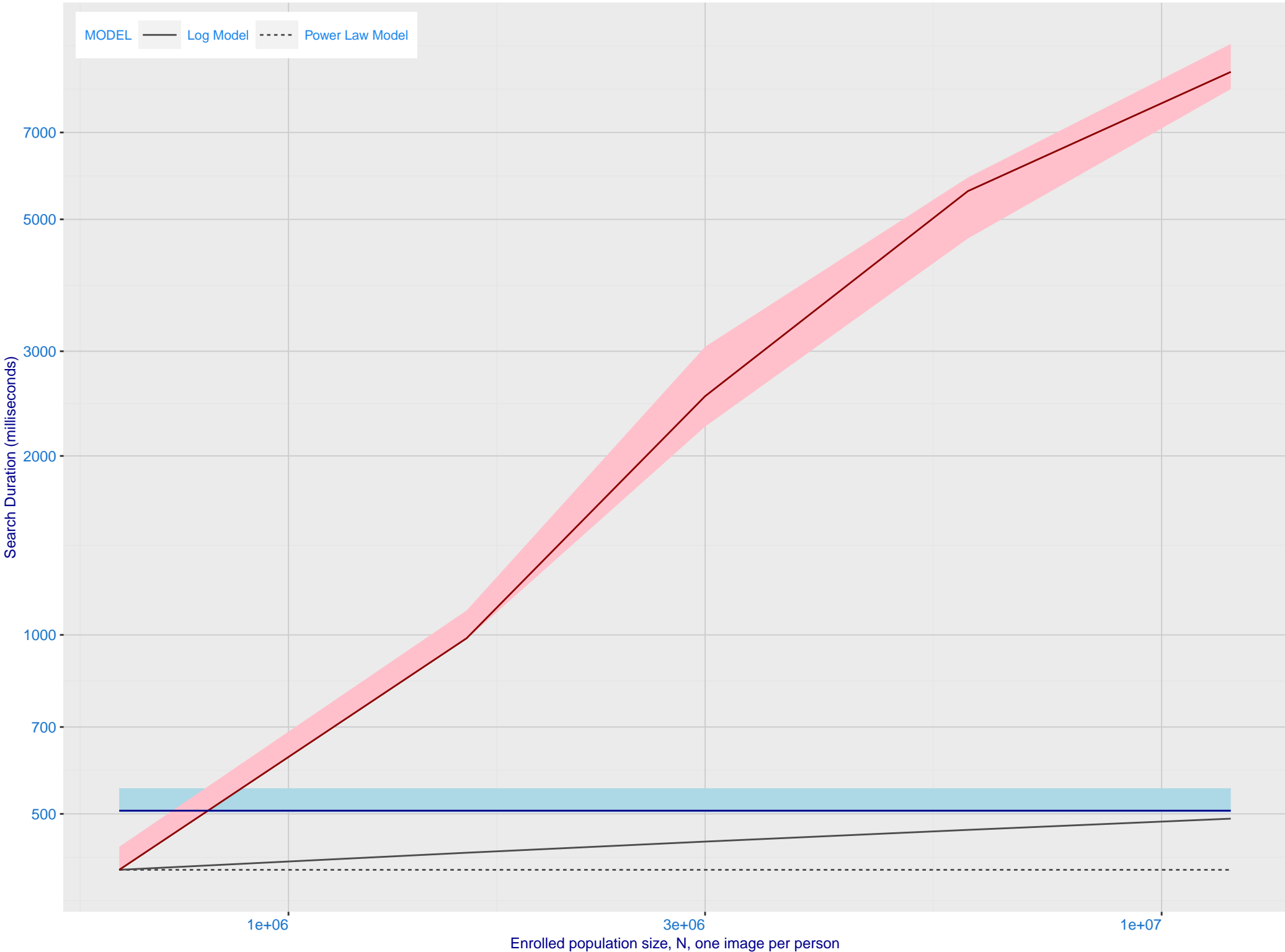
Q: Identification FNIR(N, T, L+1) and Investigational FNIR(N, 0, R) under ageing

R: Decline of genuine scores with ageing, with some eventually dropping below typical thresholds shown by the horizontal lines