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 64 (out of 259) –– FNIR(1600000, 0, 1) = 0.0040 vs. lowest 0.0009 from sensetime_005

Mugshot webcam ranking 49 (out of 221) –– FNIR(1600000, 0, 1) = 0.0166 vs. lowest 0.0062 from sensetime_005

Mugshot profile ranking 57 (out of 190) –– FNIR(1600000, 0, 1) = 0.5841 vs. lowest 0.0591 from sensetime_005

Immigration visa–border ranking 40 (out of 142) –– FNIR(1600000, 0, 1) = 0.0066 vs. lowest 0.0014 from visionlabs_009

Immigration visa–kiosk ranking 29 (out of 139) –– FNIR(1600000, 0, 1) = 0.1066 vs. lowest 0.0694 from cib_000

Identification:

Frontal mugshot ranking 92 (out of 259) –– FNIR(1600000, T, L+1) = 0.0569, FPIR=0.001000 vs. lowest 0.0018 from sensetime_004
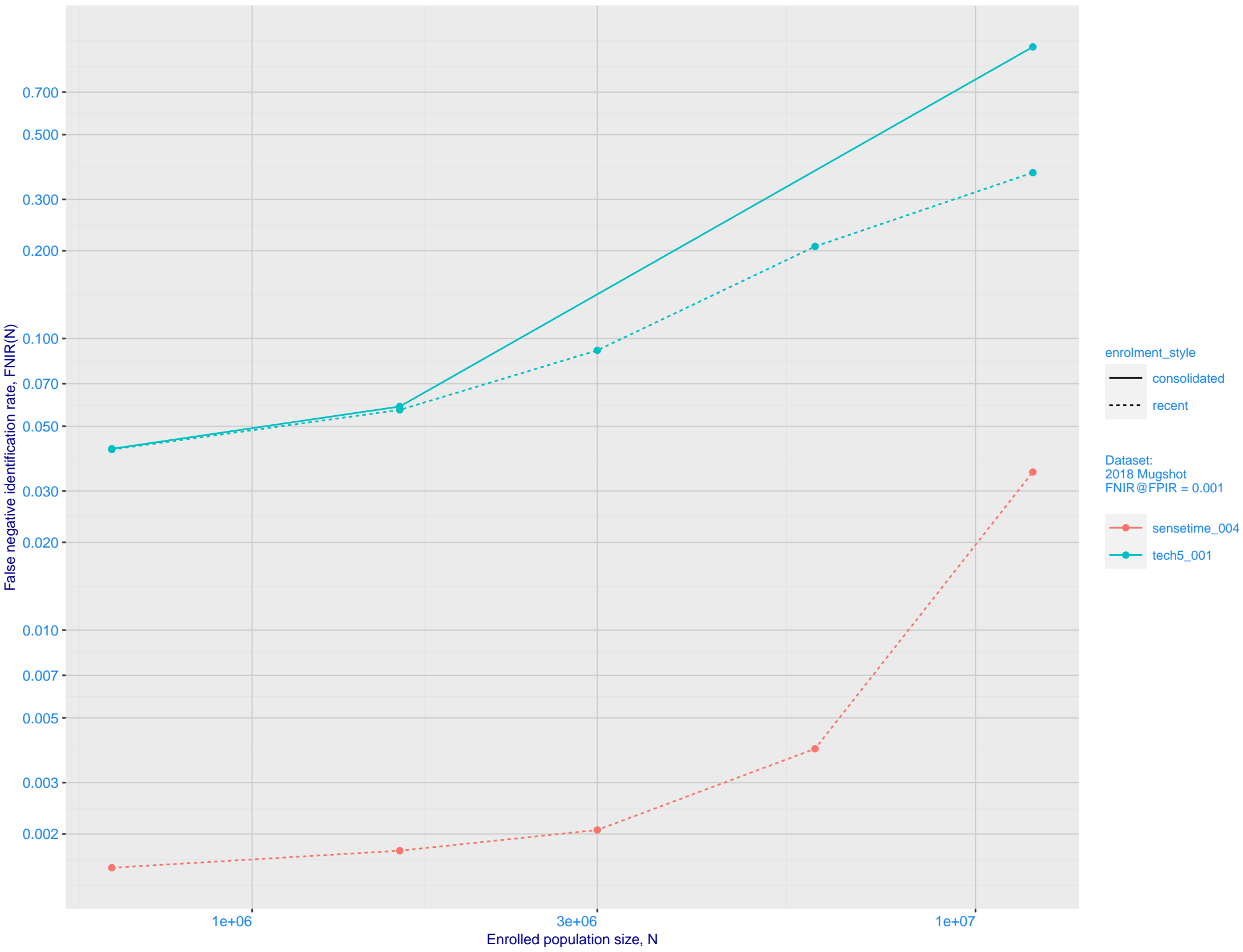
Mugshot webcam ranking 206 (out of 219) –– FNIR(1600000, T, L+1) = 0.9341, FPIR=0.001000 vs. lowest 0.0122 from sensetime_003

Mugshot profile ranking 182 (out of 189) –– FNIR(1600000, T, L+1) = 1.0000, FPIR=0.001000 vs. lowest 0.1733 from sensetime_005
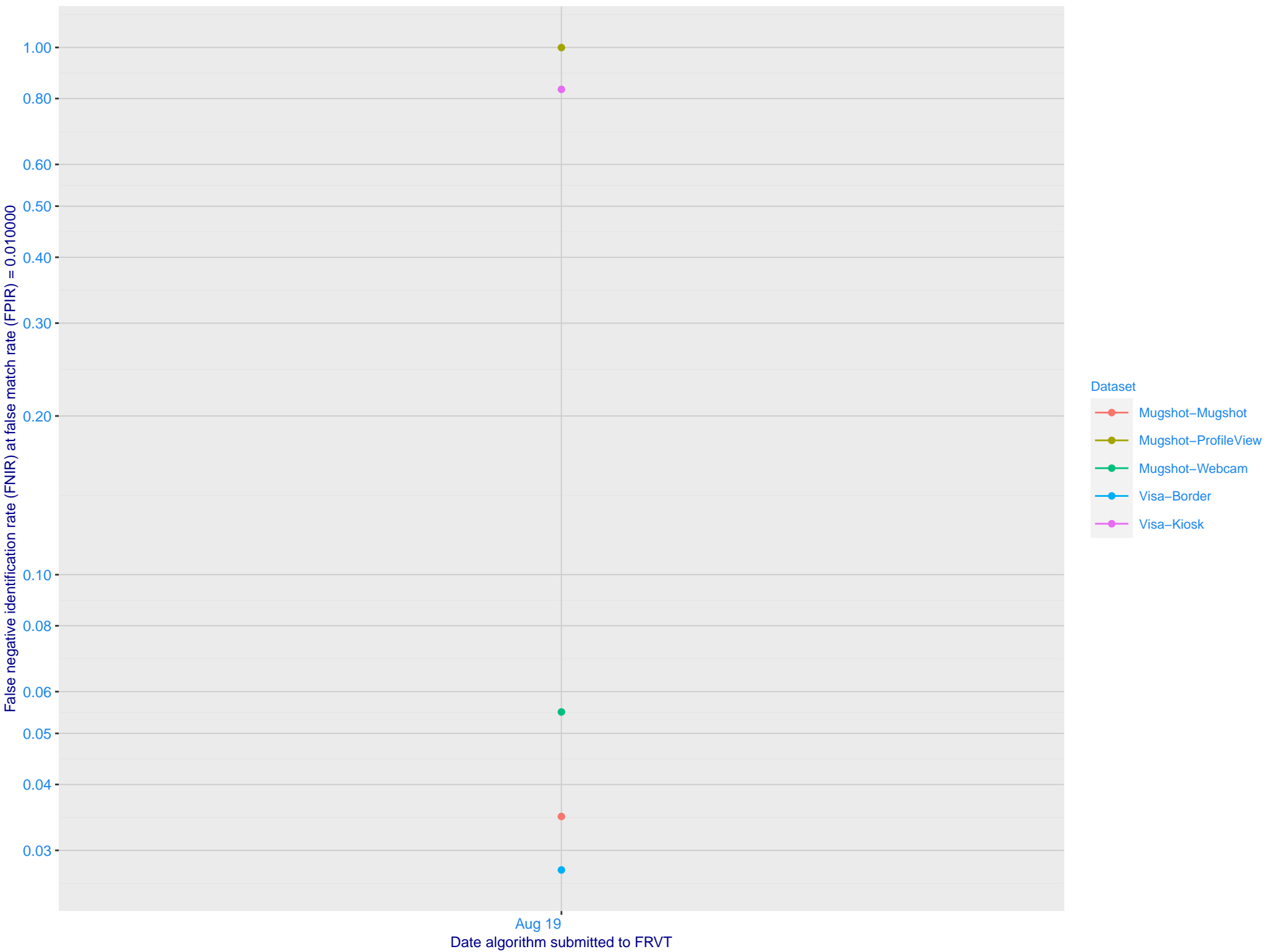
Immigration visa–border ranking 83 (out of 139) –– FNIR(1600000, T, L+1) = 0.2443, FPIR=0.001000 vs. lowest 0.0059 from sensetime_004

Immigration visa–kiosk ranking 121 (out of 134) –– FNIR(1600000, T, L+1) = 0.9945, FPIR=0.001000 vs. lowest 0.1048 from sensetime_005
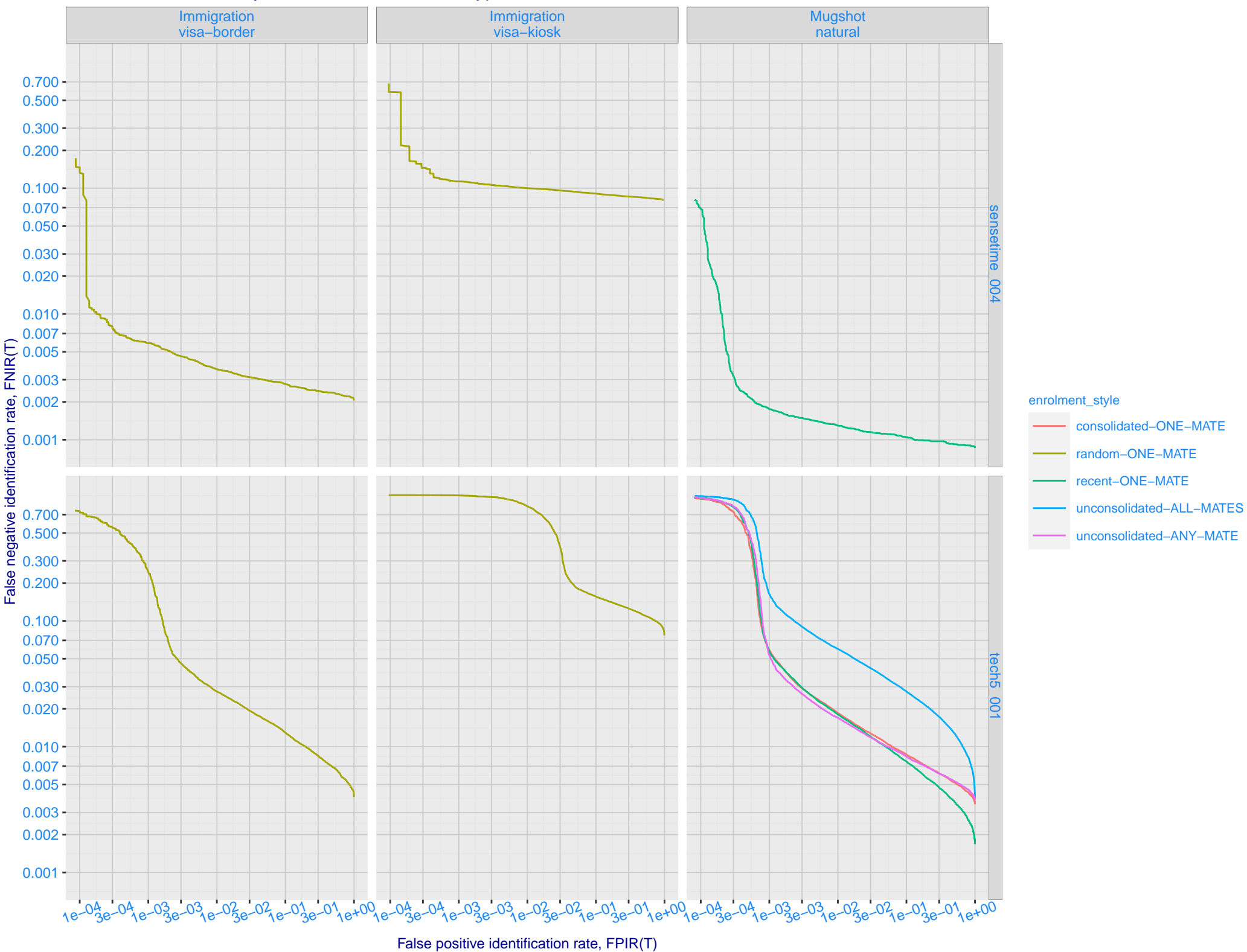
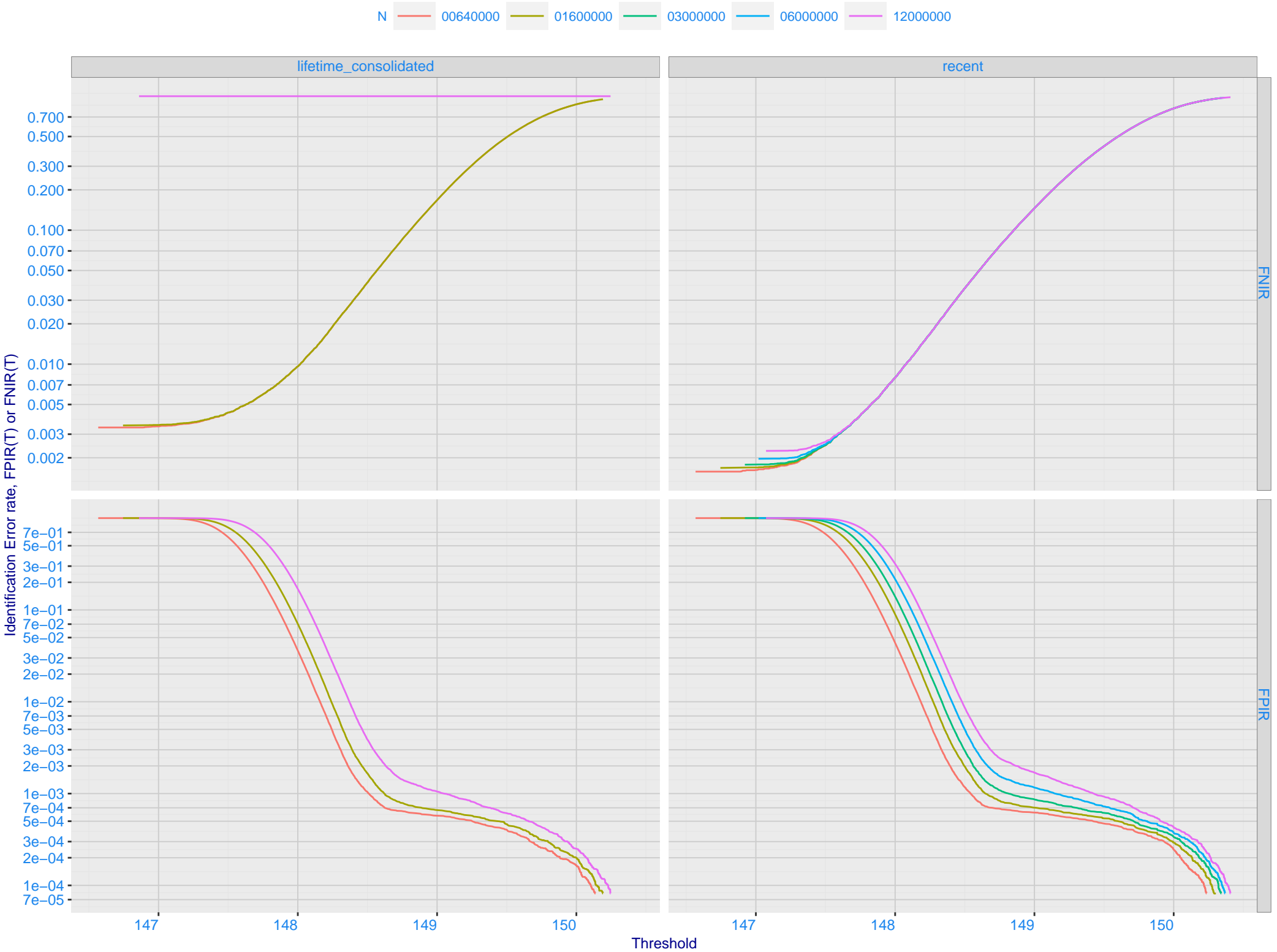B: Mugshot natural images, identification mode: FNIR(N, L+1, T) vs. most accurate (sensetime_004)

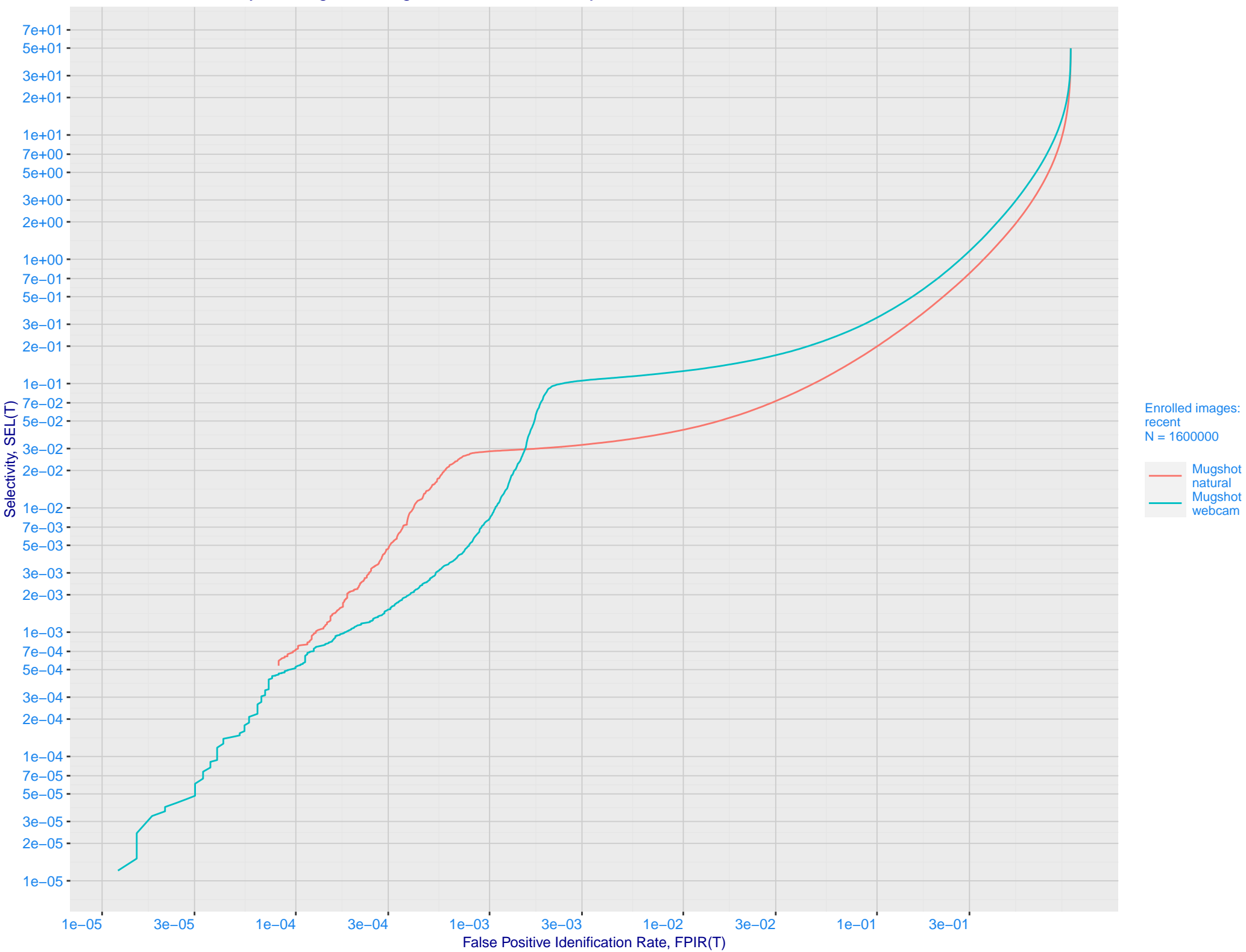**C: Evolution of accuracy for TECH5 algorithms on three datasets 2018 – present**

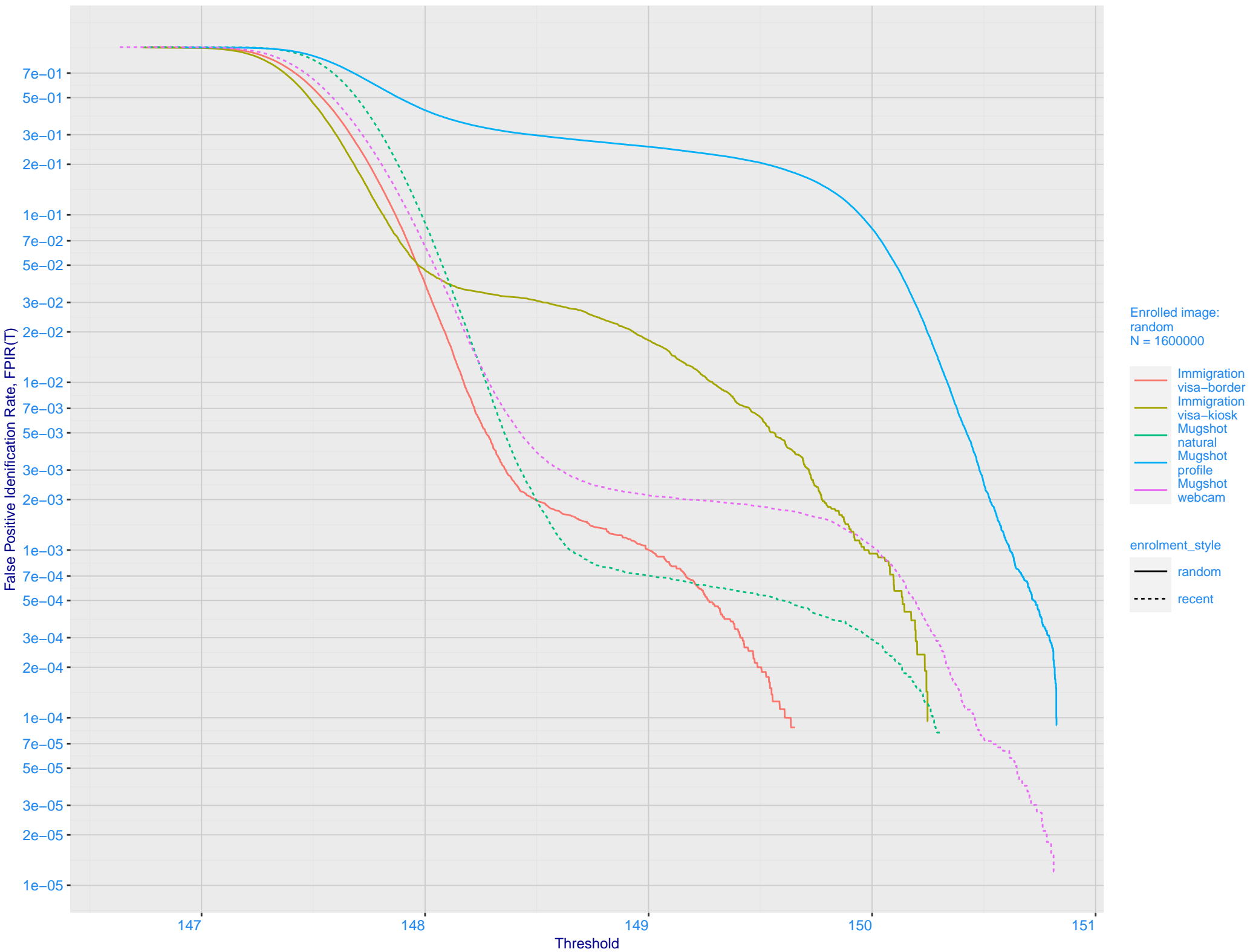D: 1:N error tradeoff by dataset and enrollment type. N = 1600000 individuals

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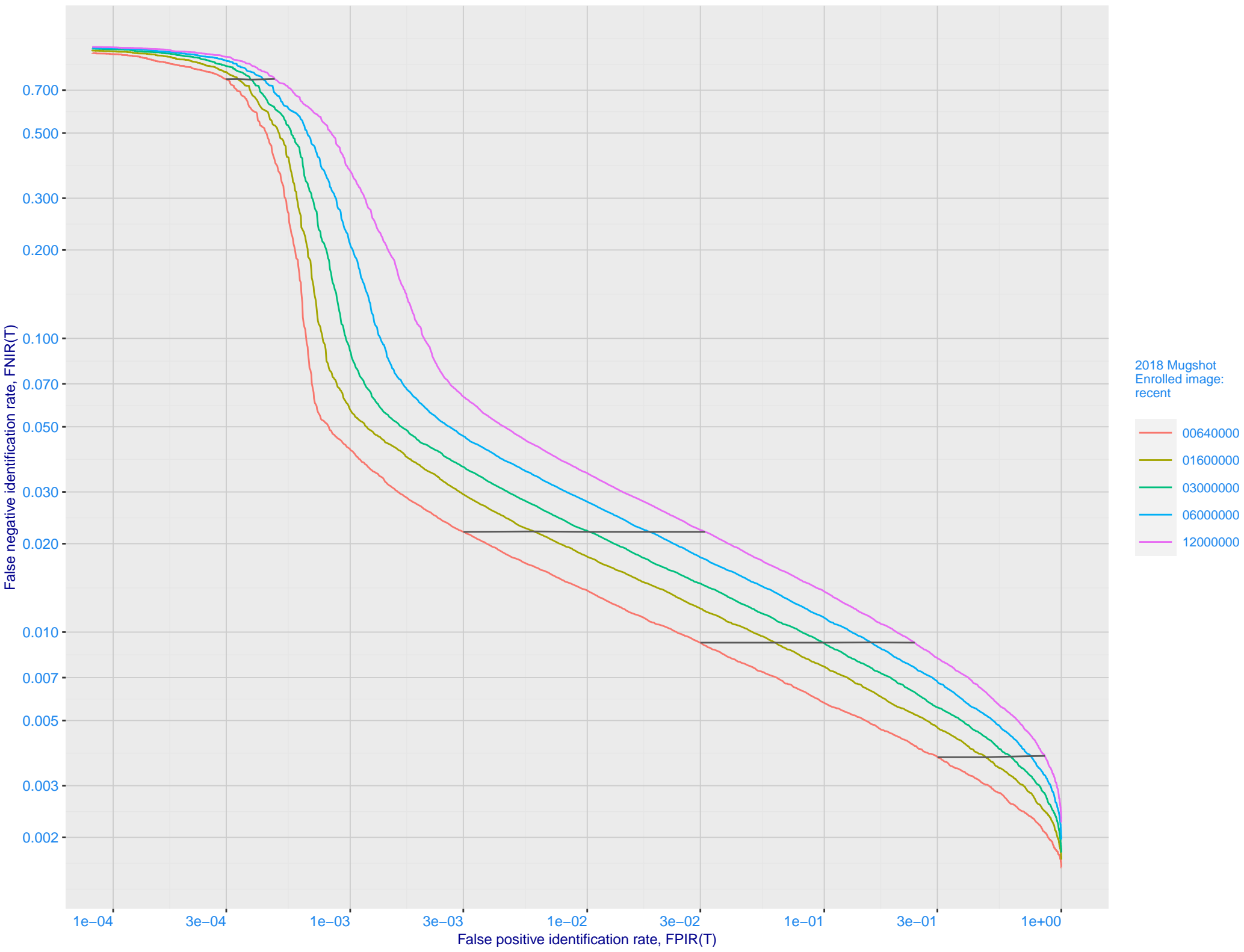
F: FPIR vs. Selectivity for mugshot images, N = 1600000 subjects enrolled with one recent mate
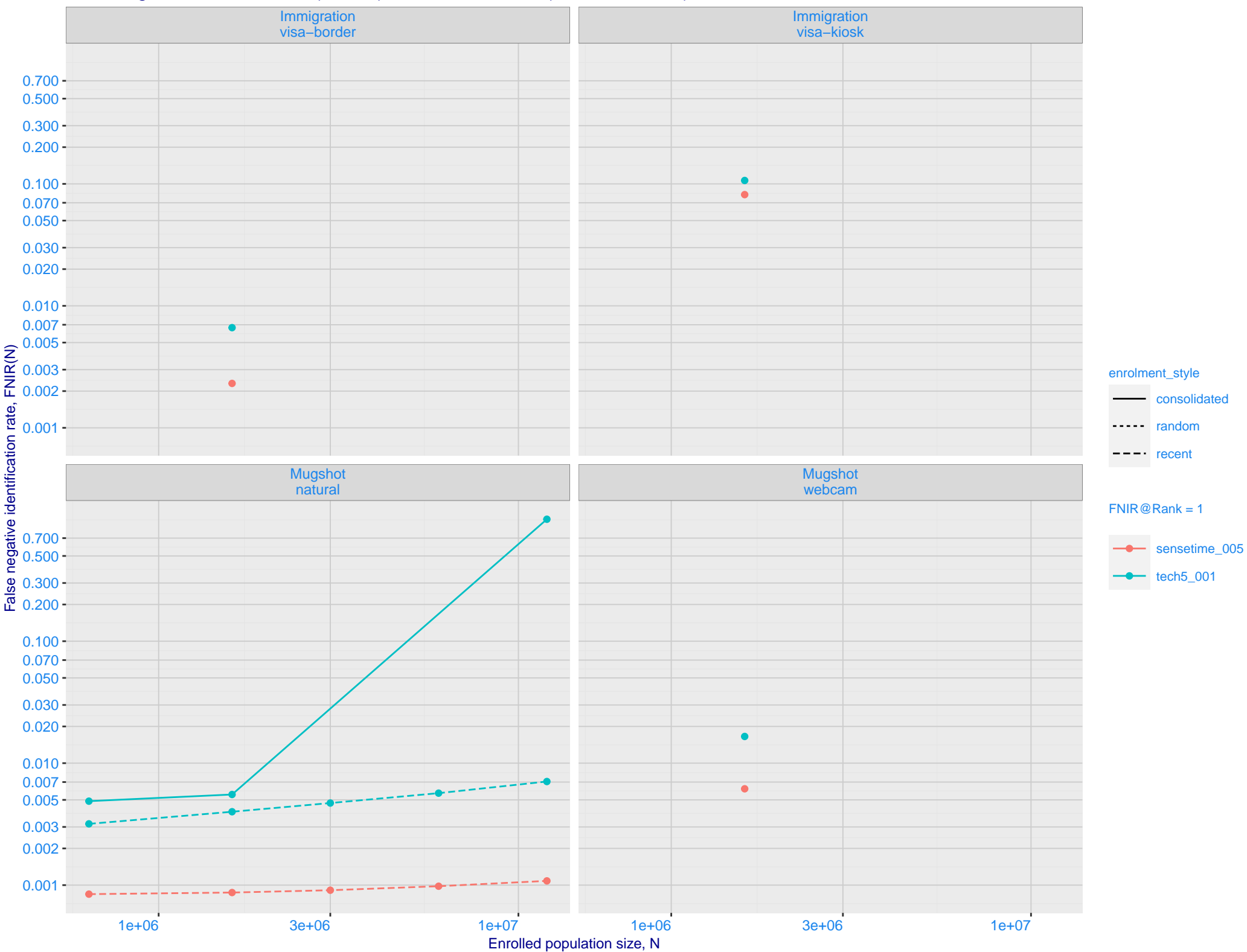
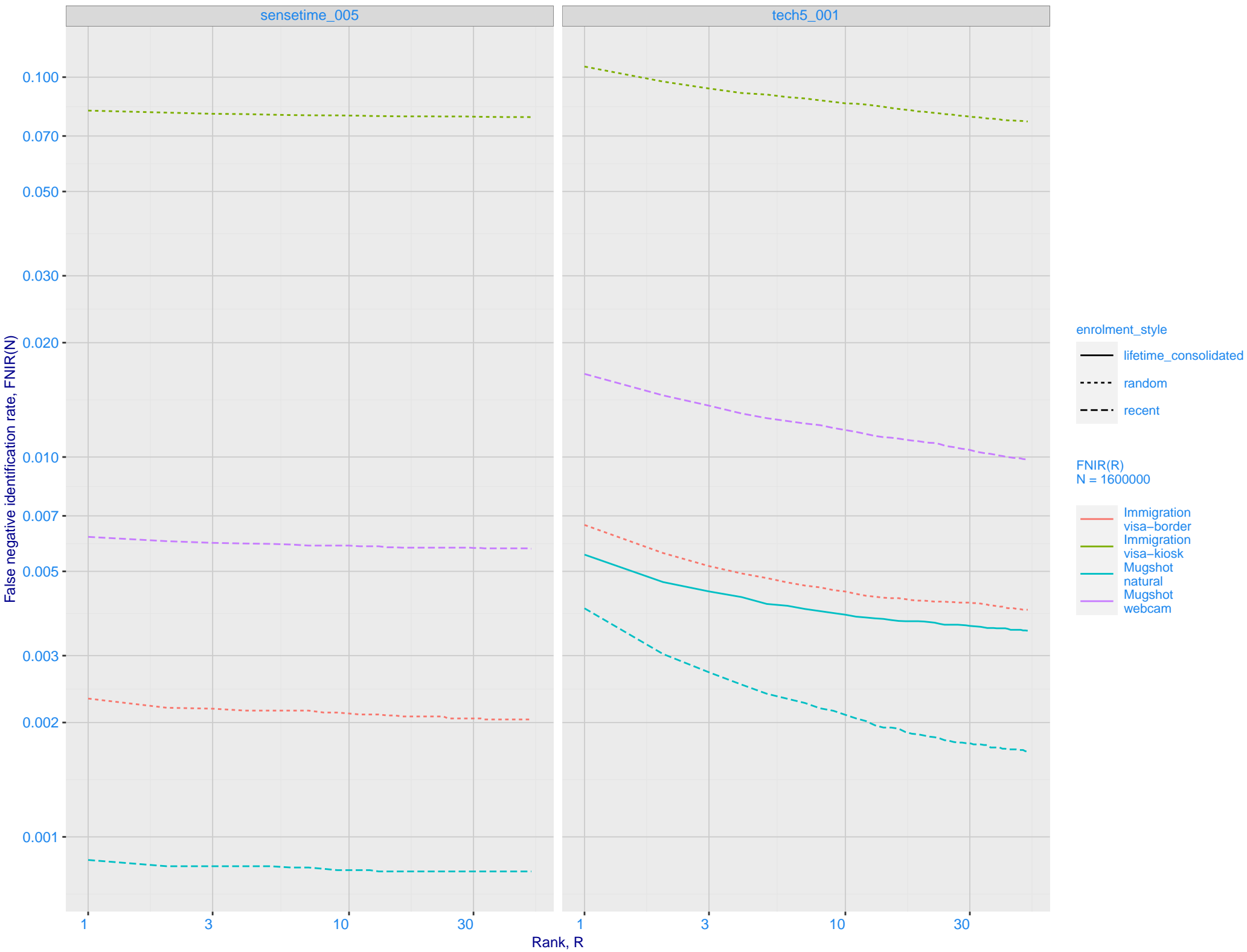G: FPIR dependence on T by probe type for N = 1600000 subjects

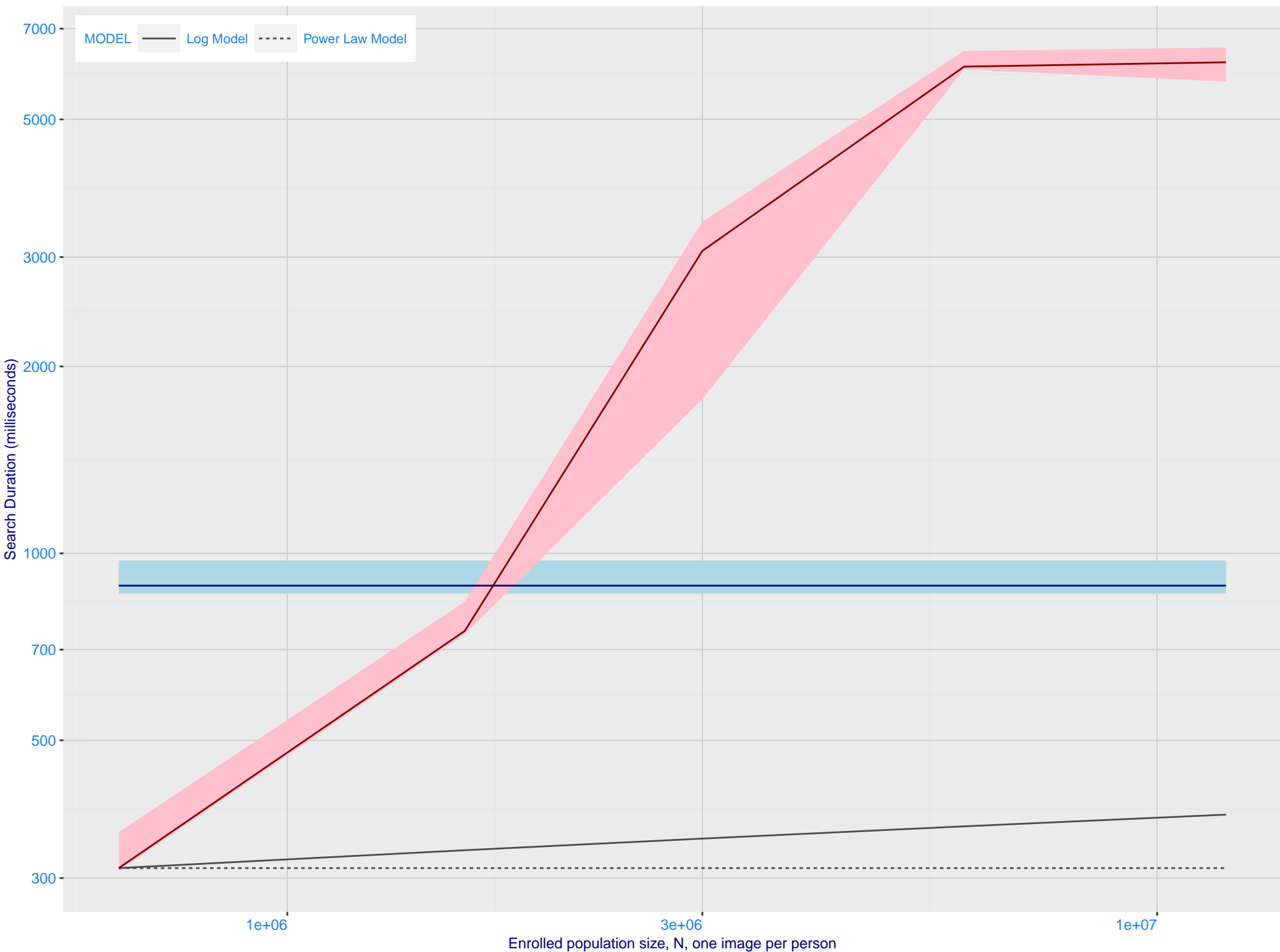H: DET for Mugshot natural images and various N. Links connect points of equal threshold.

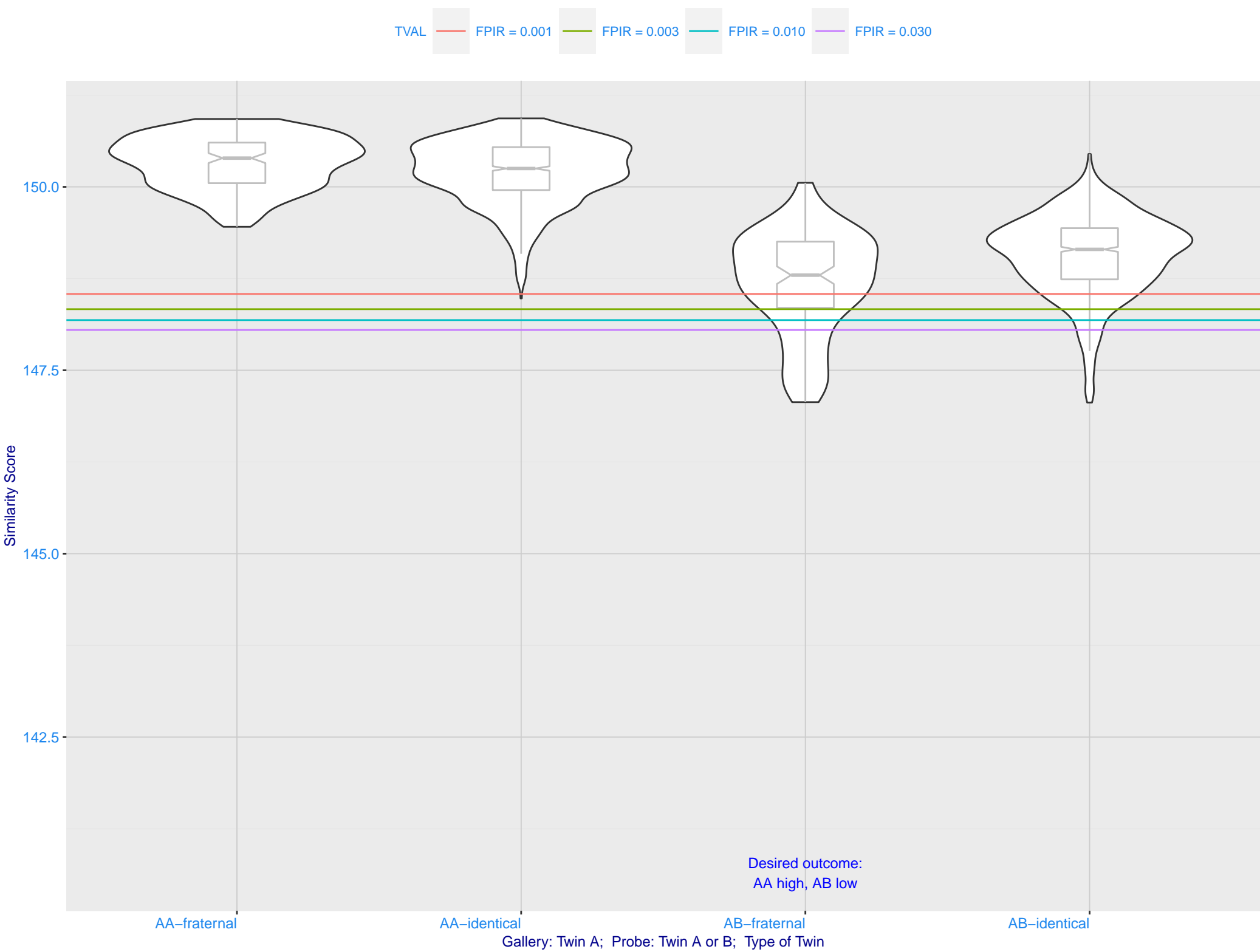I: Investigational mode: FNIR(N, 1, 0) vs. most accurate (sensetime_005)

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
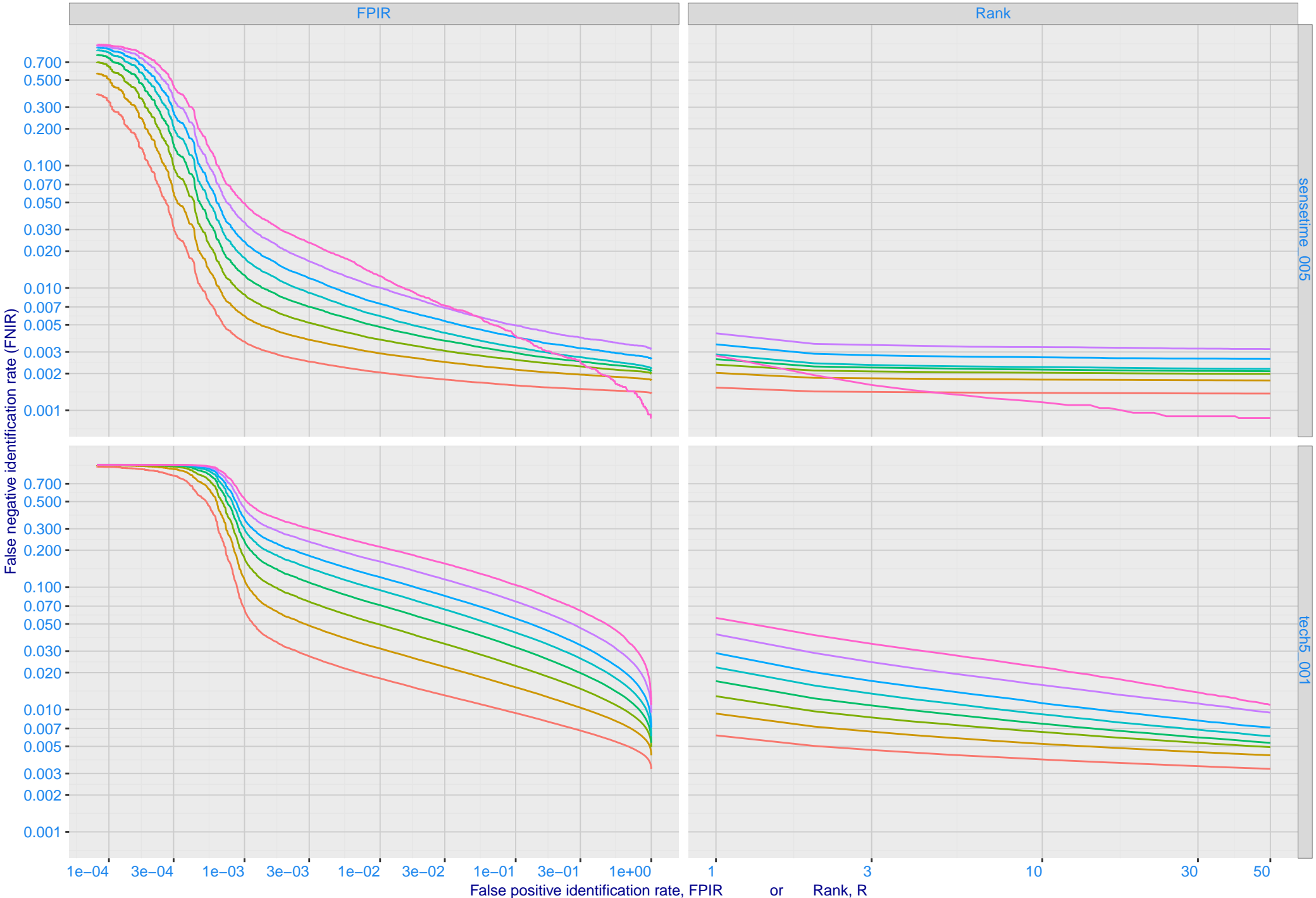
Solo-Twin and Twin-Twin similarity scores

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

Similarity Score

150.0

147.5

145.0

142.5

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

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

N: Decline of genuine scores with ageing