A: Datasheet

Algorithm: nec_0

Developer: NEC

Submission Date: 2018_06_21

Template size: 2592 bytes

Template time (2.5 percentile): 79 msec

Template time (median): 82 msec

Template time (97.5 percentile): 89 msec

Investigation:

Frontal mugshot ranking 156 (out of 265) –– FNIR(1600000, 0, 1) = 0.0170 vs. lowest 0.0009 from sensetime_005

Mugshot webcam ranking 137 (out of 227) –– FNIR(1600000, 0, 1) = 0.0409 vs. lowest 0.0062 from sensetime_005

Mugshot profile ranking 152 (out of 196) –– FNIR(1600000, 0, 1) = 0.9586 vs. lowest 0.0591 from sensetime_005

Immigration visa–border ranking 78 (out of 148) –– FNIR(1600000, 0, 1) = 0.0246 vs. lowest 0.0013 from visionlabs_010

Immigration visa–kiosk ranking 90 (out of 145) –– FNIR(1600000, 0, 1) = 0.2428 vs. lowest 0.0568 from hr_000

Identification:

Frontal mugshot ranking 116 (out of 265) –– FNIR(1600000, T, L+1) = 0.0788, FPIR=0.001000 vs. lowest 0.0018 from sensetime_004
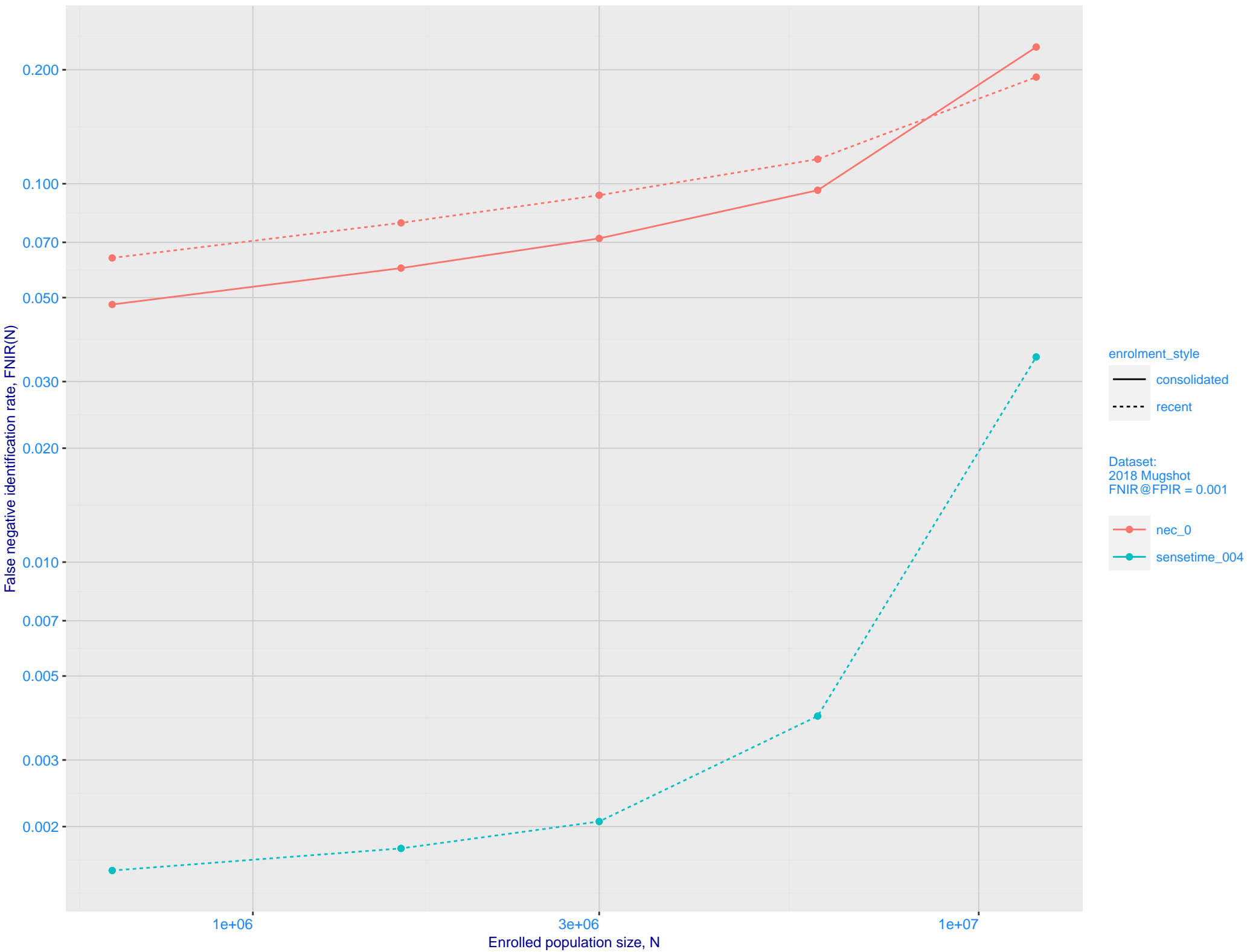
Mugshot webcam ranking 100 (out of 225) –– FNIR(1600000, T, L+1) = 0.1404, FPIR=0.001000 vs. lowest 0.0122 from sensetime_003

Mugshot profile ranking 56 (out of 195) –– FNIR(1600000, T, L+1) = 0.9793, FPIR=0.001000 vs. lowest 0.1331 from hr_000
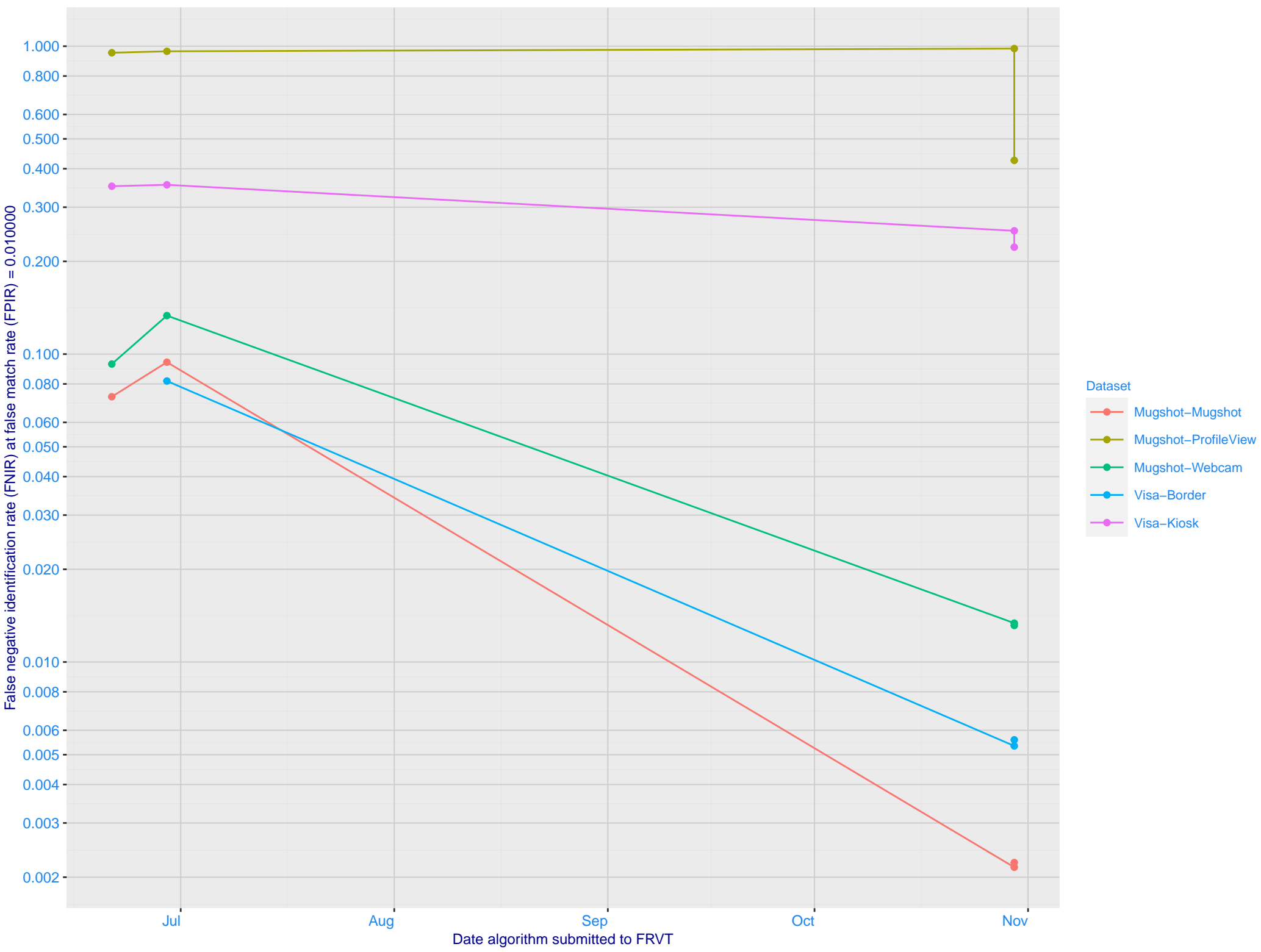
Immigration visa–border ranking 146 (out of 146) –– FNIR(1600000, T, L+1) = NA, FPIR=0.001000 vs. lowest 0.0049 from hr_000

Immigration visa–kiosk ranking 61 (out of 141) –– FNIR(1600000, T, L+1) = 0.4745, FPIR=0.001000 vs. lowest 0.0996 from hr_000
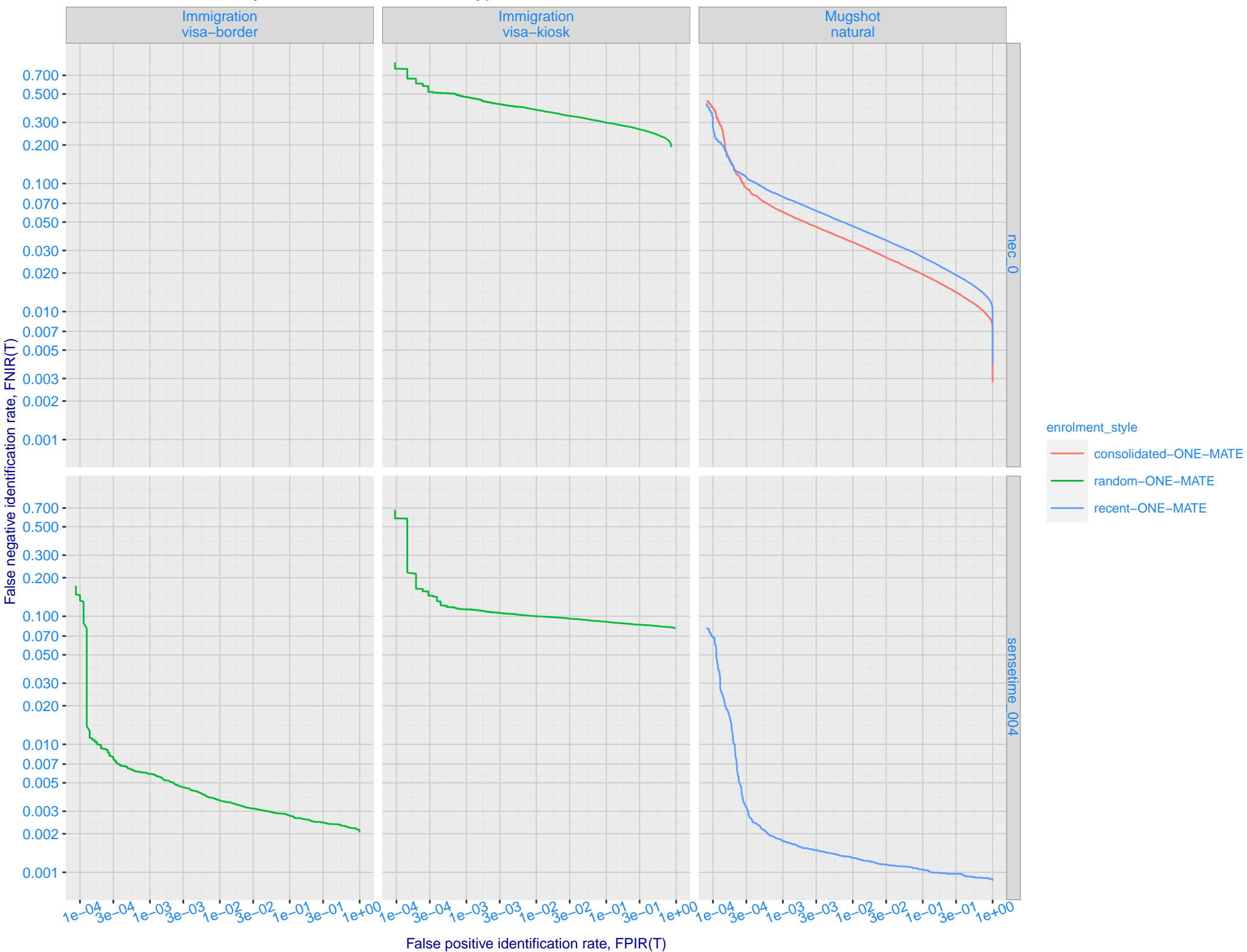
B: Mugshot natural images, identification mode: FNIR(N, L+1, T) vs. most accurate (sensetime_004)

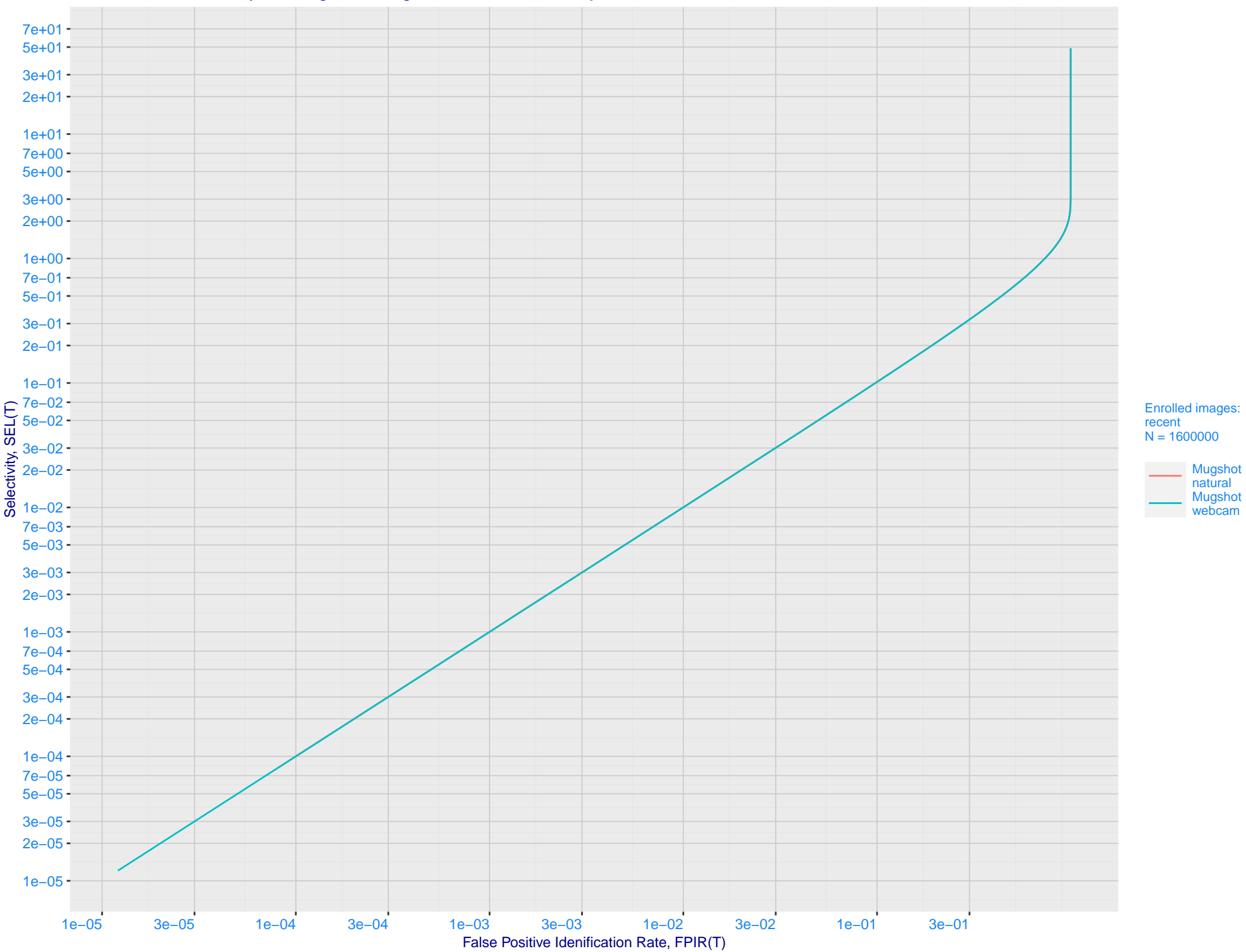**C: Evolution of accuracy for NEC algorithms on three datasets 2018 – present**

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
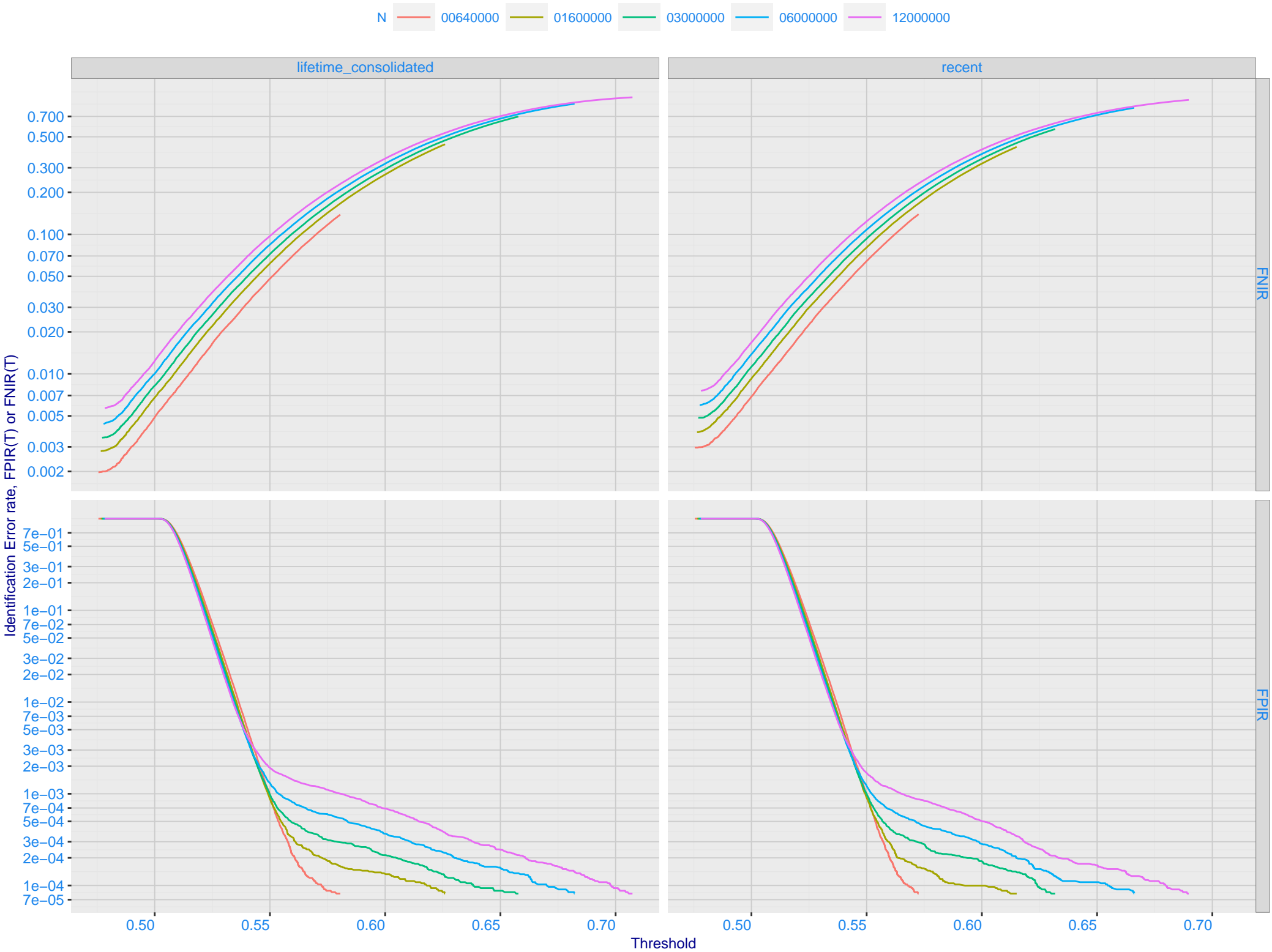
F: FPIR vs. Selectivity for mugshot images, N = 1600000 subjects enrolled with one recent mate
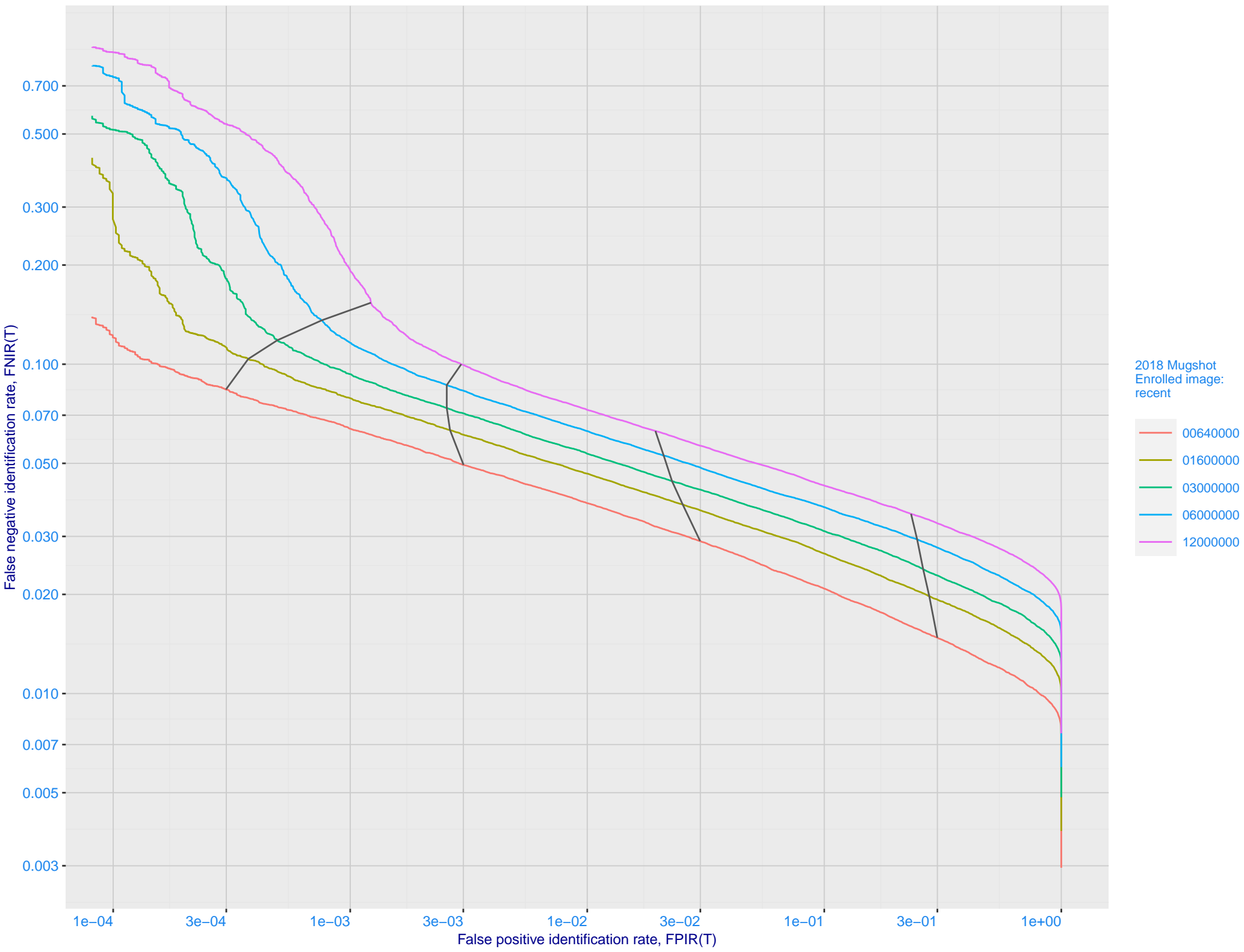
G: FPIR dependence on T by probe type for N = 1600000 subjects

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

2018 Mugshot
Enrolled image:
recent

— 00640000
— 01600000
— 03000000
— 06000000
— 12000000

False negative identification rate, FNIR(T)

False positive identification rate, FPIR(T)

I: Investigational mode: FNIR(N, 1, 0) vs. most accurate (sensetime_005)
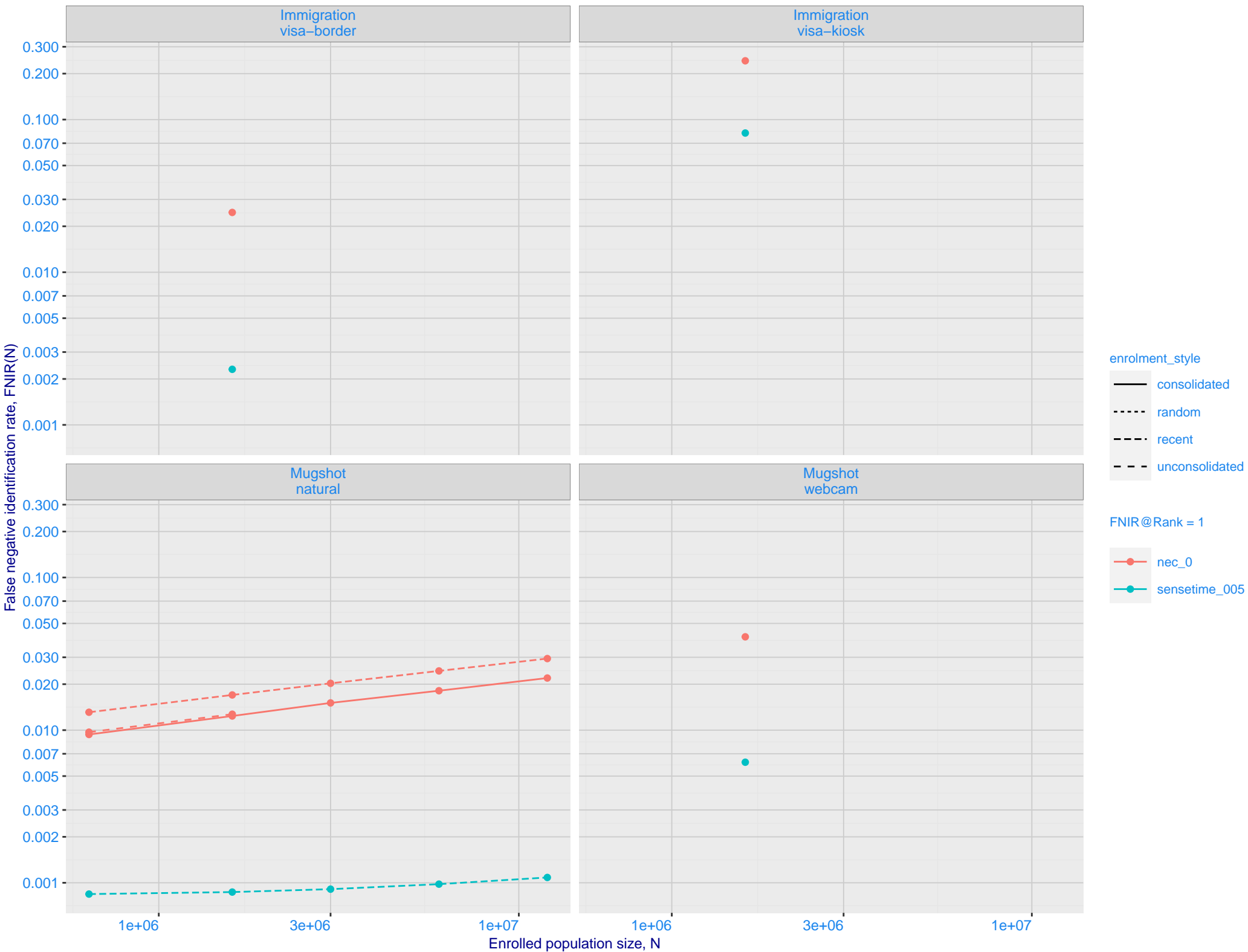
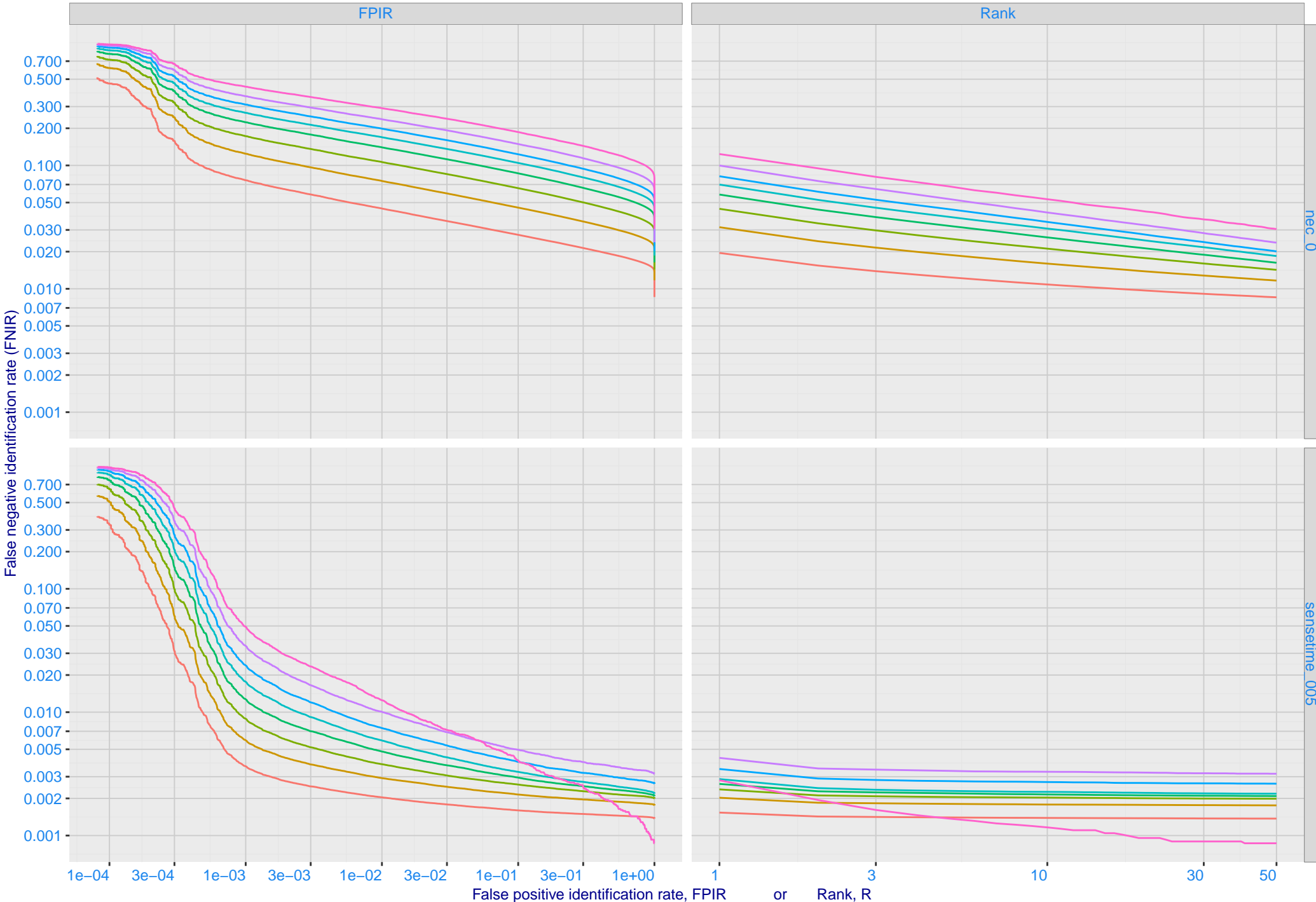J: Investigational mode: FNIR(1600000, R, 0) by probe type
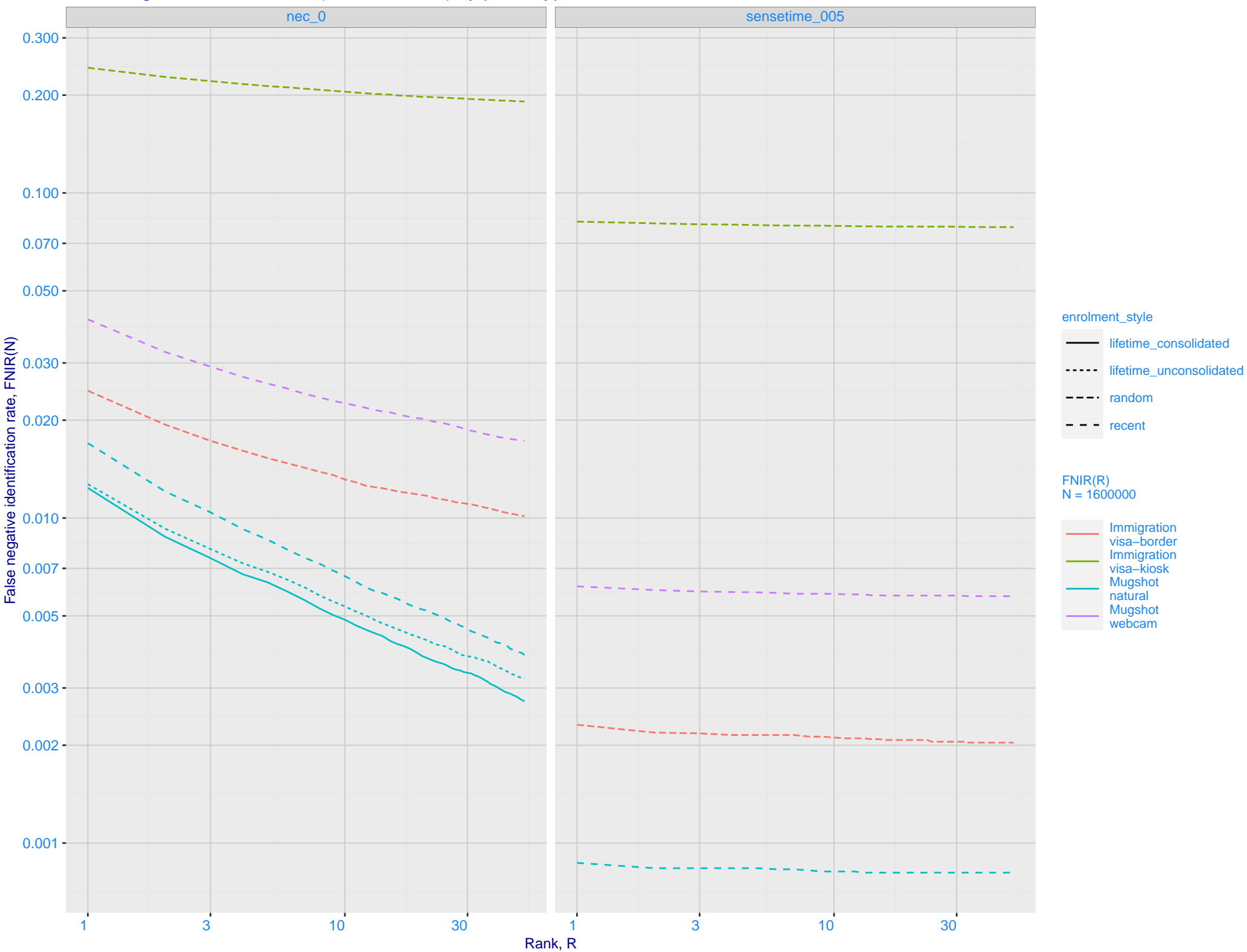
Template duration; search duration vs. N. The blue and pink ribbon covers 95 percent of observed measurements. The template generation time is independent of N. The log and power–law models are fit to the first two (N,T) observations
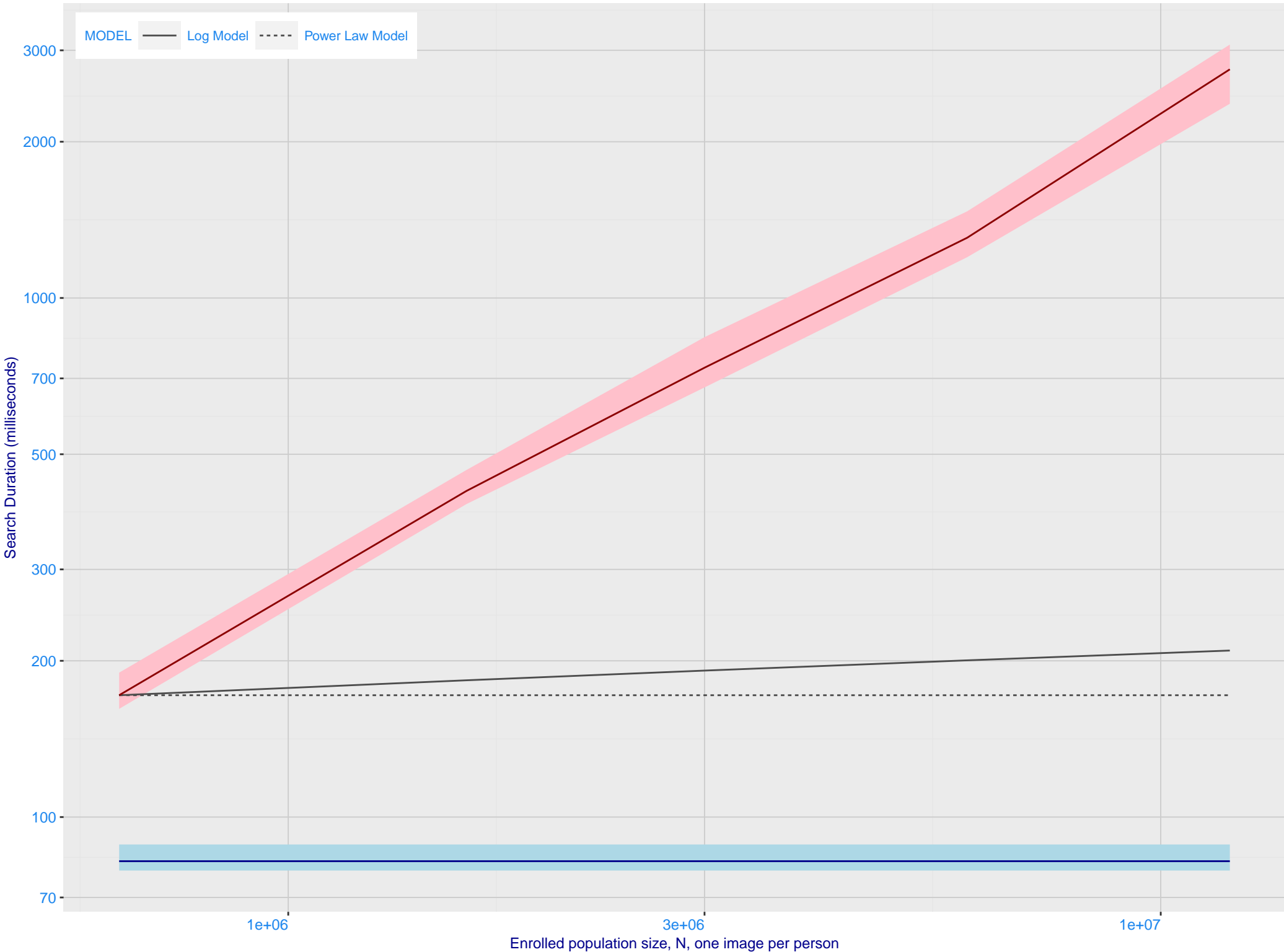
M: Identification FNIR(N, T, L+1) and Investigational FNIR(N, 0, R) under ageing

N: Decline of genuine scores with ageing