A: Datasheet

Algorithm: rankone_009

Developer: Rank One Computing

Submission Date: 2020_06_26

Template size: 260 bytes

Template time (2.5 percentile): 179 msec

Template time (median): 185 msec

Template time (97.5 percentile): 242 msec

Investigation:

Frontal mugshot ranking 81 (out of 329) –– FNIR(1600000, 0, 1) = 0.0024 vs. lowest 0.0009 from sensetime_006

Mugshot webcam ranking 67 (out of 291) –– FNIR(1600000, 0, 1) = 0.0126 vs. lowest 0.0057 from sensetime_006

Mugshot profile ranking 106 (out of 260) –– FNIR(1600000, 0, 1) = 0.5492 vs. lowest 0.0550 from sensetime_006

Immigration visa–border ranking 80 (out of 218) –– FNIR(1600000, 0, 1) = 0.0056 vs. lowest 0.0009 from sensetime_006

Immigration visa–kiosk ranking 106 (out of 215) –– FNIR(1600000, 0, 1) = 0.1345 vs. lowest 0.0487 from cubox_000

Identification:

Frontal mugshot ranking 64 (out of 329) –– FNIR(1600000, T, L+1) = 0.0176, FPIR=0.001000 vs. lowest 0.0017 from nec_005
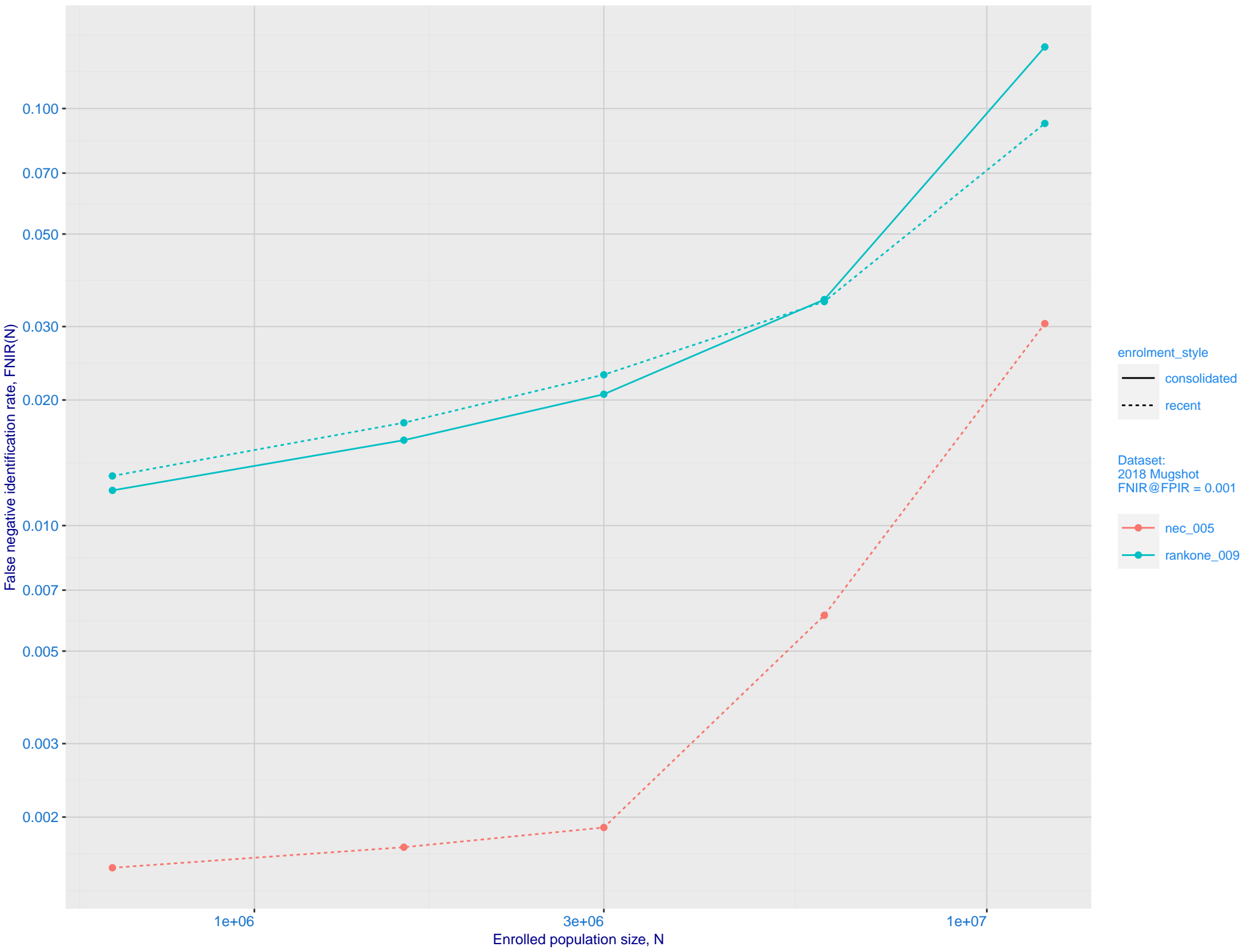
Mugshot webcam ranking 87 (out of 289) –– FNIR(1600000, T, L+1) = 0.0763, FPIR=0.001000 vs. lowest 0.0120 from nec_005

Mugshot profile ranking 68 (out of 259) –– FNIR(1600000, T, L+1) = 0.9695, FPIR=0.001000 vs. lowest 0.1331 from cloudwalk_hr_000
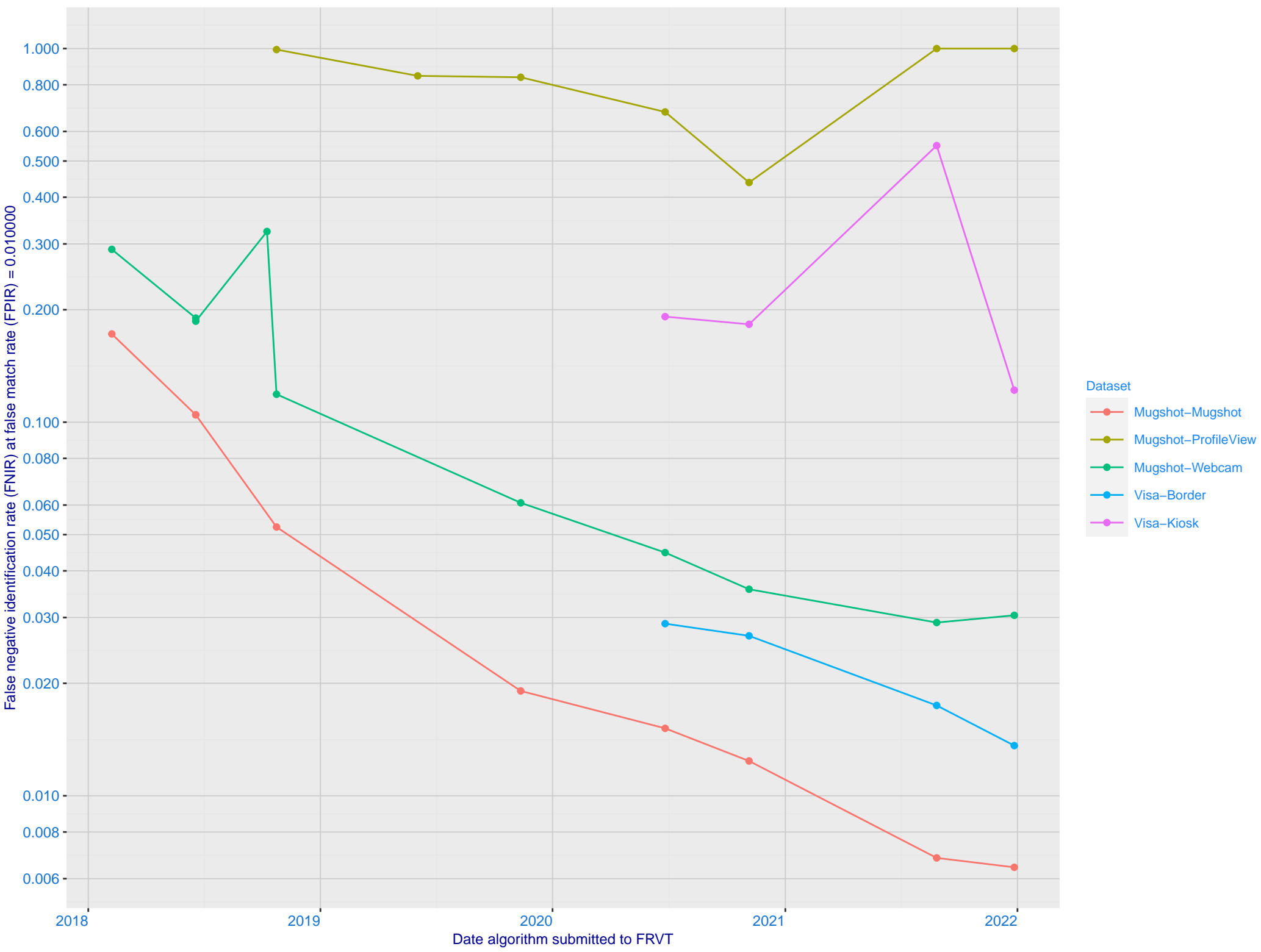
Immigration visa–border ranking 102 (out of 217) –– FNIR(1600000, T, L+1) = 0.0616, FPIR=0.001000 vs. lowest 0.0032 from paravision_009

Immigration visa–kiosk ranking 83 (out of 212) –– FNIR(1600000, T, L+1) = 0.3278, FPIR=0.001000 vs. lowest 0.0728 from paravision_009
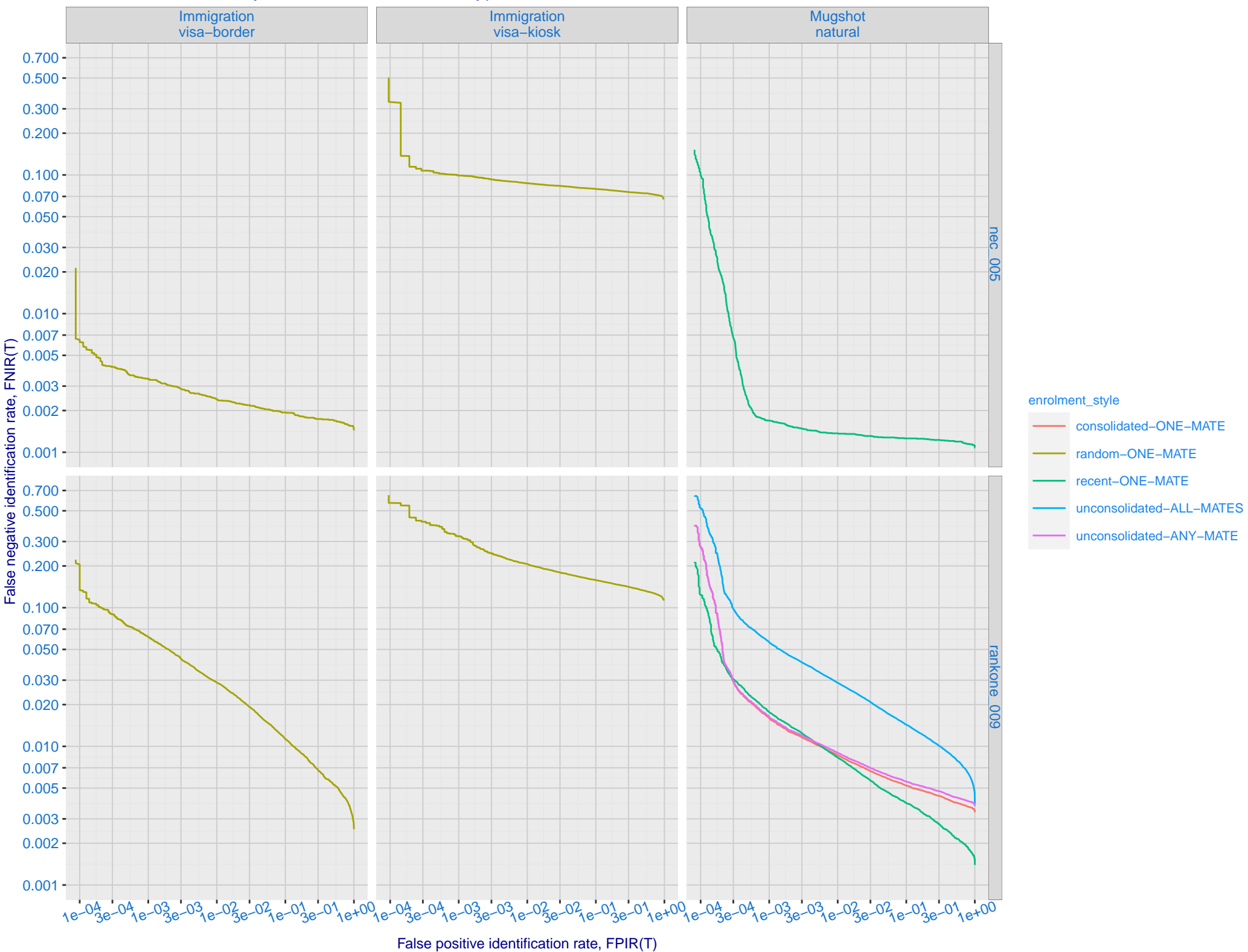
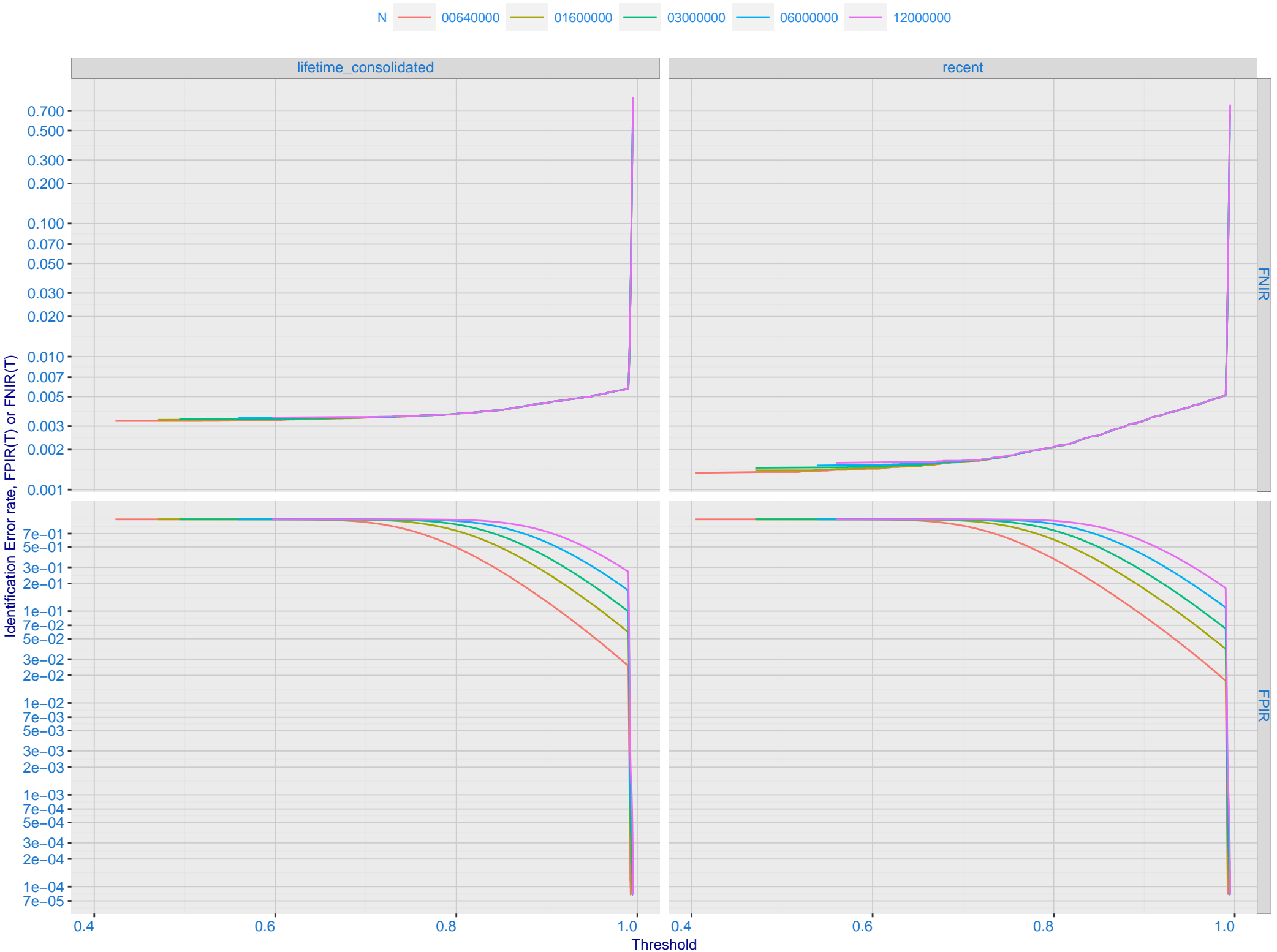B: Mugshot natural images, identification mode: FNIR(N, L+1, T) vs. most accurate (nec_005)

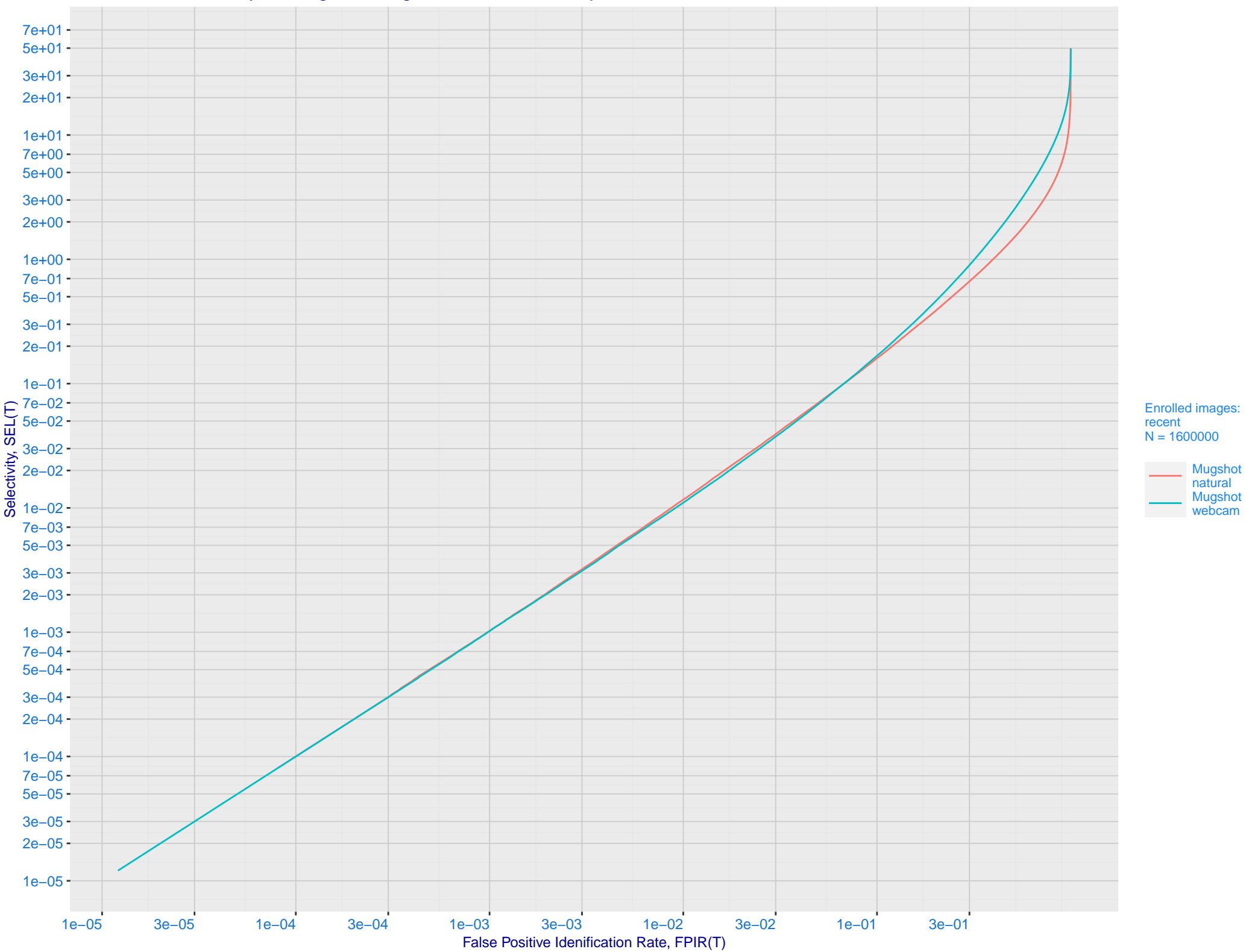**C: Evolution of accuracy for RANKONE algorithms on three datasets 2018 – present**

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

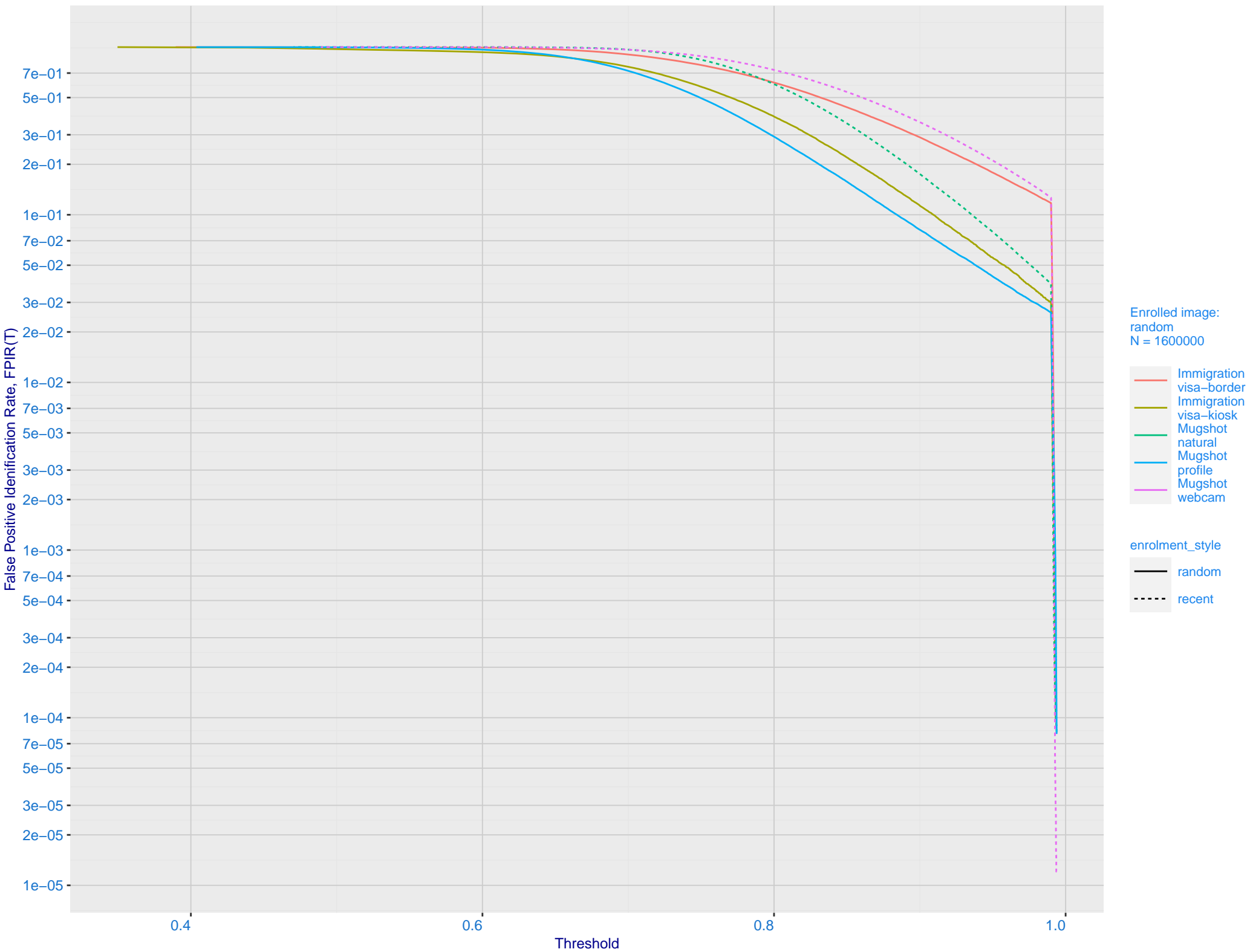D: 1:N error tradeoff by dataset and enrollment type. N = 1600000 individuals

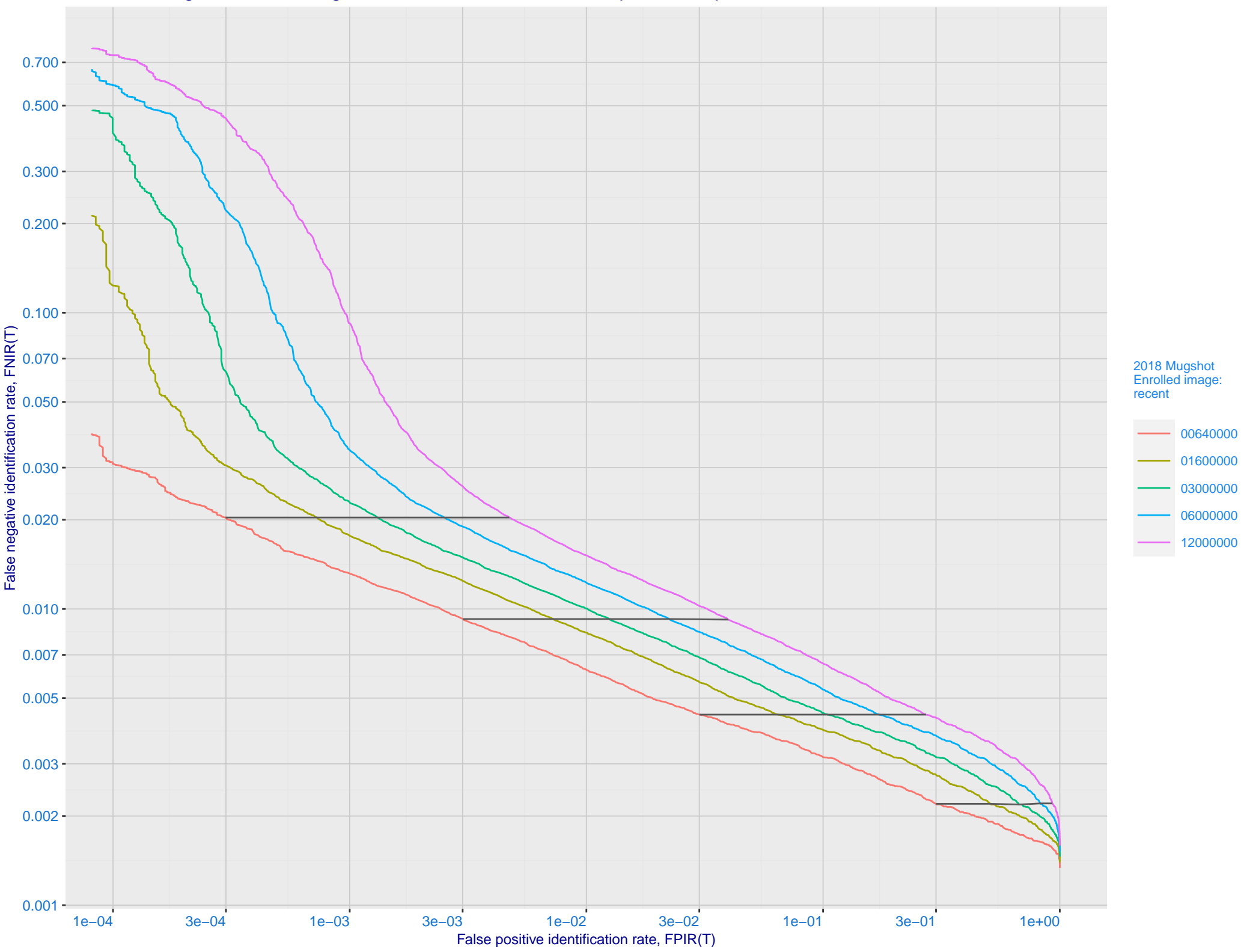E: Dependence of error rates on T by number enrolled identities, N, for Mugshot natural images

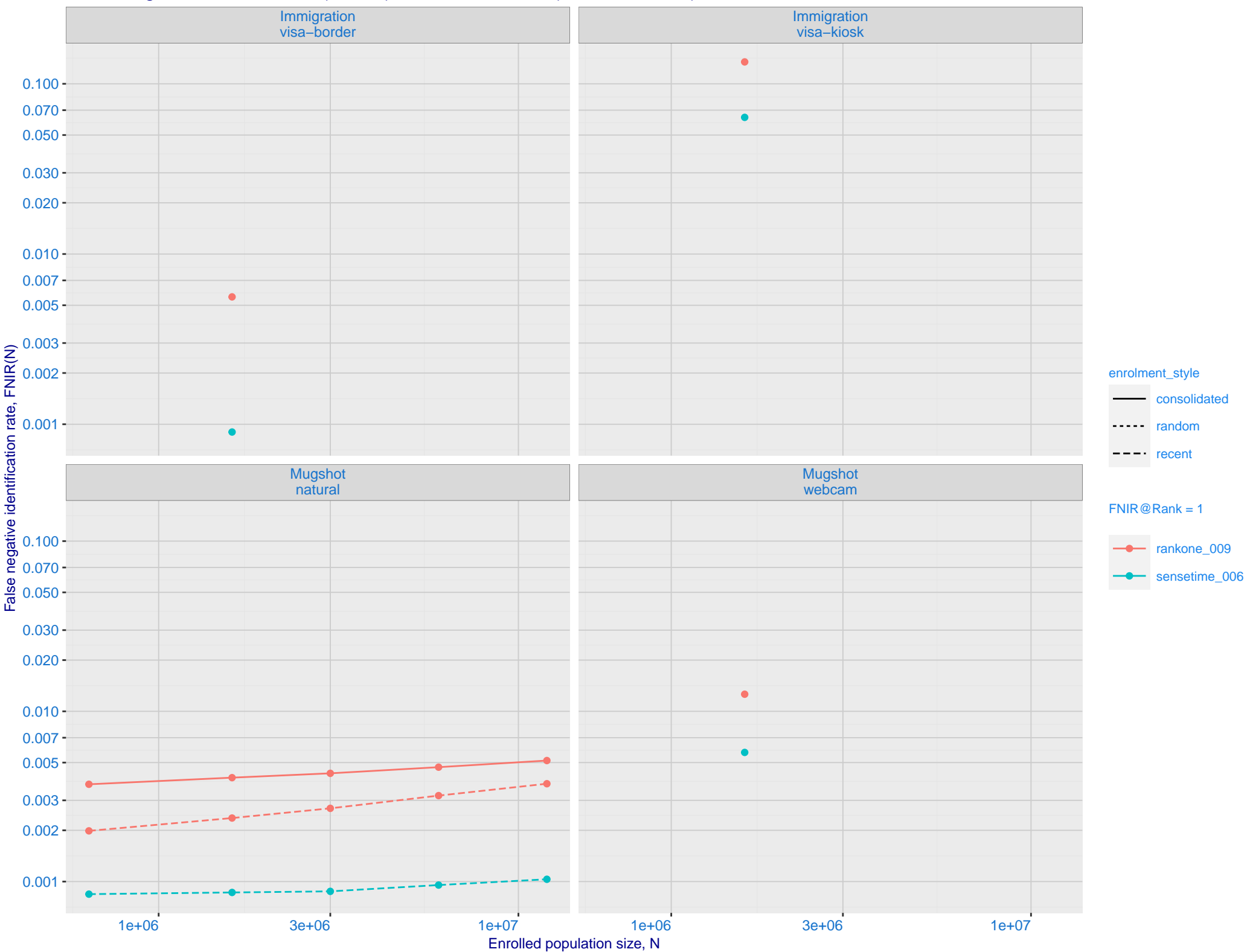F: FPIR vs. Selectivity for mugshot images, N = 1600000 subjects enrolled with one recent mate

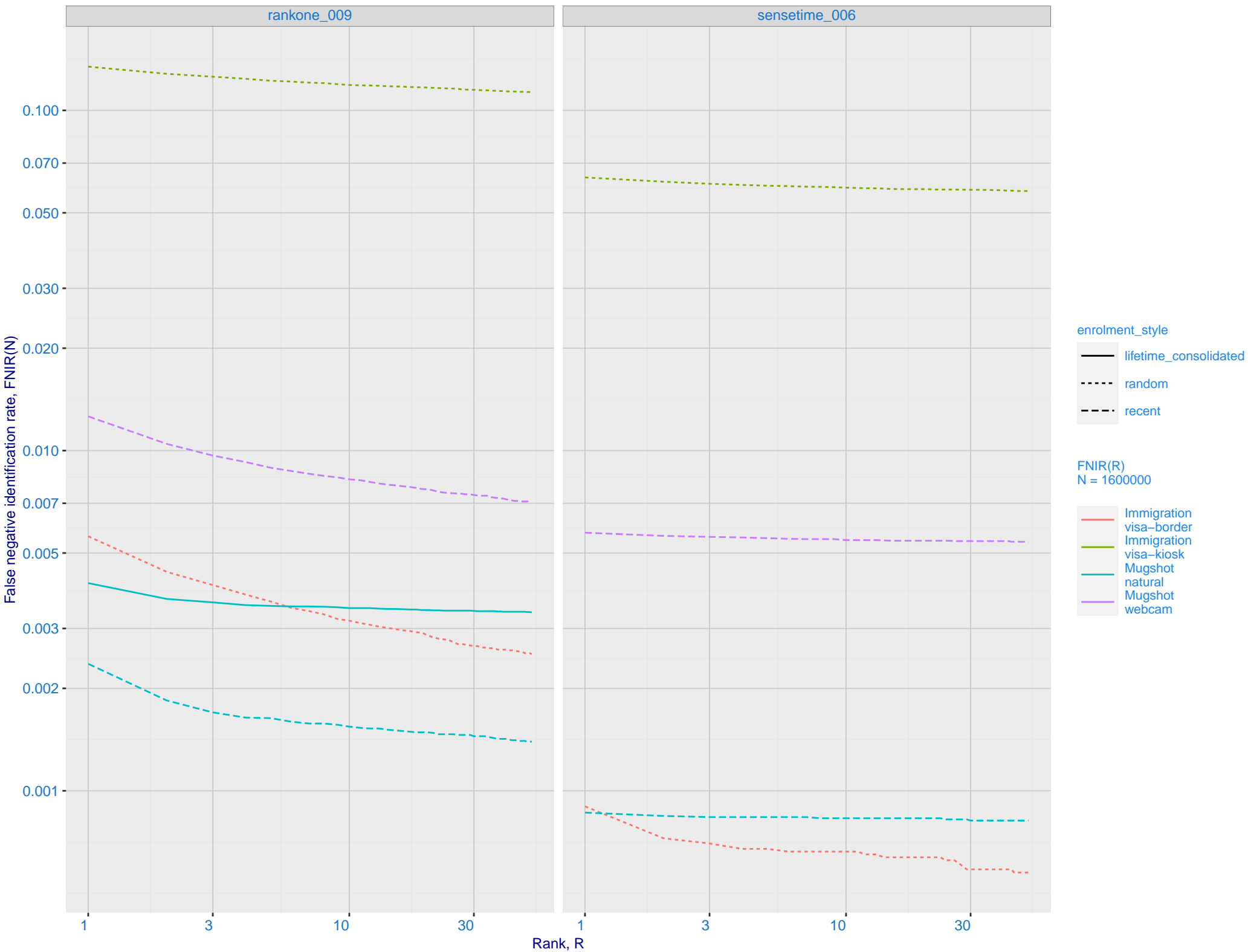G: FPIR dependence on T by probe type for N = 1600000 subjects

J: DET for Mugshot natural images and various N. Links connect points of equal threshold.
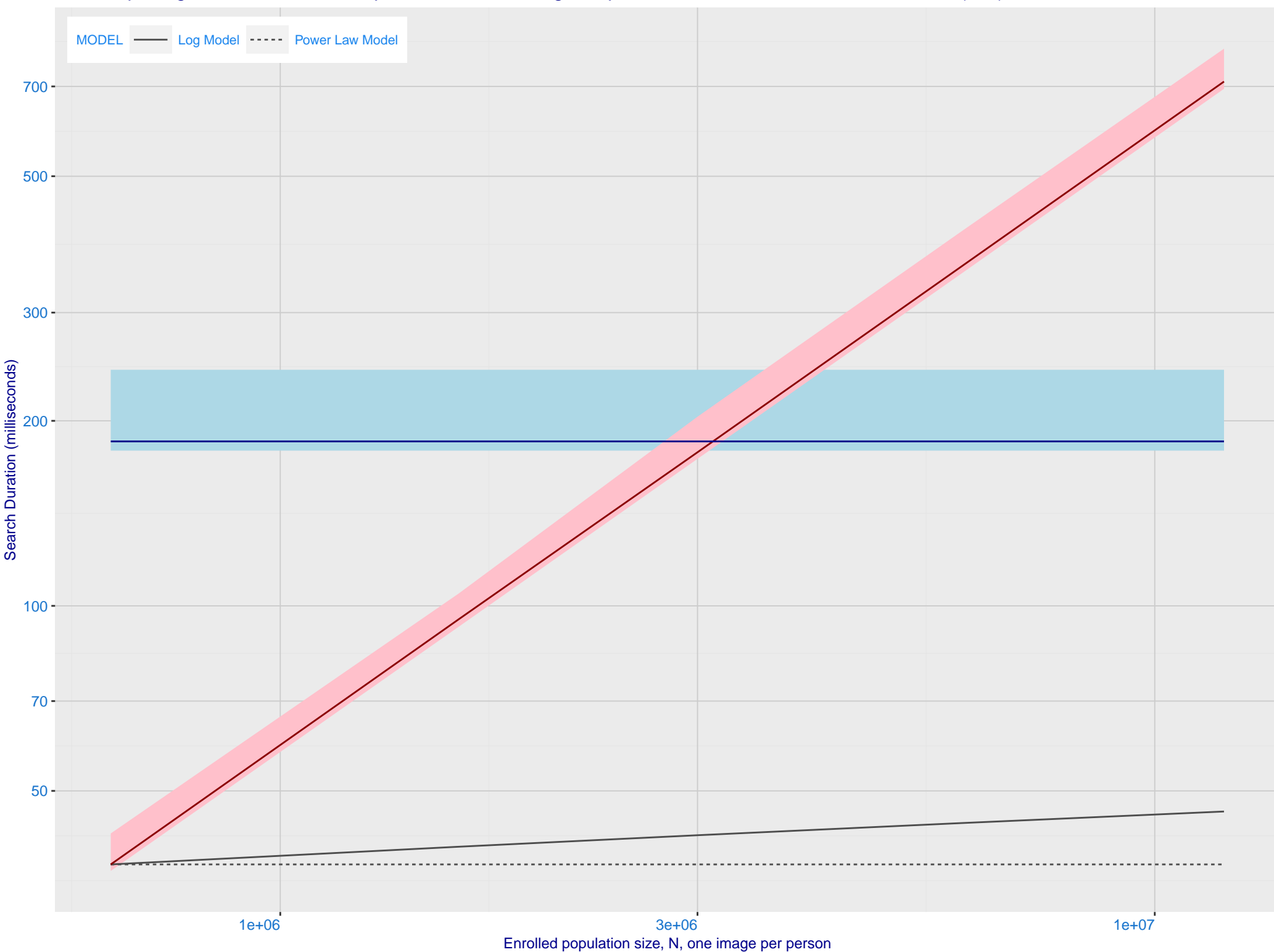
K: Investigational mode: FNIR(N, 1, 0) vs. most accurate (sensetime_006)

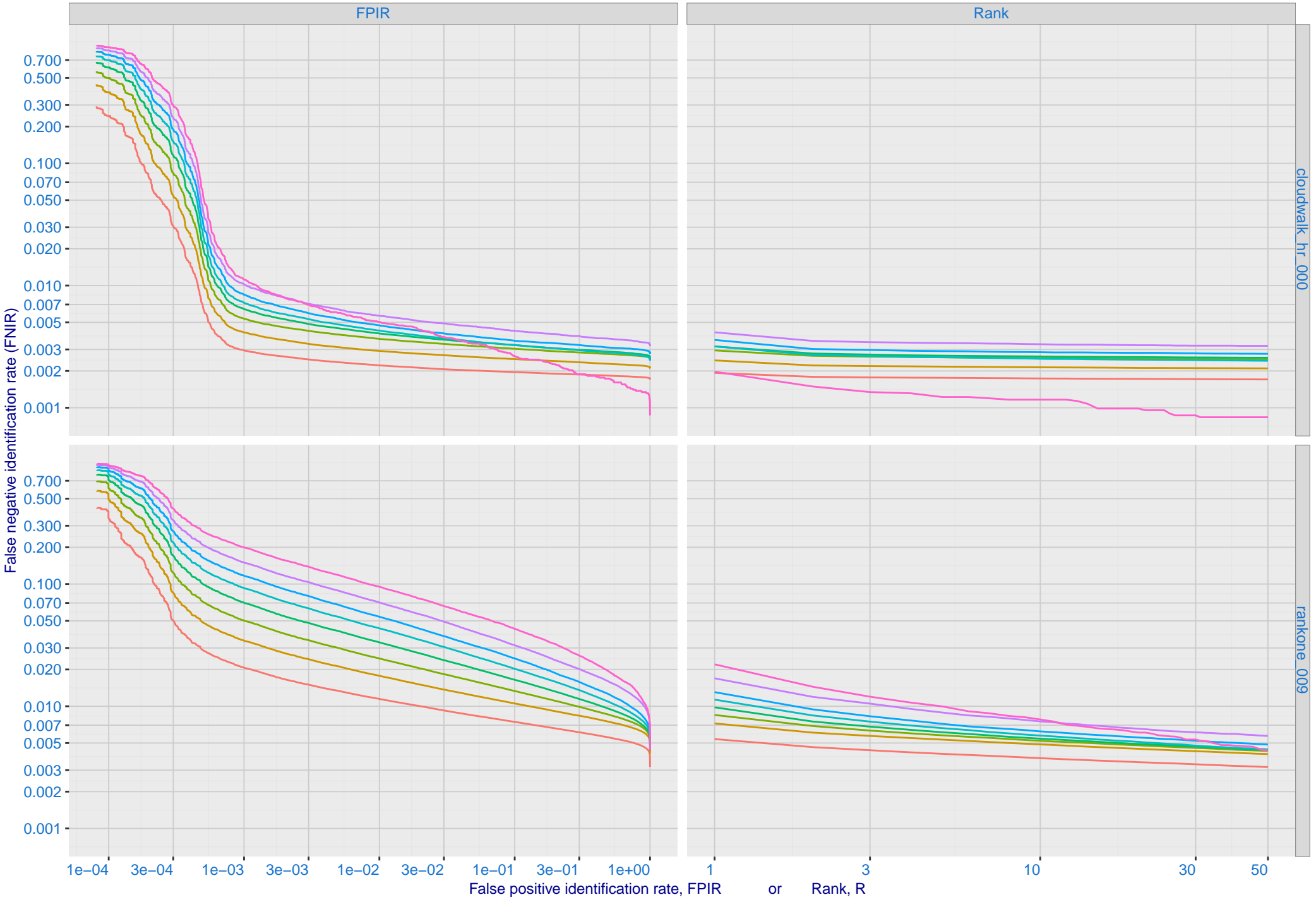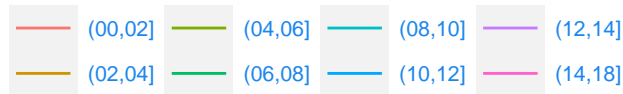L: Investigational mode: FNIR(1600000, R, 0) by probe type

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   (00,02]   (04,06]   (08,10]   (12,14]
(02,04]   (06,08]   (10,12]   (14,18]

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