

A: Datasheet

Algorithm: hik_4

Developer: Hikvision Research Institute

Submission Date: 2018_06_30

Template size: 1152 bytes

Template time (2.5 percentile): 491 msec

Template time (median): 494 msec

Template time (97.5 percentile): 655 msec

Investigation:

Frontal mugshot ranking 148 (out of 279) — FNIR(1600000, 0, 1) = 0.0113 vs. lowest 0.0009 from sensetime_005

Mugshot webcam ranking 116 (out of 241) — FNIR(1600000, 0, 1) = 0.0272 vs. lowest 0.0062 from sensetime_005

Mugshot profile ranking 92 (out of 210) — FNIR(1600000, 0, 1) = 0.7433 vs. lowest 0.0587 from xforwardai_002

Immigration visa–border ranking 75 (out of 168) — FNIR(1600000, 0, 1) = 0.0120 vs. lowest 0.0013 from visionlabs_010

Immigration visa–kiosk ranking 78 (out of 165) — FNIR(1600000, 0, 1) = 0.1524 vs. lowest 0.0568 from cloudwalk_hr_000

Identification:

Frontal mugshot ranking 143 (out of 279) — FNIR(1600000, T, L+1) = 0.0986, FPIR=0.001000 vs. lowest 0.0018 from sensetime_004

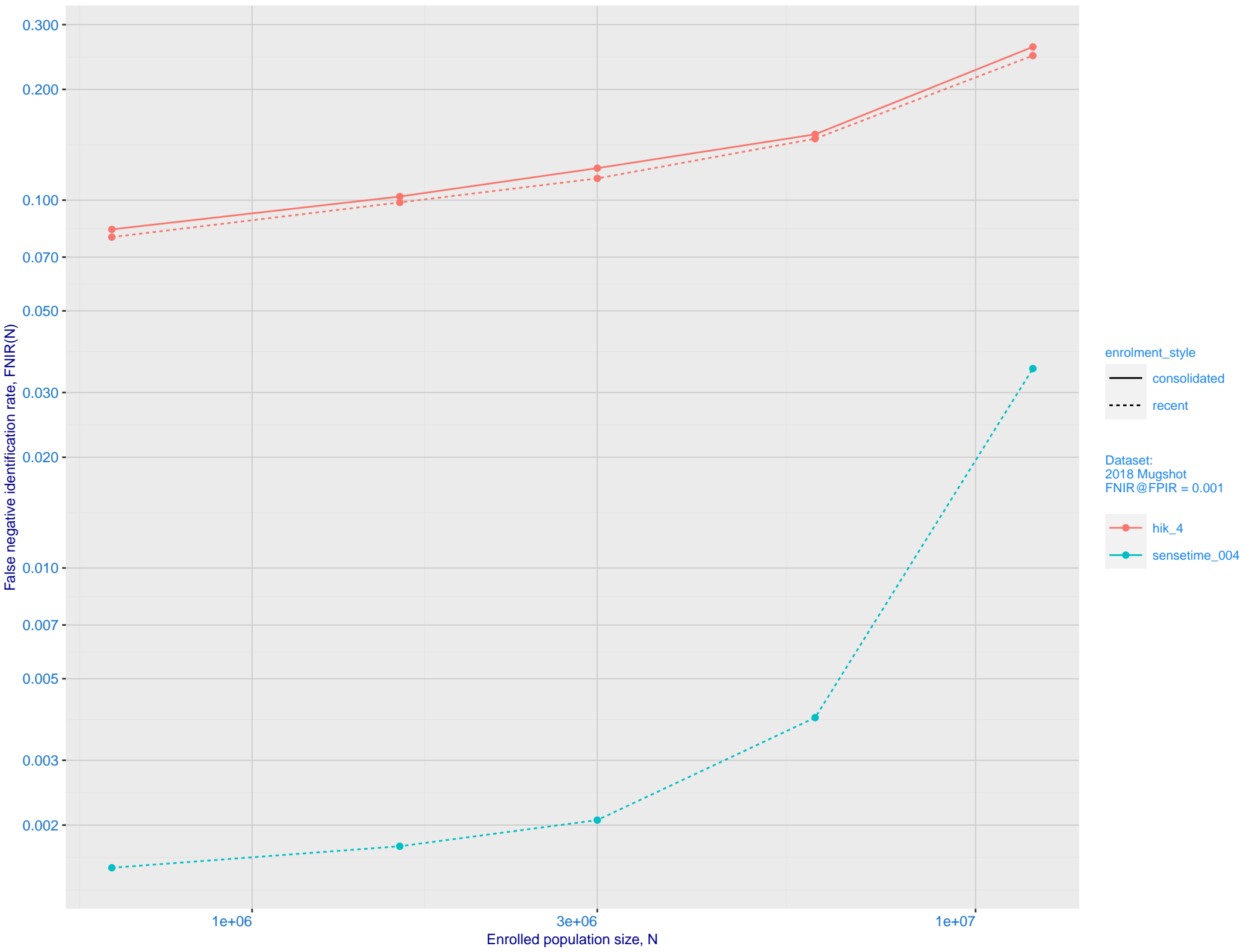
Mugshot webcam ranking 115 (out of 236) — FNIR(1600000, T, L+1) = 0.1523, FPIR=0.001000 vs. lowest 0.0122 from sensetime_003

Mugshot profile ranking 56 (out of 209) — FNIR(1600000, T, L+1) = 0.9763, FPIR=0.001000 vs. lowest 0.1331 from cloudwalk_hr_000

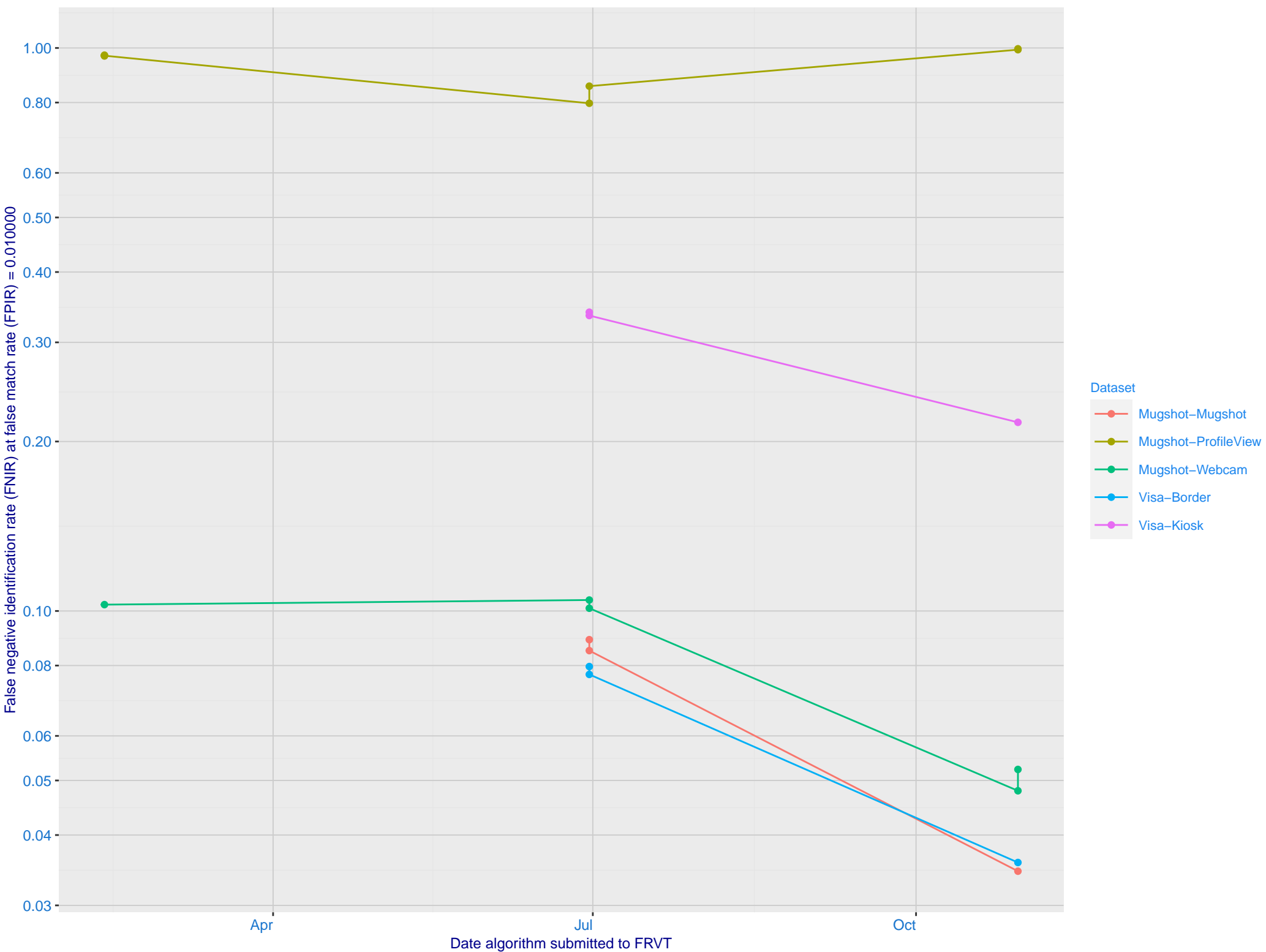
Immigration visa–border ranking 89 (out of 167) — FNIR(1600000, T, L+1) = 0.1375, FPIR=0.001000 vs. lowest 0.0047 from idemia_008

Immigration visa–kiosk ranking 64 (out of 162) — FNIR(1600000, T, L+1) = 0.4356, FPIR=0.001000 vs. lowest 0.0996 from cloudwalk_hr_000

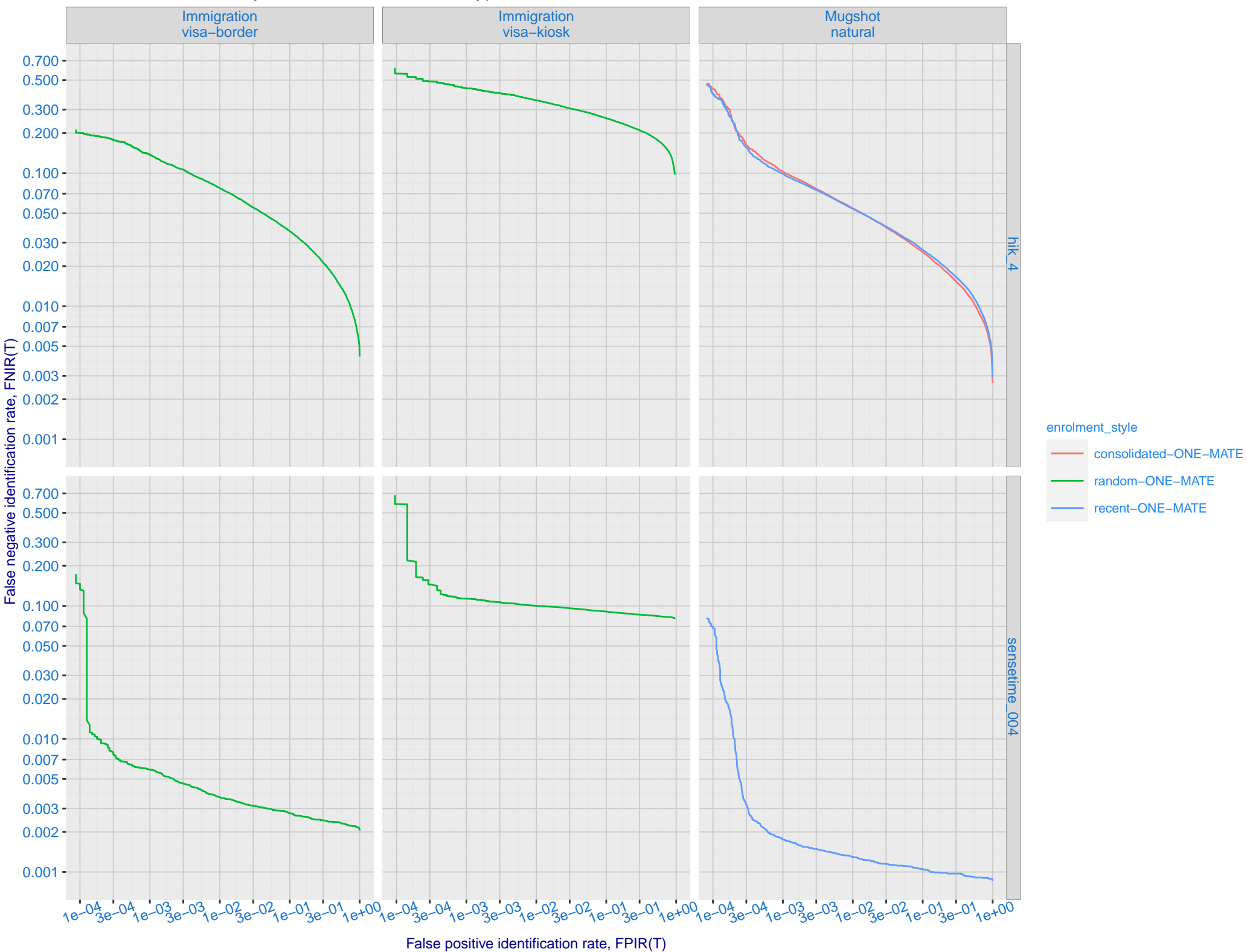
B: Mugshot natural images, identification mode: FNIR(N, L+1, T) vs. most accurate (sensetime_004)



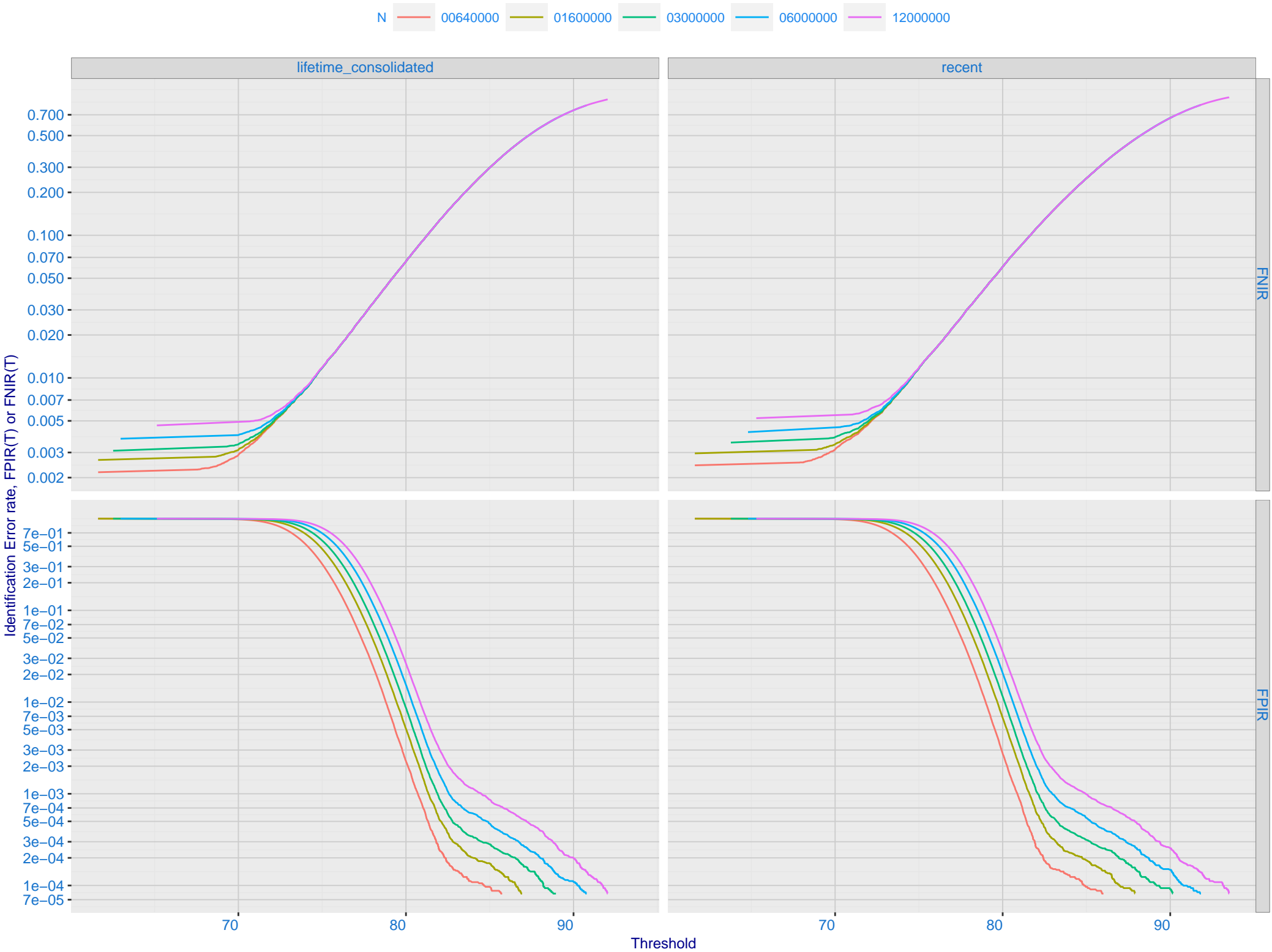
C: Evolution of accuracy for HIK algorithms on three datasets 2018 – present



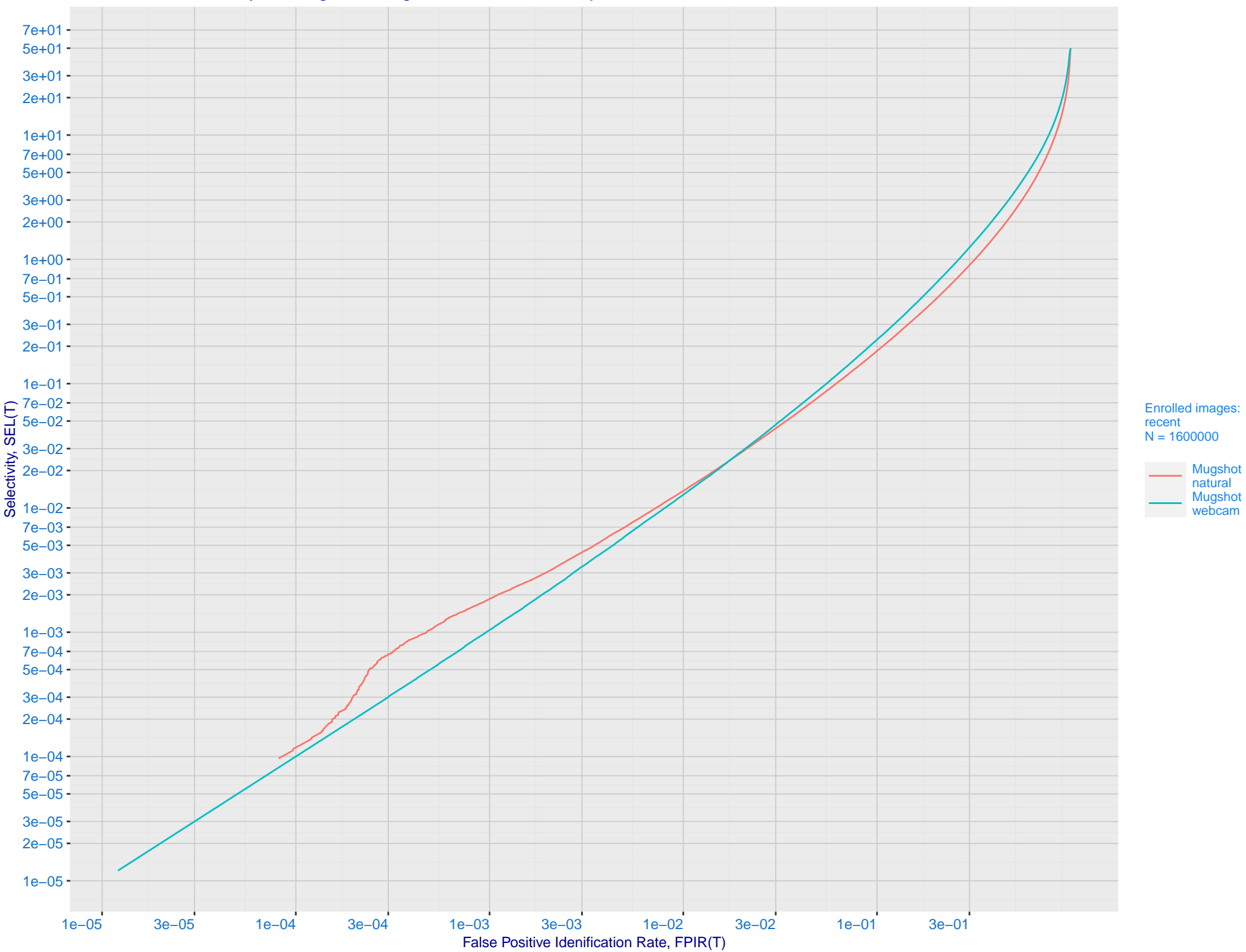
D: 1:N error tradeoff by dataset and enrollment type. N = 1600000 individuals



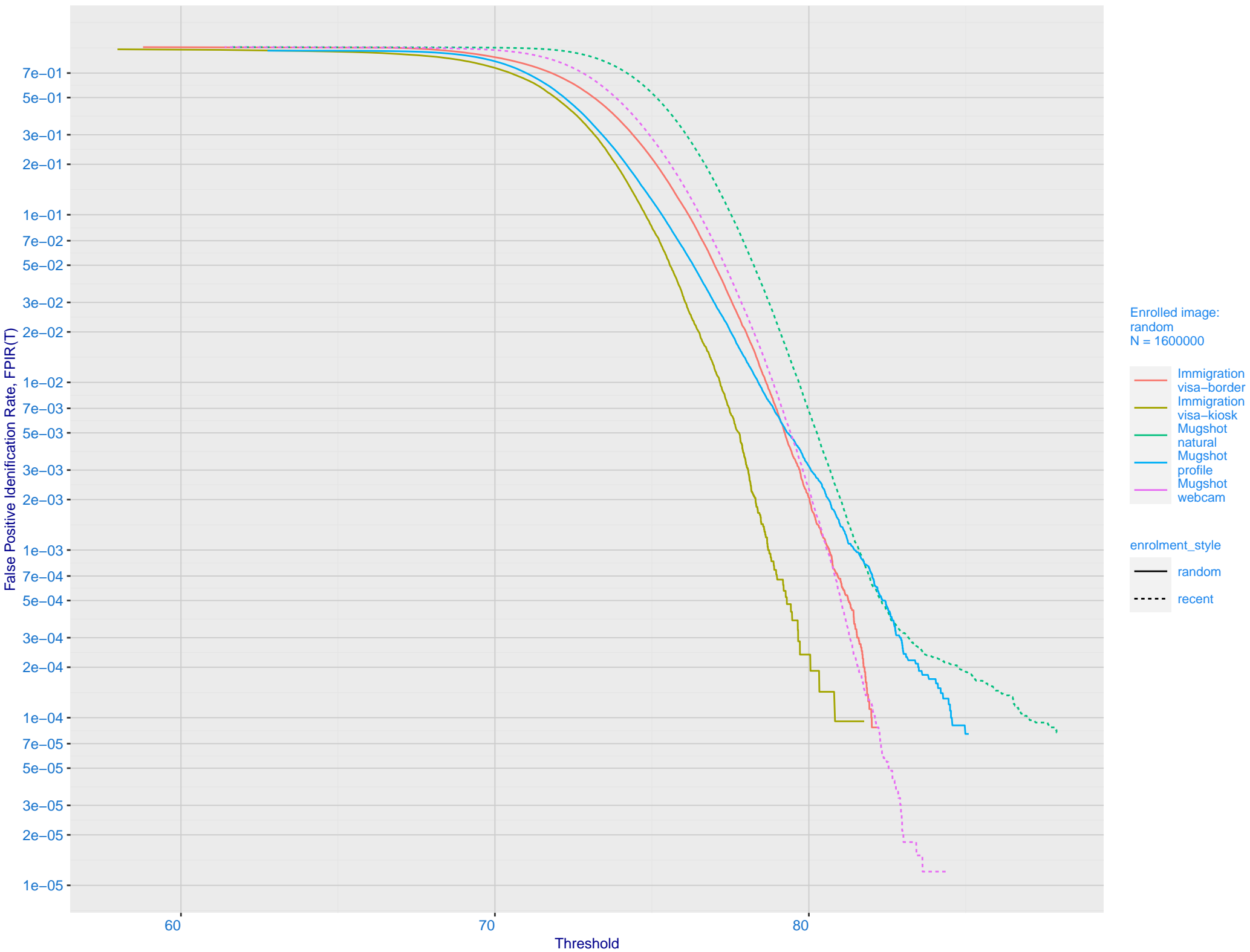
E: Dependence of error rates on T by number enrolled identities, N, for Mugshot natural images



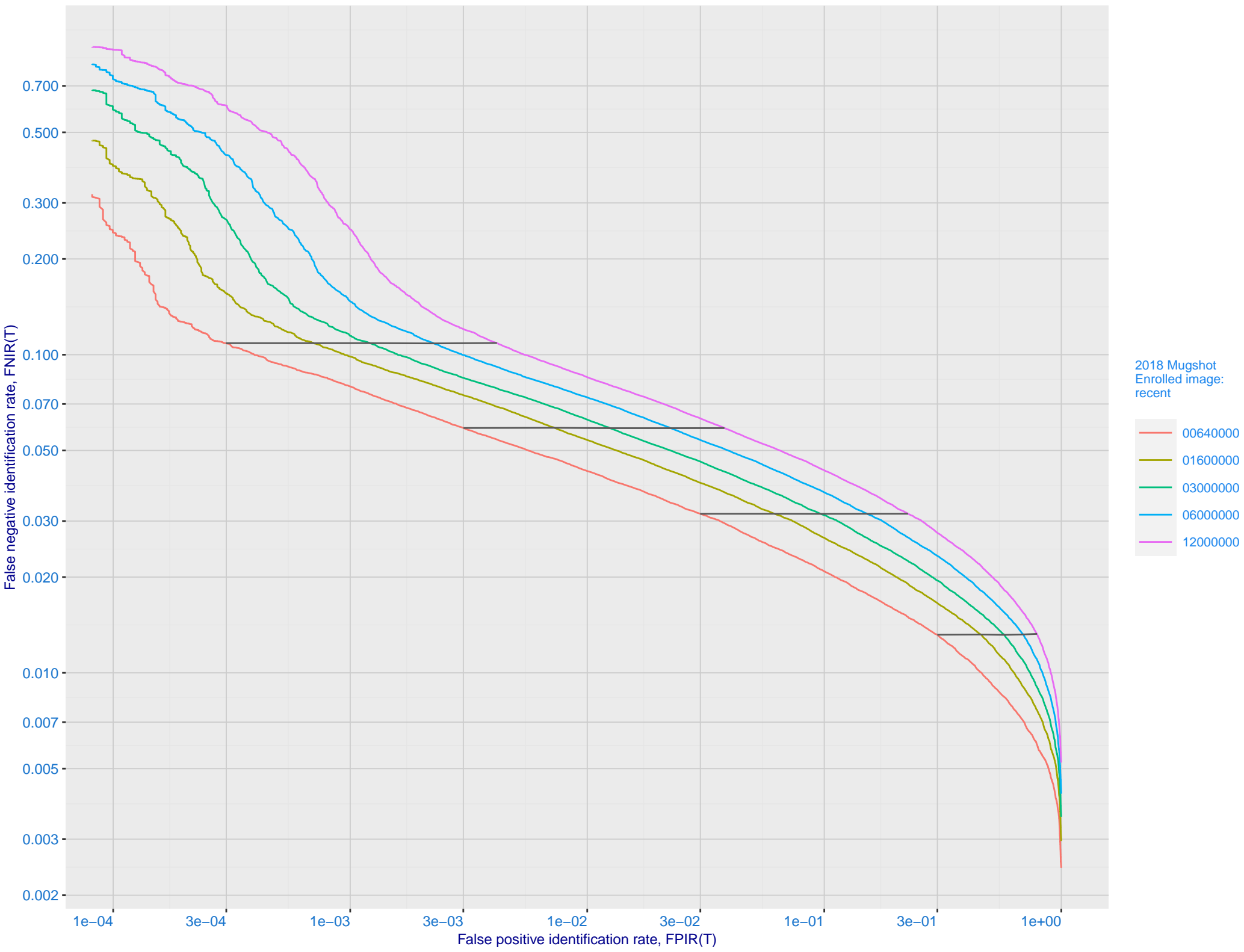
F: FPIR vs. Selectivity for mugshot images, N = 1600000 subjects enrolled with one recent mate



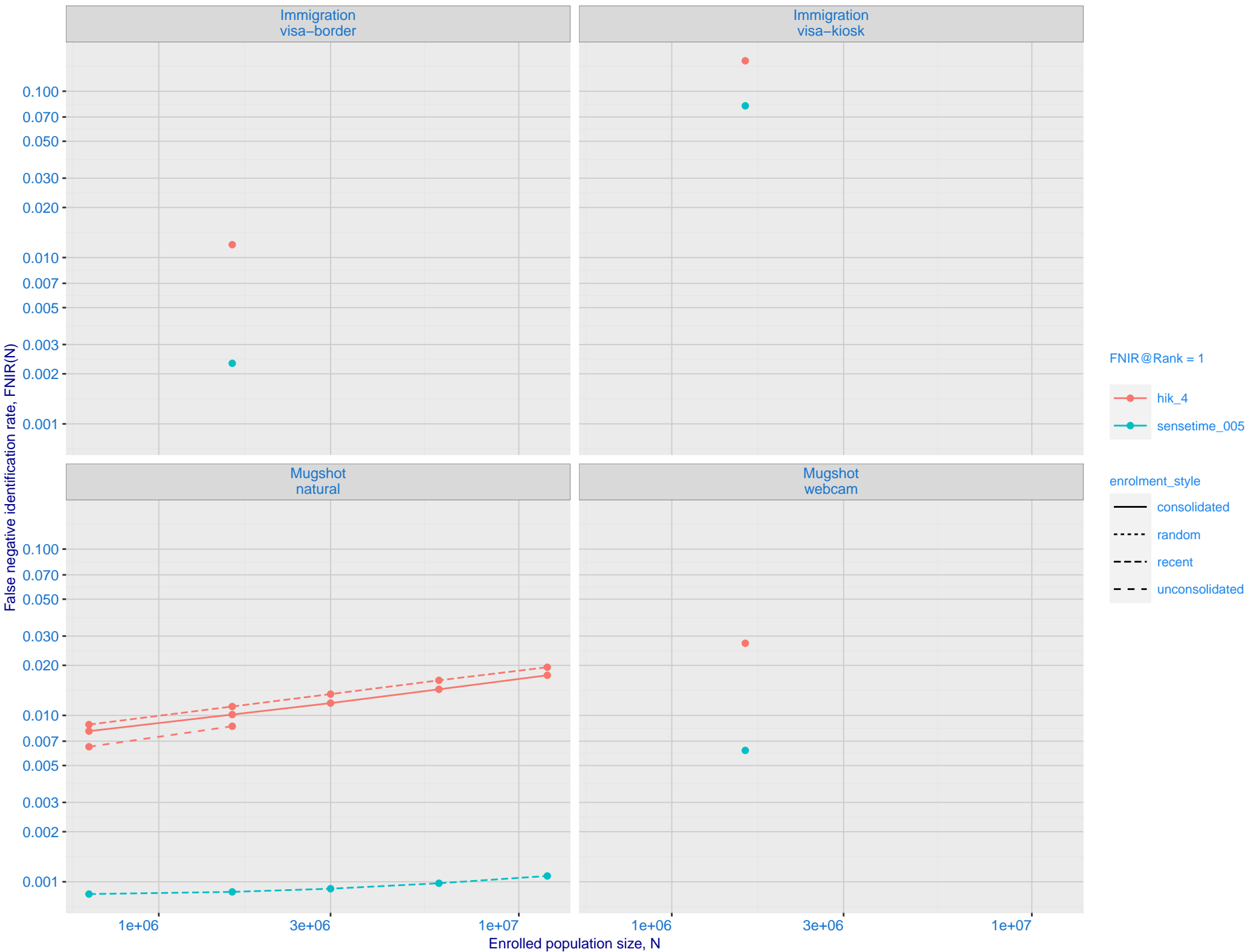
G: FPIR dependence on T by probe type for N = 1600000 subjects



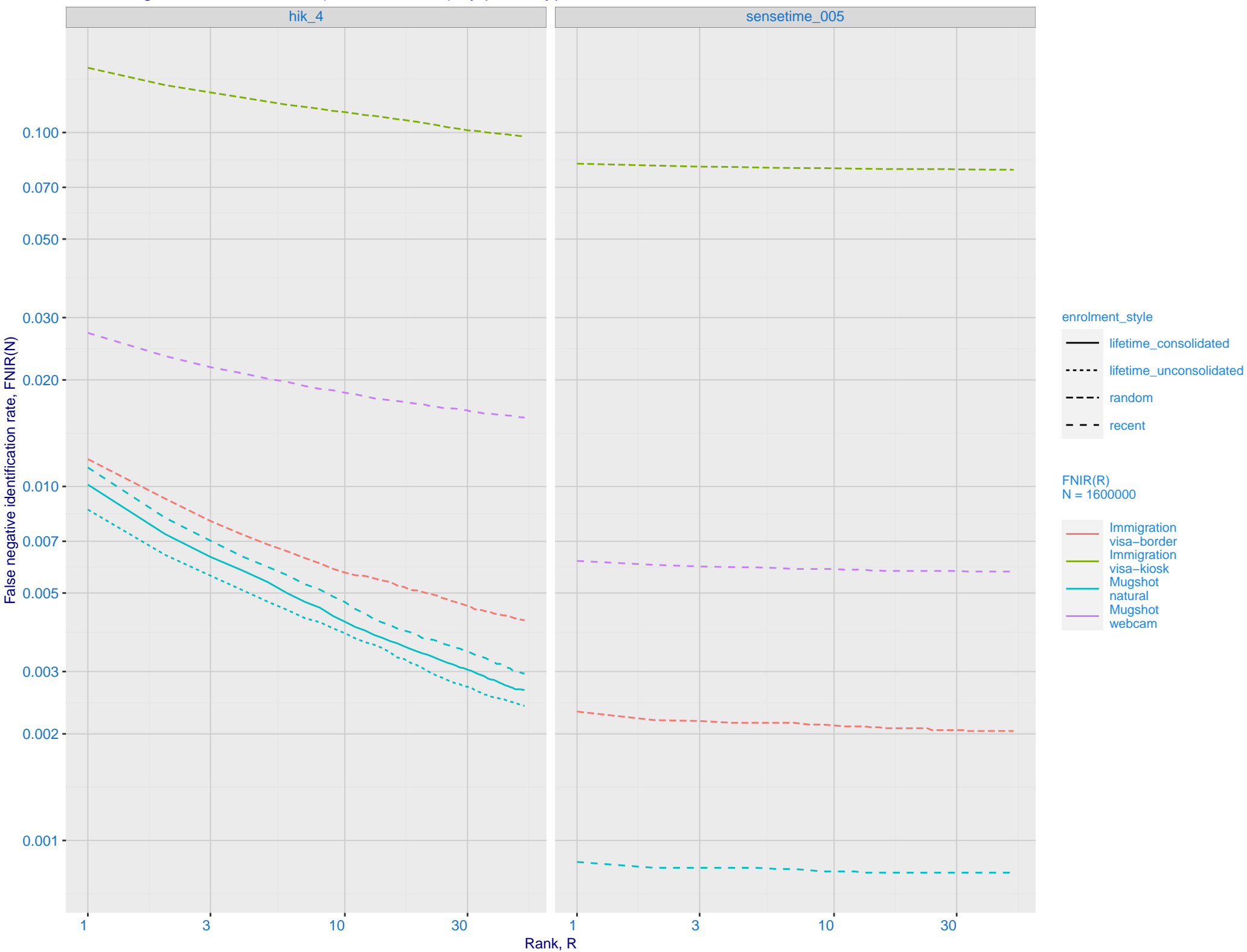
J: DET for Mugshot natural images and various N. Links connect points of equal threshold.



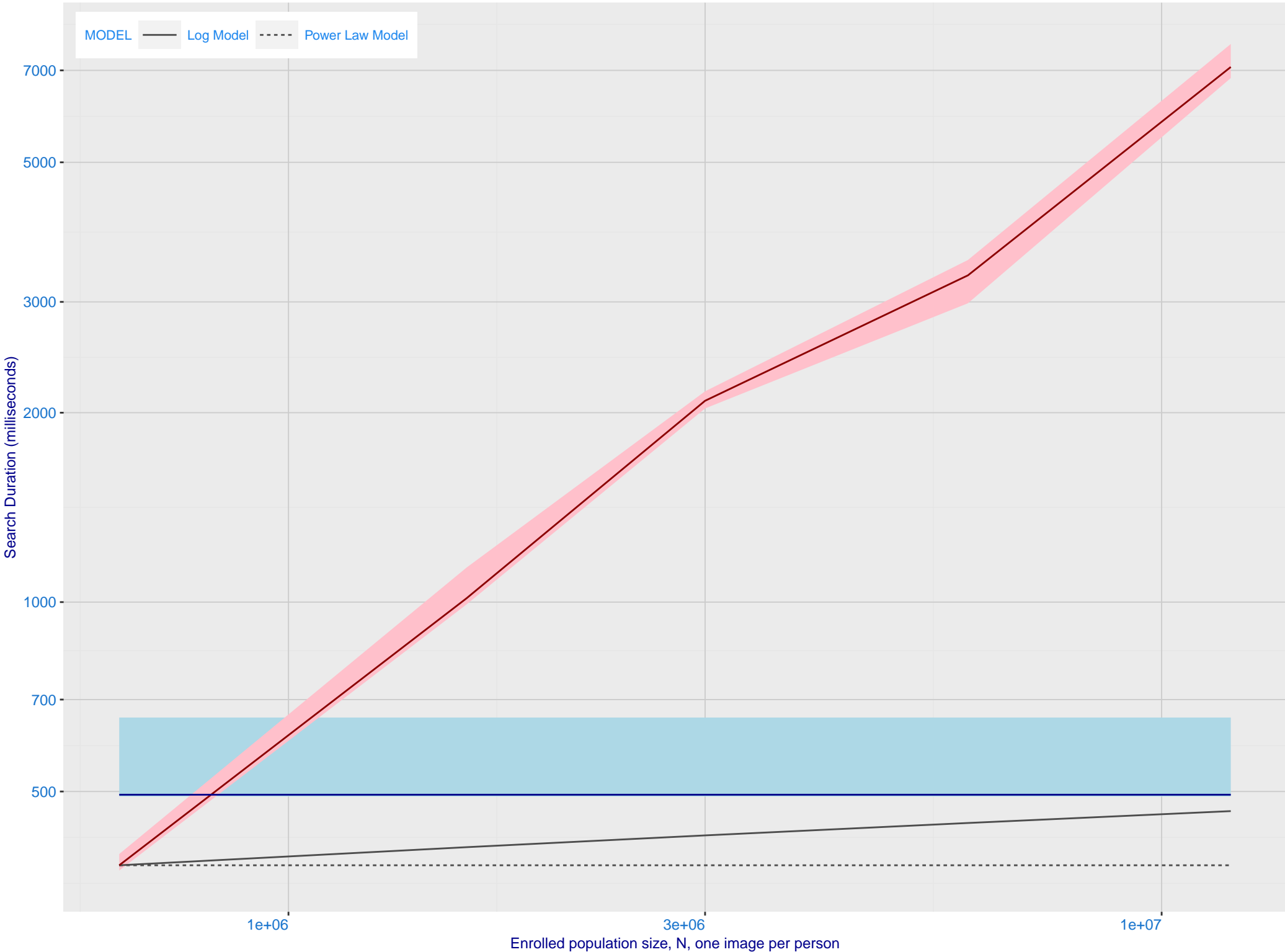
K: Investigational mode: FNIR(N, 1, 0) vs. most accurate (sensetime_005)



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



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

Dataset: 2018 Mugshot N = 3068801



cloudwalk-hr-000