A: Datasheet

Algorithm: tech5_001

Developer: Tech5 SA

Submission Date: 2019_08_19

Template size: 1536 bytes

Template time (2.5 percentile): 861 msec

Template time (median): 887 msec

Template time (97.5 percentile): 974 msec

Investigation:

Frontal mugshot ranking 80 (out of 279) –– FNIR(1600000, 0, 1) = 0.0040 vs. lowest 0.0009 from sensetime_005

Mugshot webcam ranking 64 (out of 241) –– FNIR(1600000, 0, 1) = 0.0166 vs. lowest 0.0062 from sensetime_005

Mugshot profile ranking 72 (out of 210) –– FNIR(1600000, 0, 1) = 0.5841 vs. lowest 0.0587 from xforwardai_002

Immigration visa–border ranking 55 (out of 168) –– FNIR(1600000, 0, 1) = 0.0066 vs. lowest 0.0013 from visionlabs_010

Immigration visa–kiosk ranking 40 (out of 165) –– FNIR(1600000, 0, 1) = 0.1066 vs. lowest 0.0568 from cloudwalk_hr_000

Identification:

Frontal mugshot ranking 108 (out of 279) –– FNIR(1600000, T, L+1) = 0.0569, FPIR=0.001000 vs. lowest 0.0018 from sensetime_004
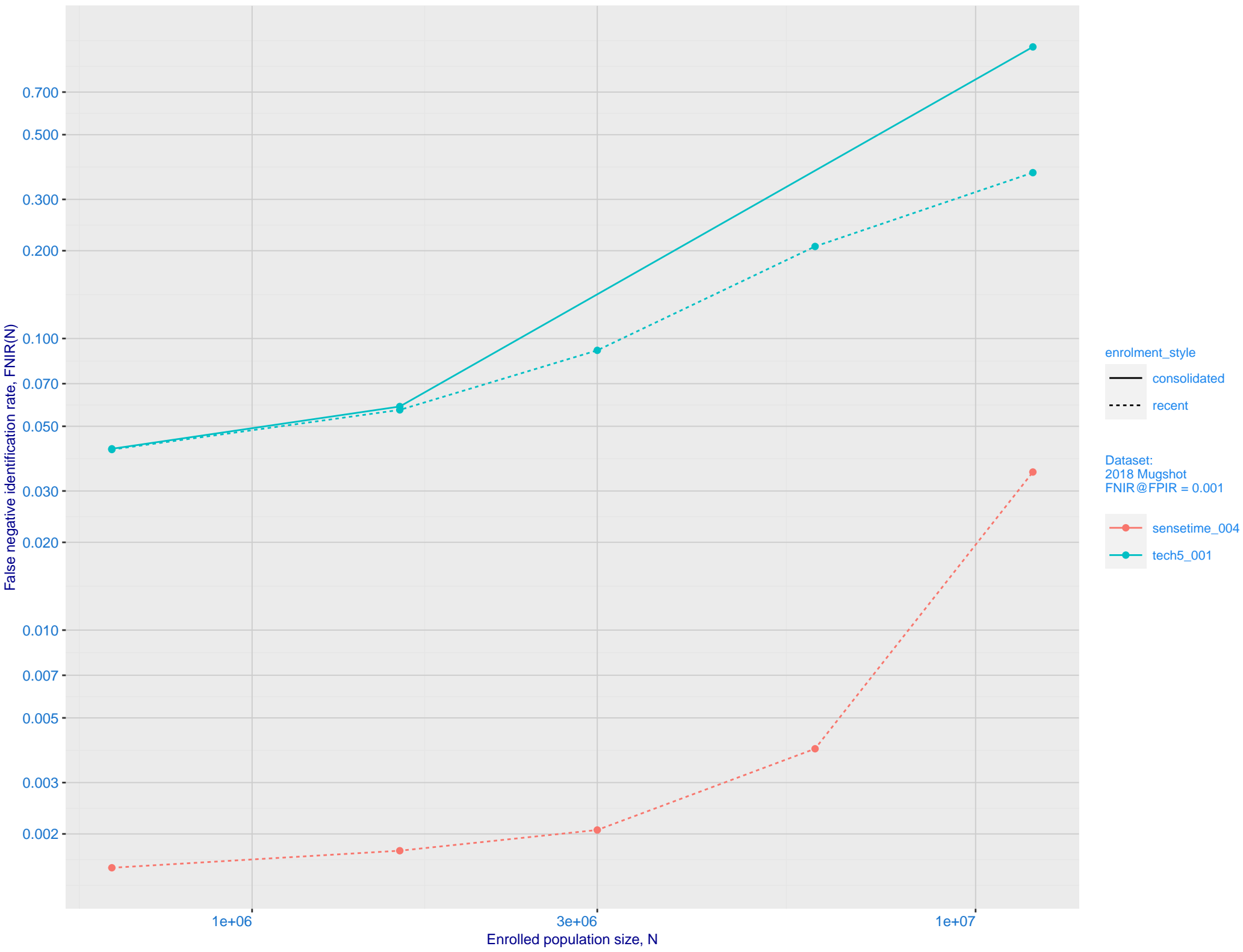
Mugshot webcam ranking 223 (out of 236) –– FNIR(1600000, T, L+1) = 0.9341, FPIR=0.001000 vs. lowest 0.0122 from sensetime_003

Mugshot profile ranking 201 (out of 209) –– FNIR(1600000, T, L+1) = 1.0000, FPIR=0.001000 vs. lowest 0.1331 from cloudwalk_hr_000
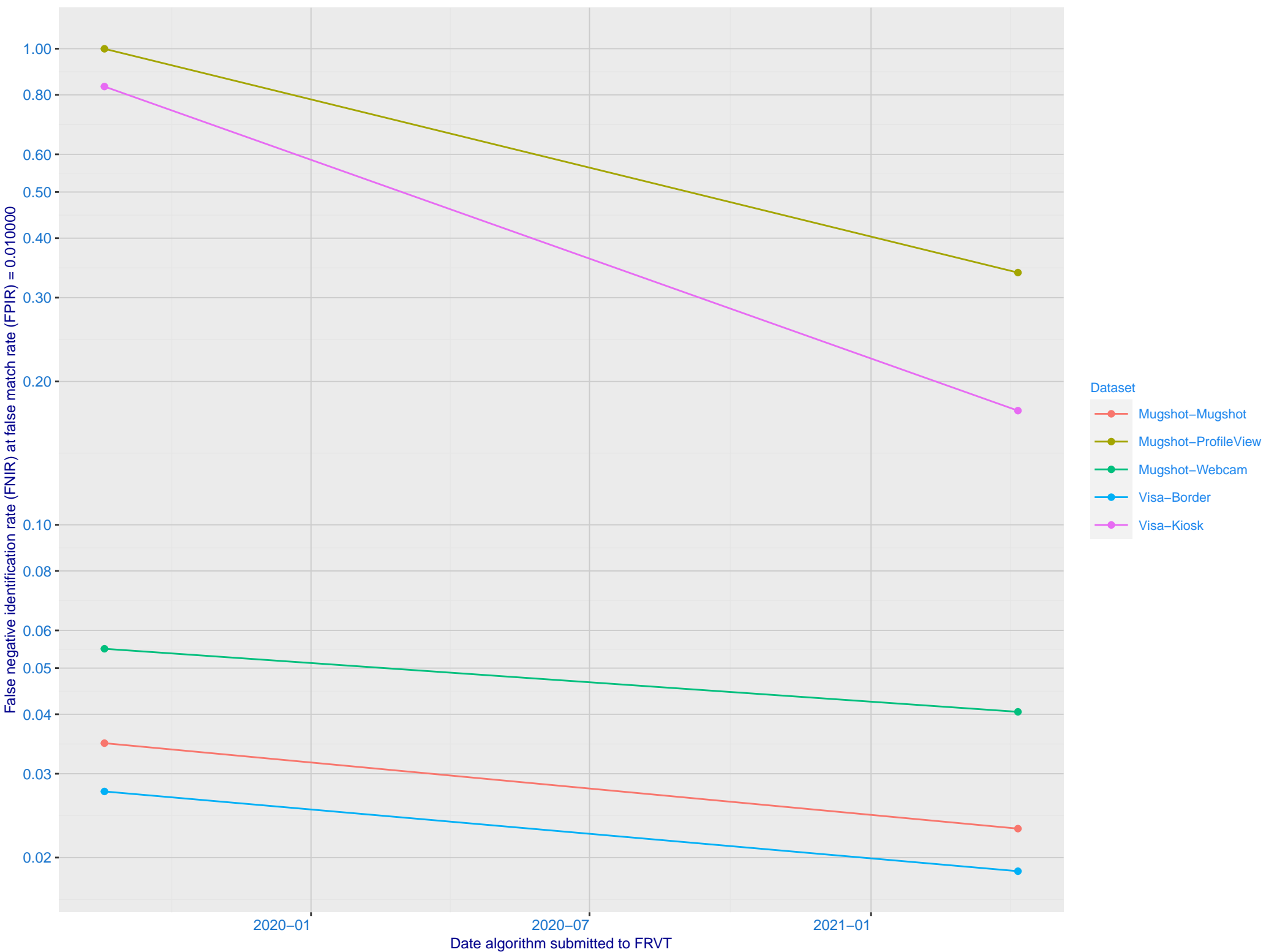
Immigration visa–border ranking 104 (out of 167) –– FNIR(1600000, T, L+1) = 0.2443, FPIR=0.001000 vs. lowest 0.0047 from idemia_008

Immigration visa–kiosk ranking 141 (out of 162) –– FNIR(1600000, T, L+1) = 0.9945, FPIR=0.001000 vs. lowest 0.0996 from cloudwalk_hr_000
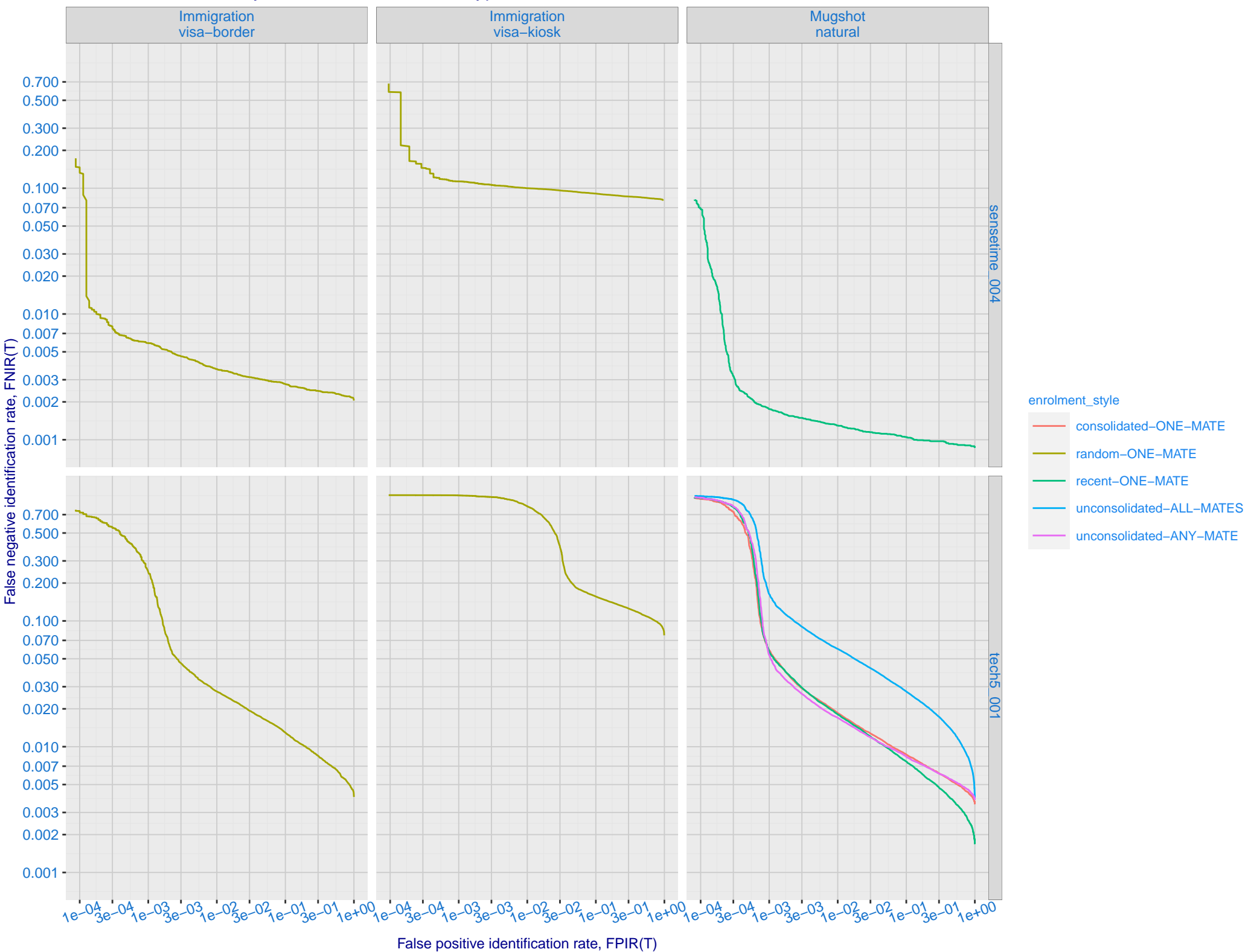
B: Mugshot natural images, identification mode: FNIR(N, L+1, T) vs. most accurate (sensetime_004)
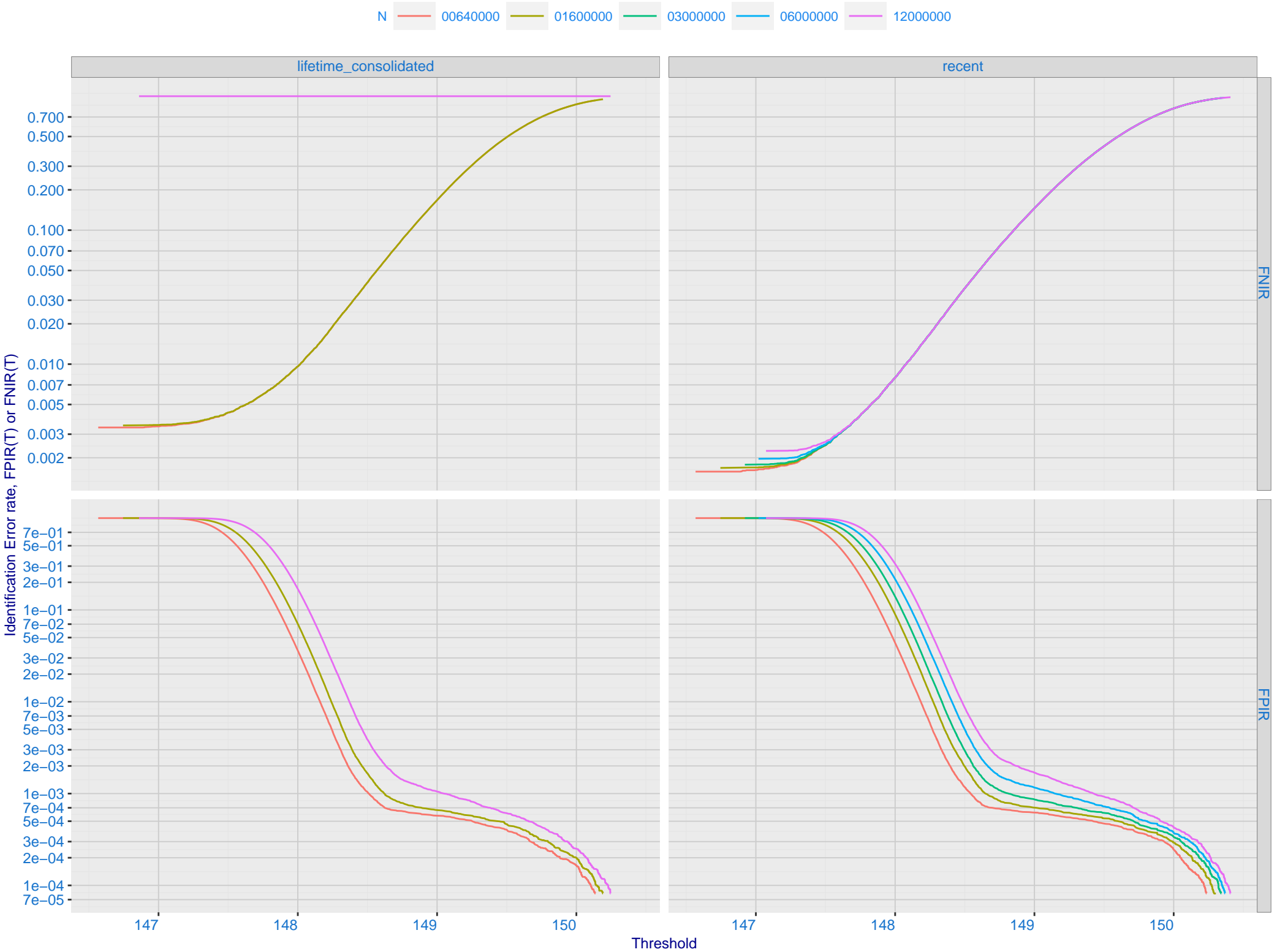
C: Evolution of accuracy for TECH5 algorithms on three datasets 2018 – present

Y-axis: False negative identification rate (FNIR) at false match rate (FPIR) = 0.010000

X-axis: Date algorithm submitted to FRVT

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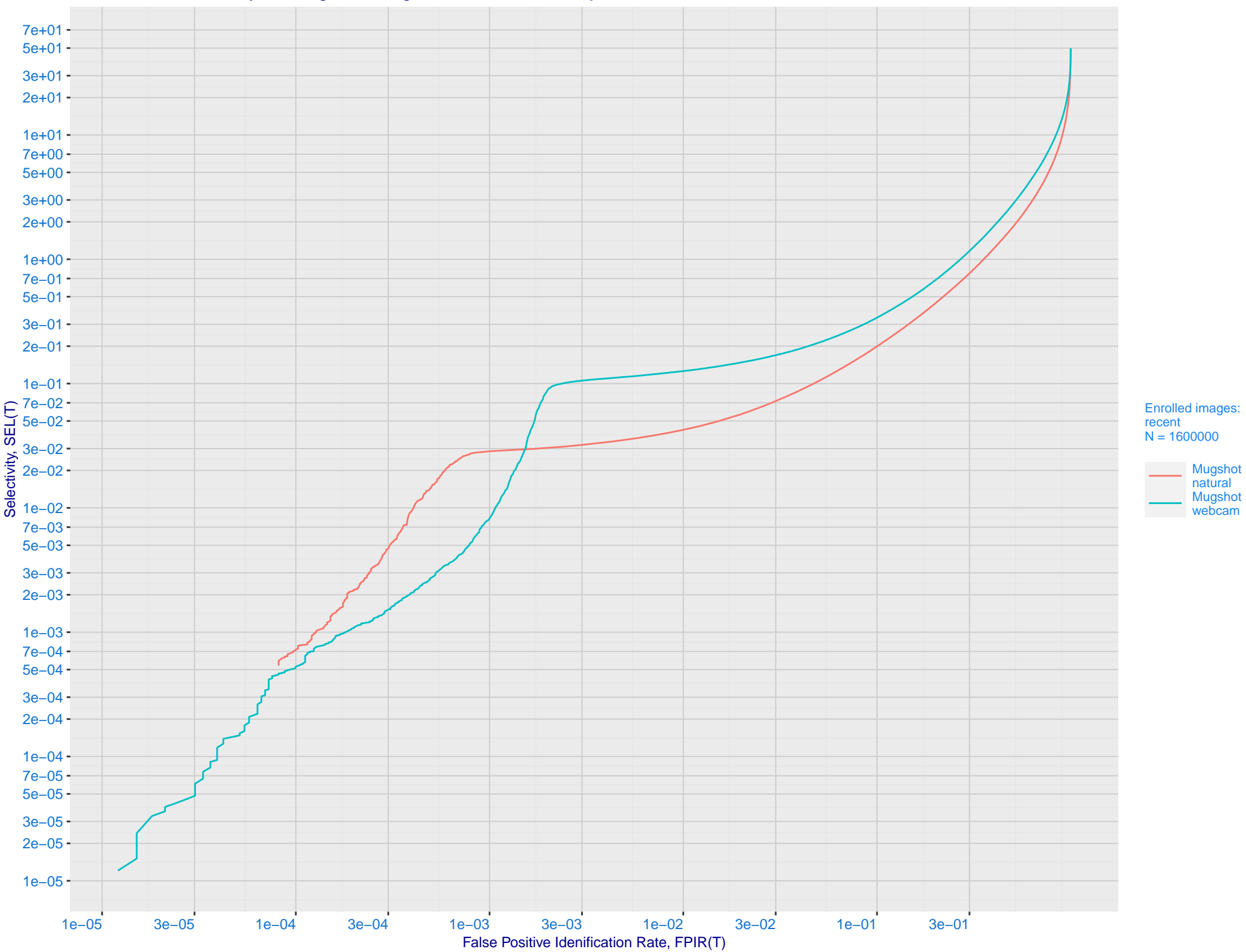- Mugshot–ProfileView
- Mugshot–Webcam
- Visa–Border
- Visa–Kiosk

D: 1:N error tradeoff by dataset and enrollment type. N = 1600000 individuals
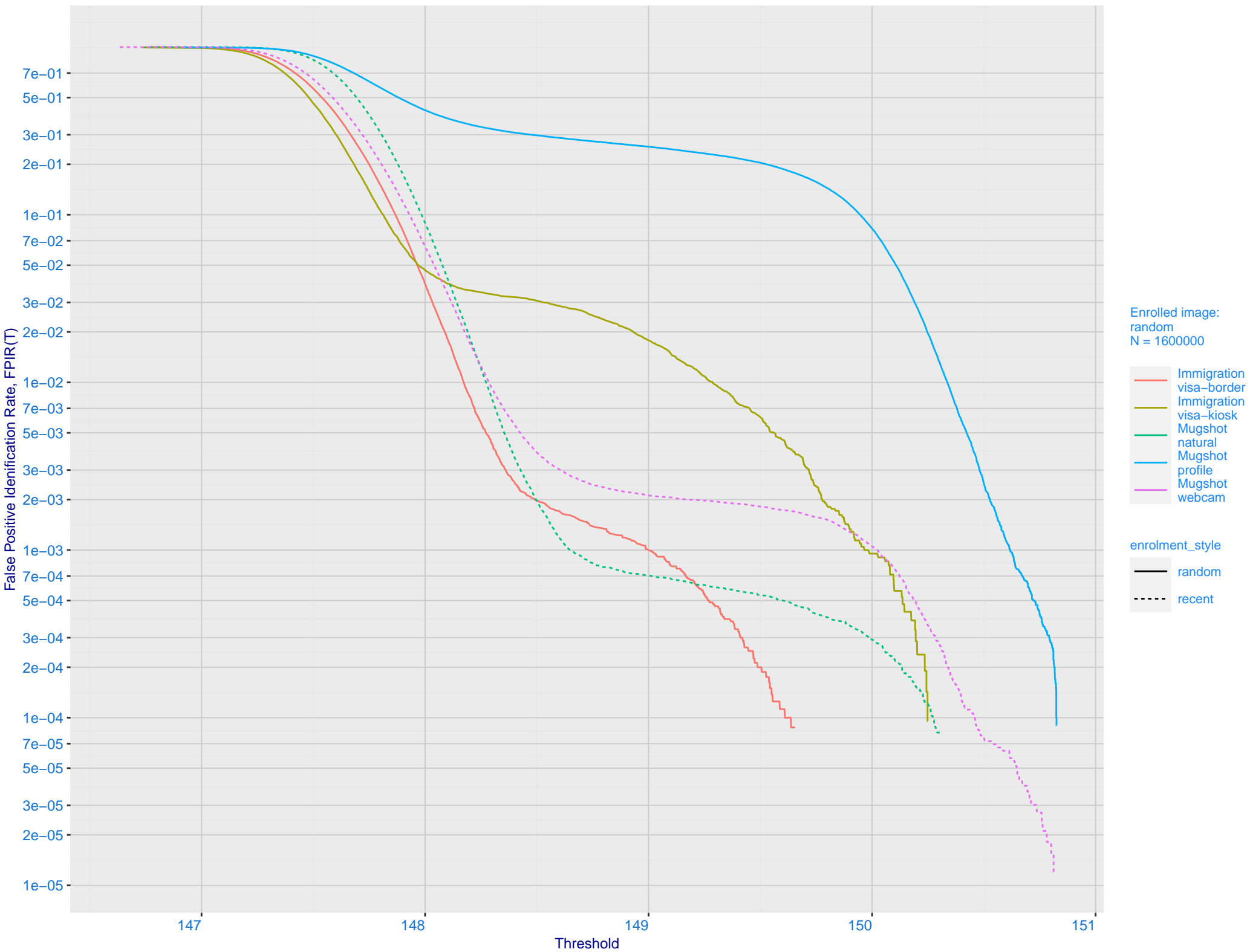
E: Dependence of error rates on T by number enrolled identities, N, for Mugshot natural images
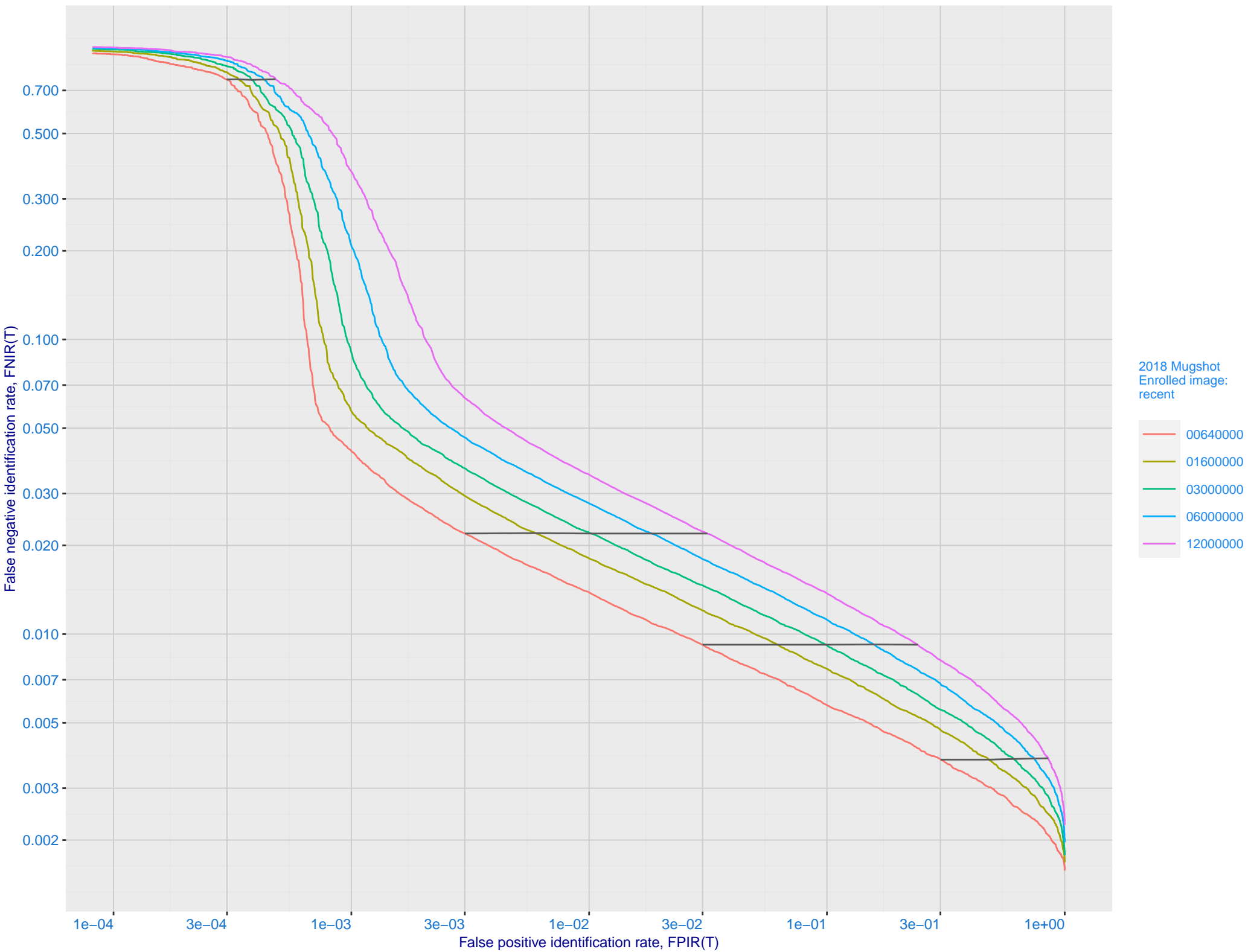
F: FPIR vs. Selectivity for mugshot images, N = 1600000 subjects enrolled with one recent mate
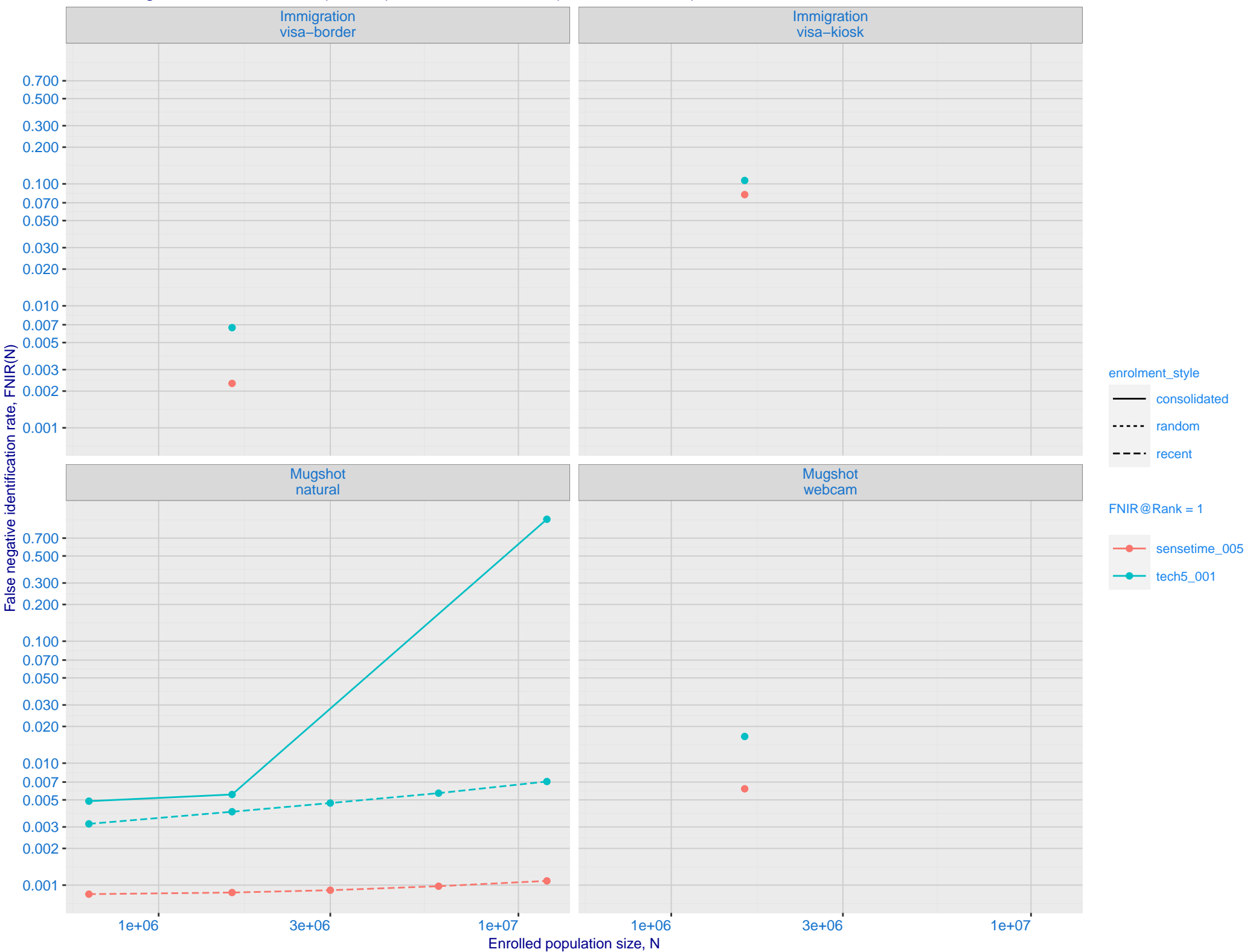
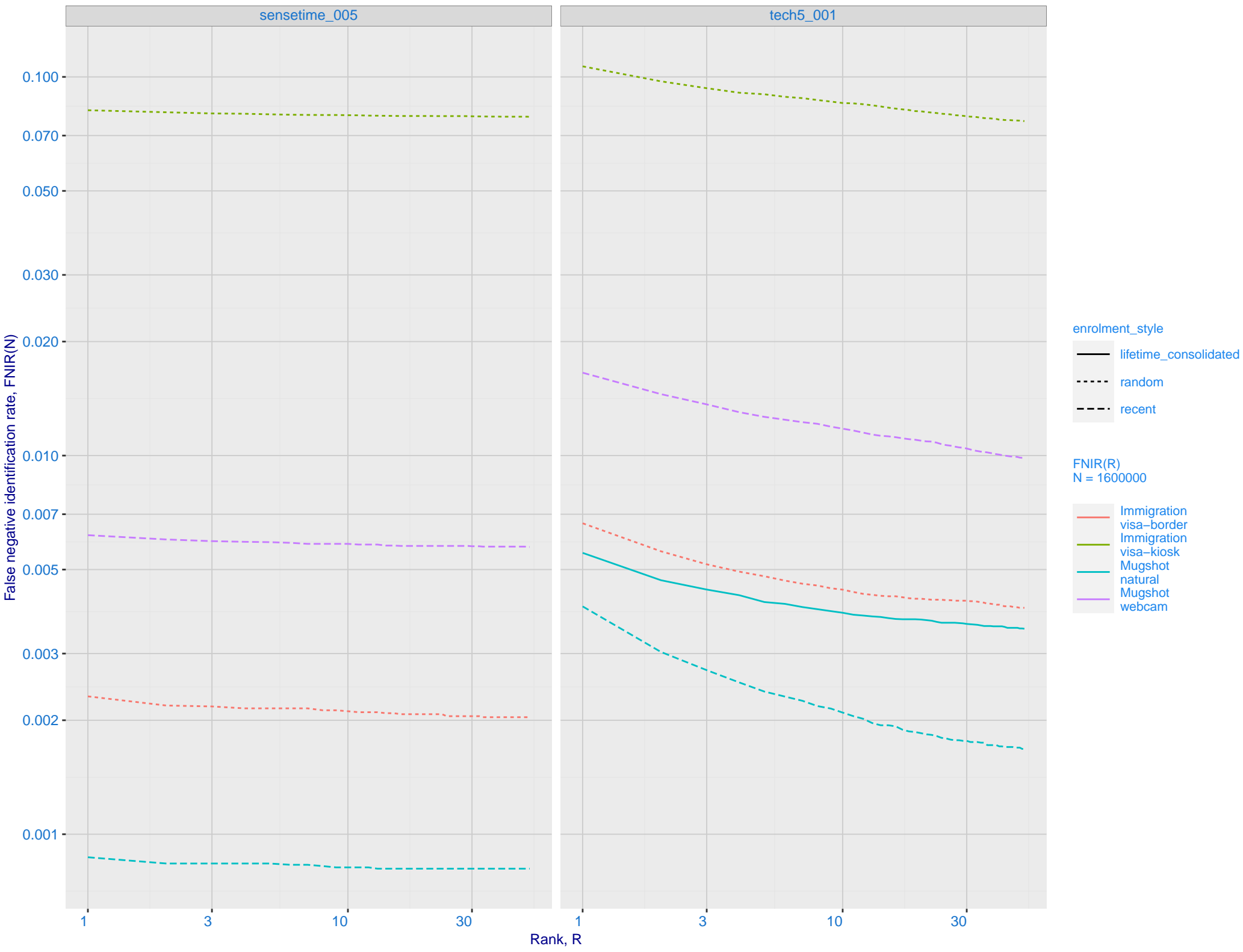G: FPIR dependence on T by probe type for N = 1600000 subjects

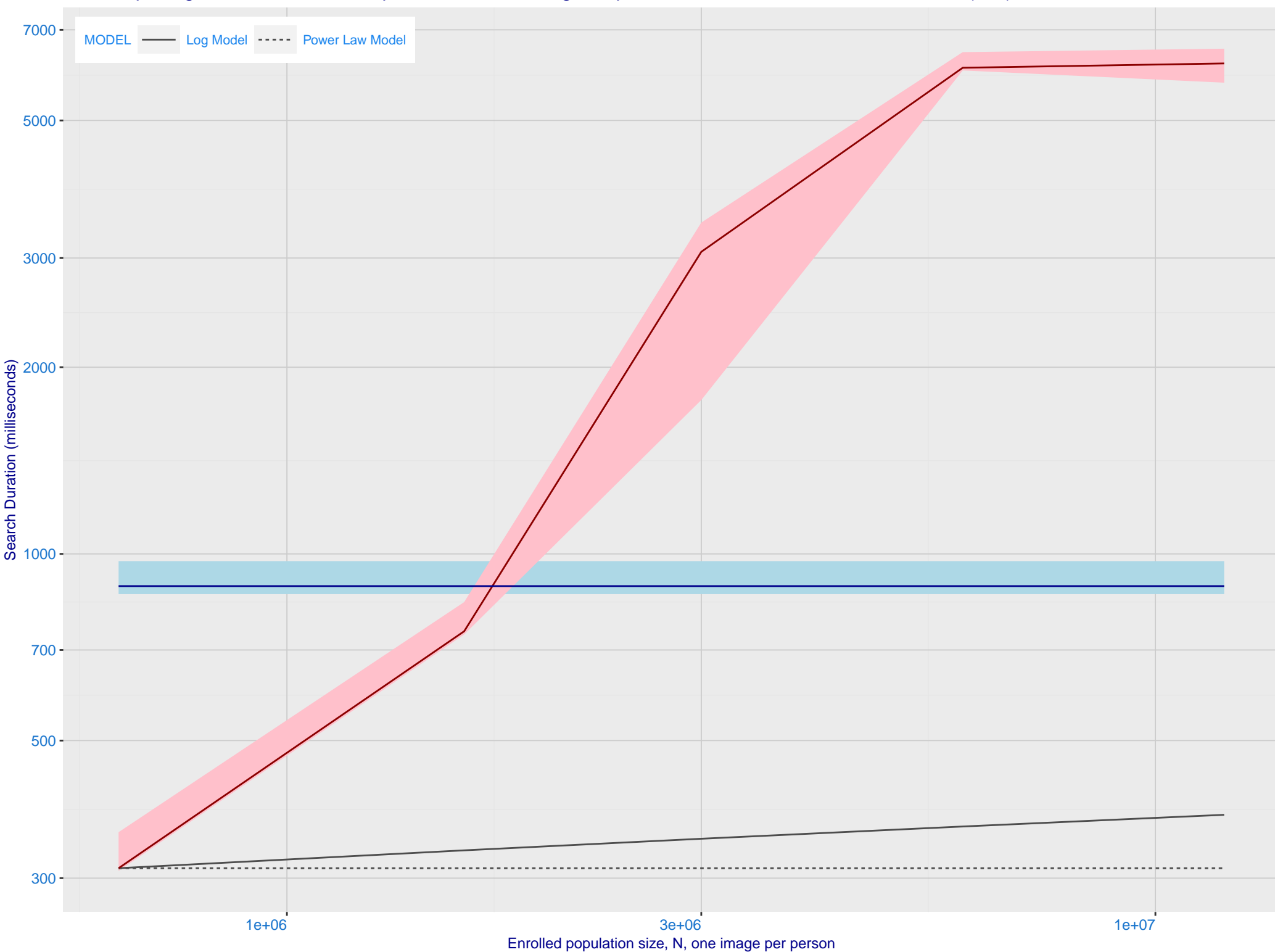J: DET for Mugshot natural images and various N. Links connect points of equal threshold.

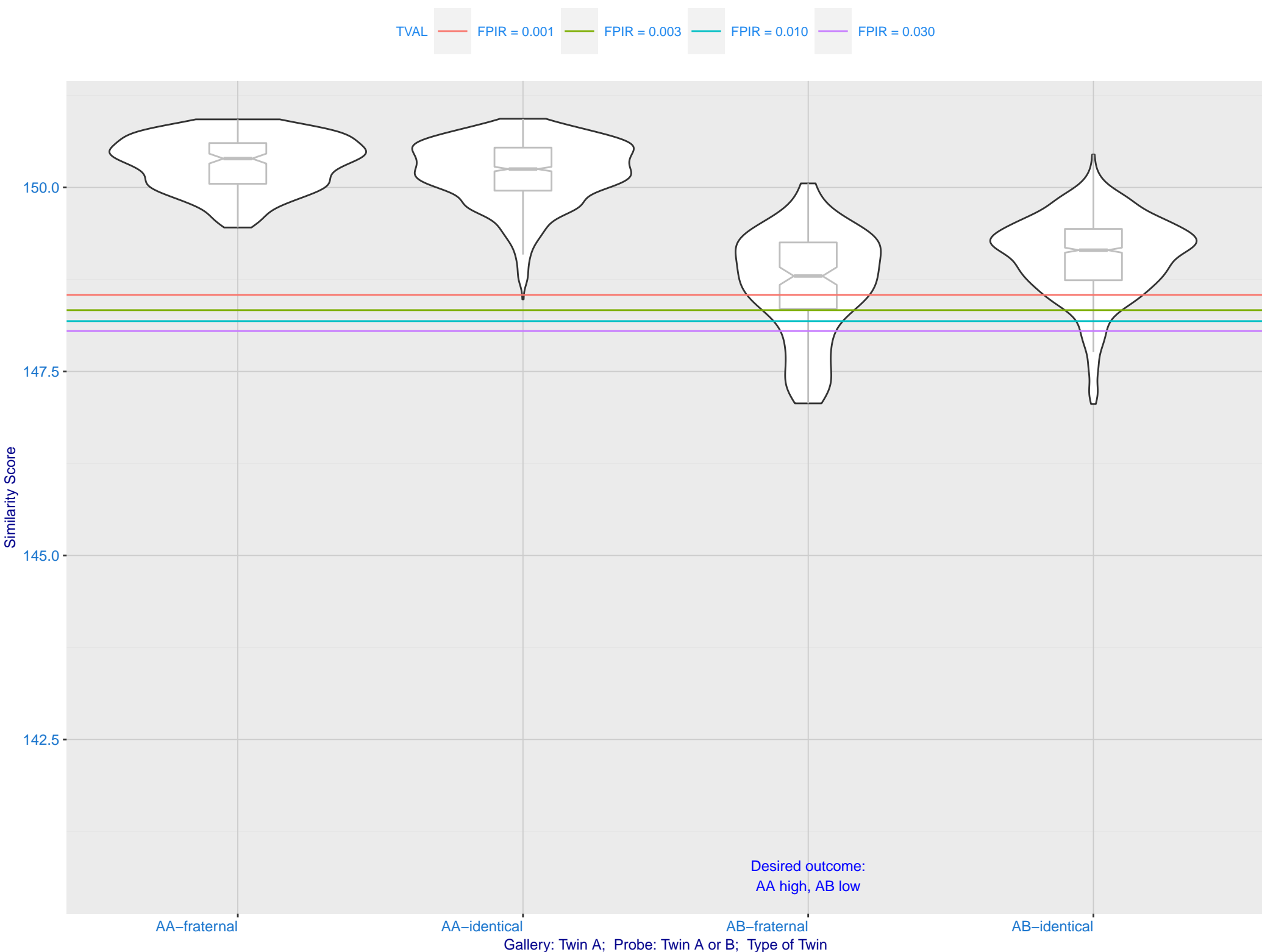K: Investigational mode: FNIR(N, 1, 0) vs. most accurate (sensetime_005)

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
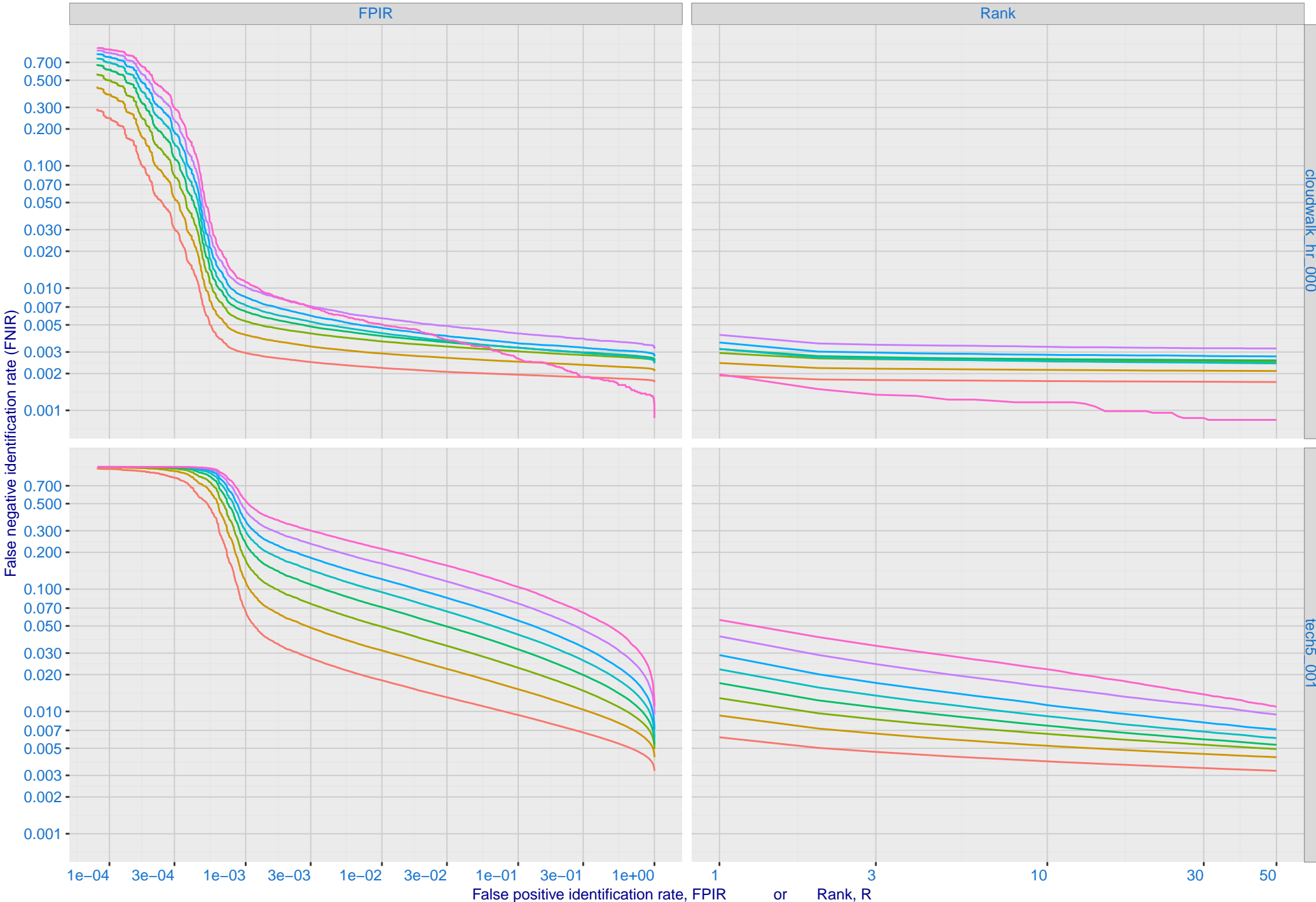
N: Solo–Twin and Twin–Twin similarity scores

TVAL — FPIR = 0.001 — FPIR = 0.003 — FPIR = 0.010 — FPIR = 0.030

Similarity Score

Desired outcome:
AA high, AB low

AA–fraternal   AA–identical   AB–fraternal   AB–identical

Gallery: Twin A; Probe: Twin A or B; Type of Twin

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