A: Datasheet

Algorithm: remarkai_000

Developer: Remark Holdings

Submission Date: 2019_06_12

Template size: 2048 bytes

Template time (2.5 percentile): 632 msec

Template time (median): 650 msec

Template time (97.5 percentile): 883 msec

Investigation:

Frontal mugshot ranking 53 (out of 259) –– FNIR(1600000, 0, 1) = 0.0034 vs. lowest 0.0009 from sensetime_005

Mugshot webcam ranking 59 (out of 221) –– FNIR(1600000, 0, 1) = 0.0183 vs. lowest 0.0062 from sensetime_005

Mugshot profile ranking 65 (out of 190) –– FNIR(1600000, 0, 1) = 0.6602 vs. lowest 0.0591 from sensetime_005

Immigration visa–border ranking 47 (out of 142) –– FNIR(1600000, 0, 1) = 0.0076 vs. lowest 0.0014 from visionlabs_009

Immigration visa–kiosk ranking 57 (out of 139) –– FNIR(1600000, 0, 1) = 0.1484 vs. lowest 0.0694 from cib_000

Identification:

Frontal mugshot ranking 90 (out of 259) –– FNIR(1600000, T, L+1) = 0.0550, FPIR=0.001000 vs. lowest 0.0018 from sensetime_004
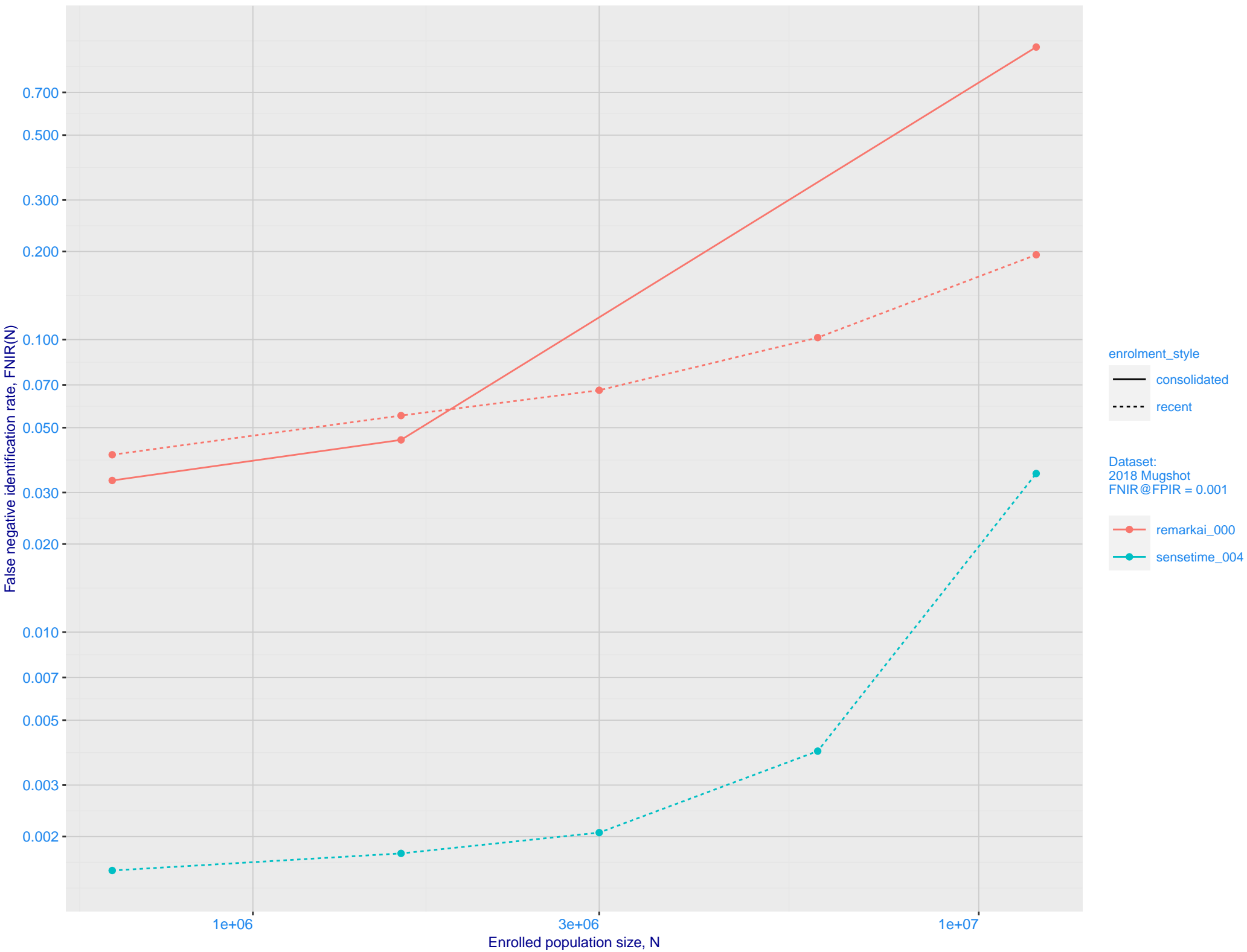
Mugshot webcam ranking 79 (out of 219) –– FNIR(1600000, T, L+1) = 0.1193, FPIR=0.001000 vs. lowest 0.0122 from sensetime_003

Mugshot profile ranking 130 (out of 189) –– FNIR(1600000, T, L+1) = 0.9991, FPIR=0.001000 vs. lowest 0.1733 from sensetime_005
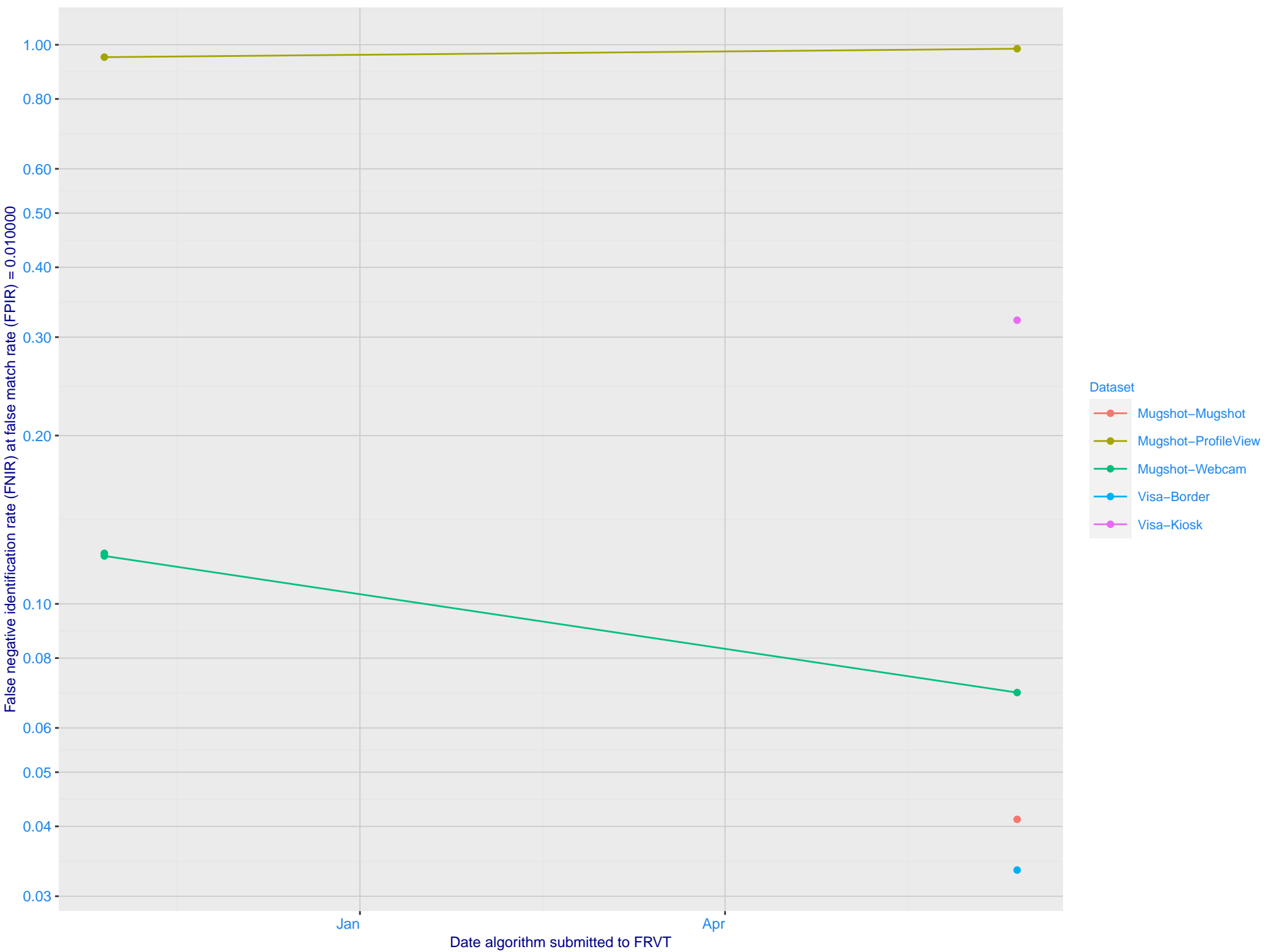
Immigration visa–border ranking 52 (out of 139) –– FNIR(1600000, T, L+1) = 0.0690, FPIR=0.001000 vs. lowest 0.0059 from sensetime_004

Immigration visa–kiosk ranking 73 (out of 134) –– FNIR(1600000, T, L+1) = 0.7303, FPIR=0.001000 vs. lowest 0.1048 from sensetime_005
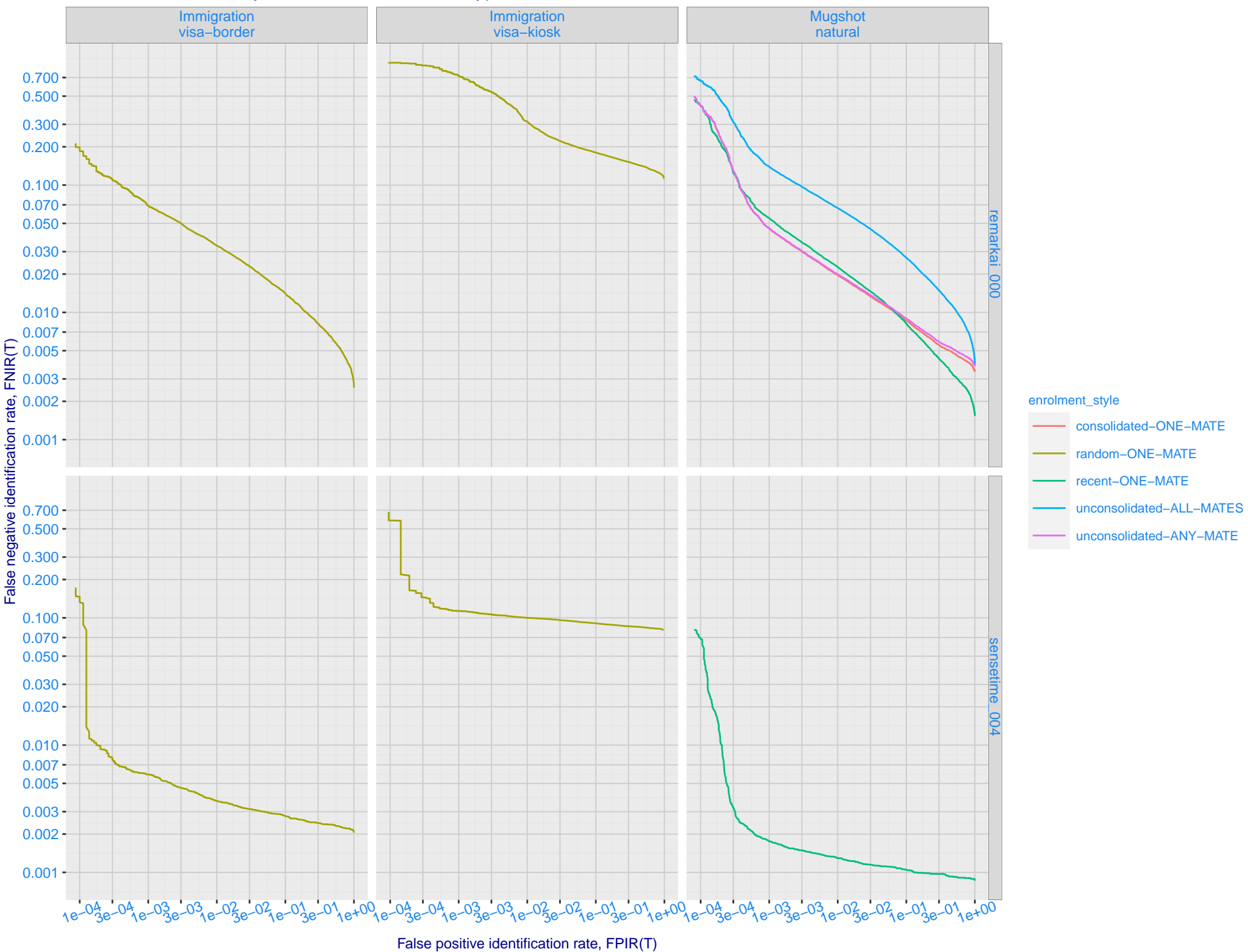
B: Mugshot natural images, identification mode: FNIR(N, L+1, T) vs. most accurate (sensetime_004)
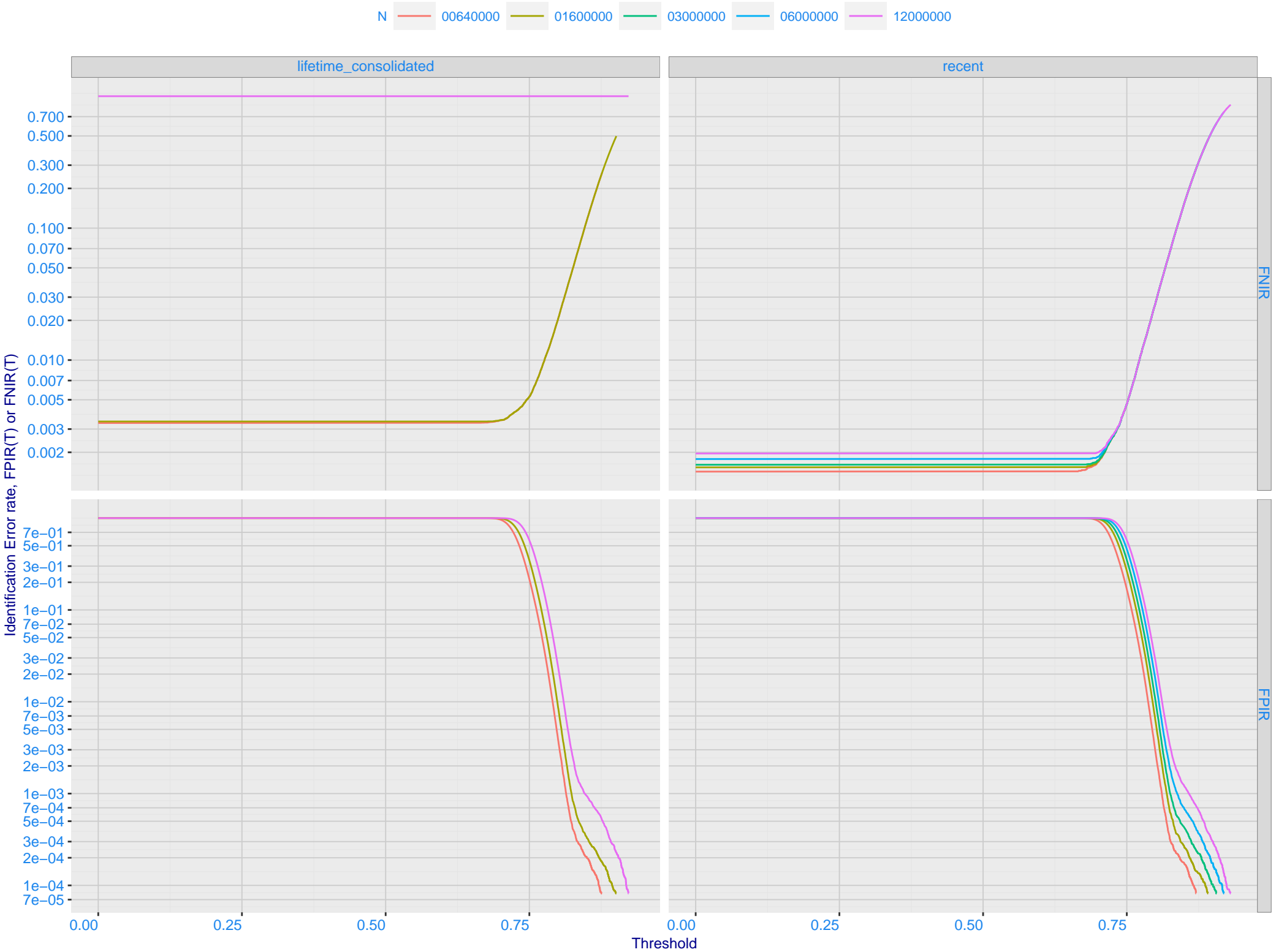
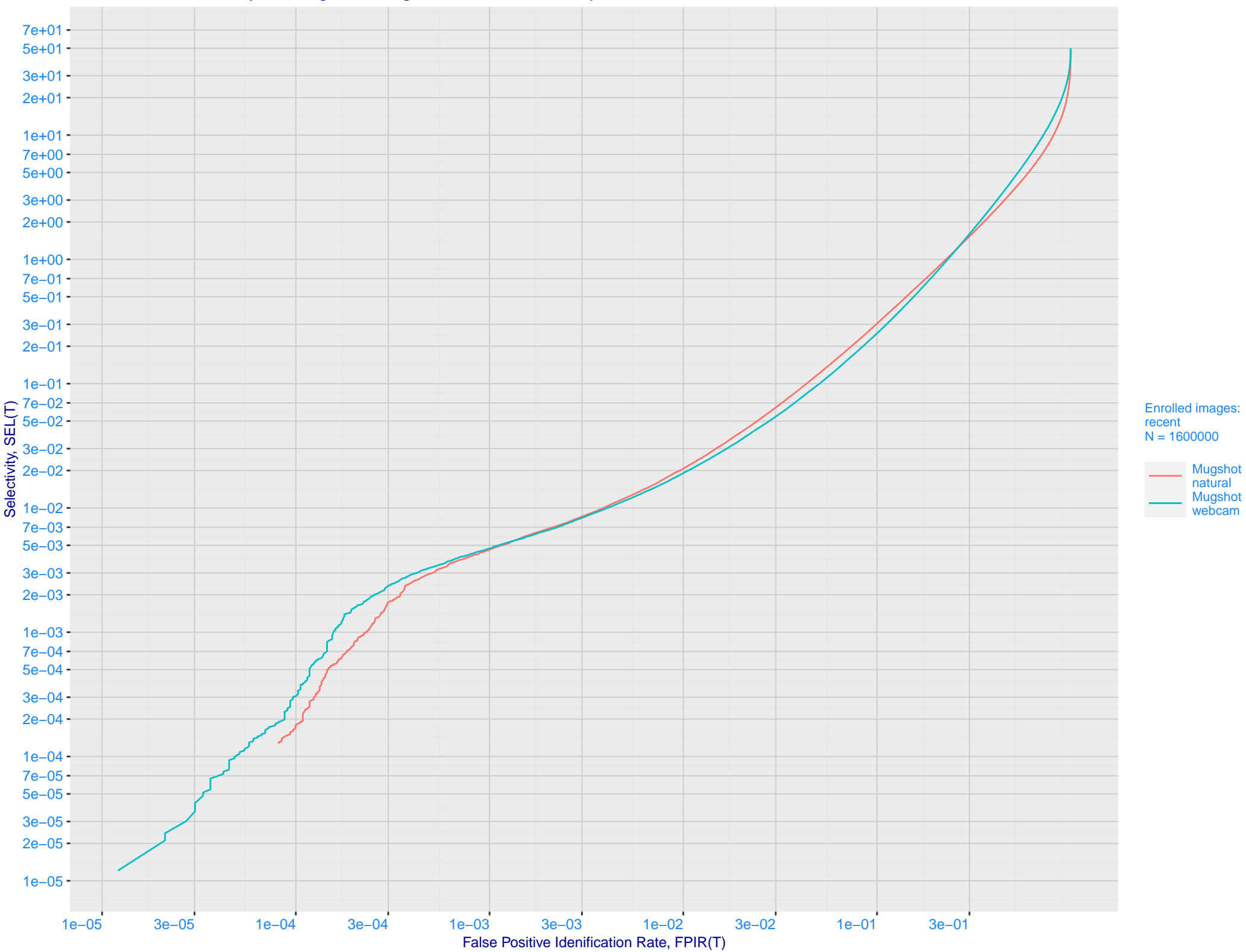**C: Evolution of accuracy for REMARKAI algorithms on three datasets 2018 – present**

X-axis: Date algorithm submitted to FRVT (Jan, Apr)

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

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

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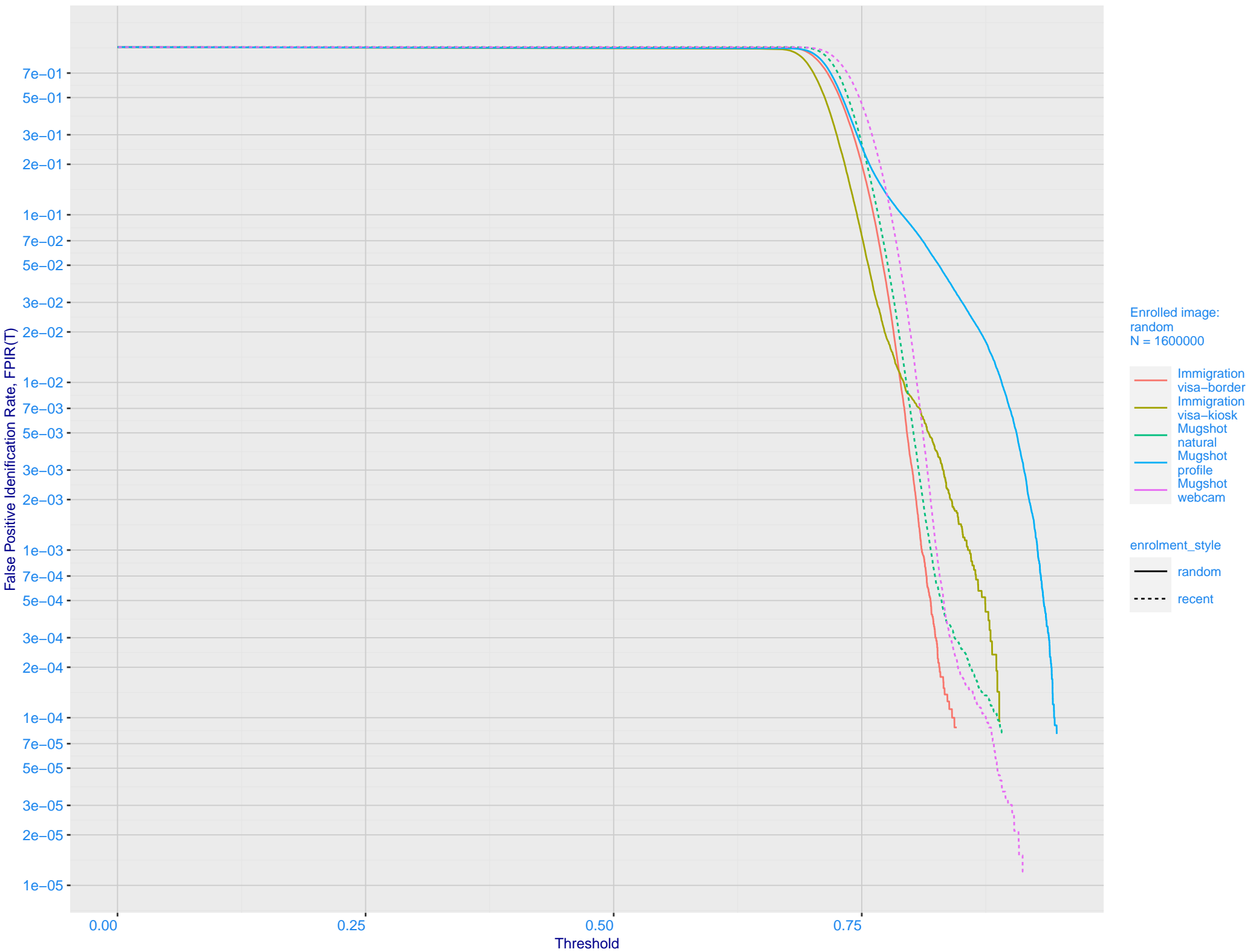
E: Dependence of error rates on T by number enrolled identities, N, for Mugshot natural images
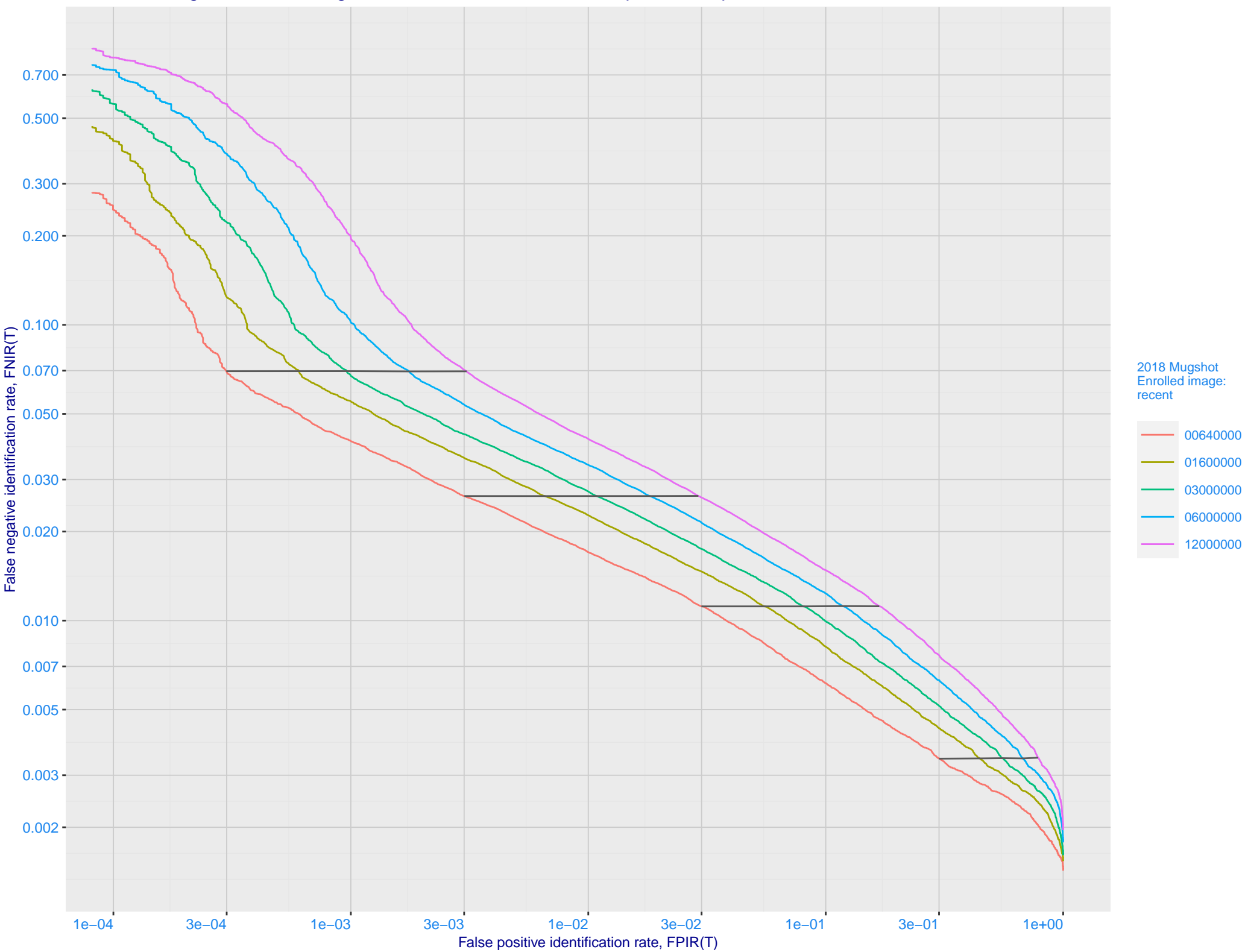
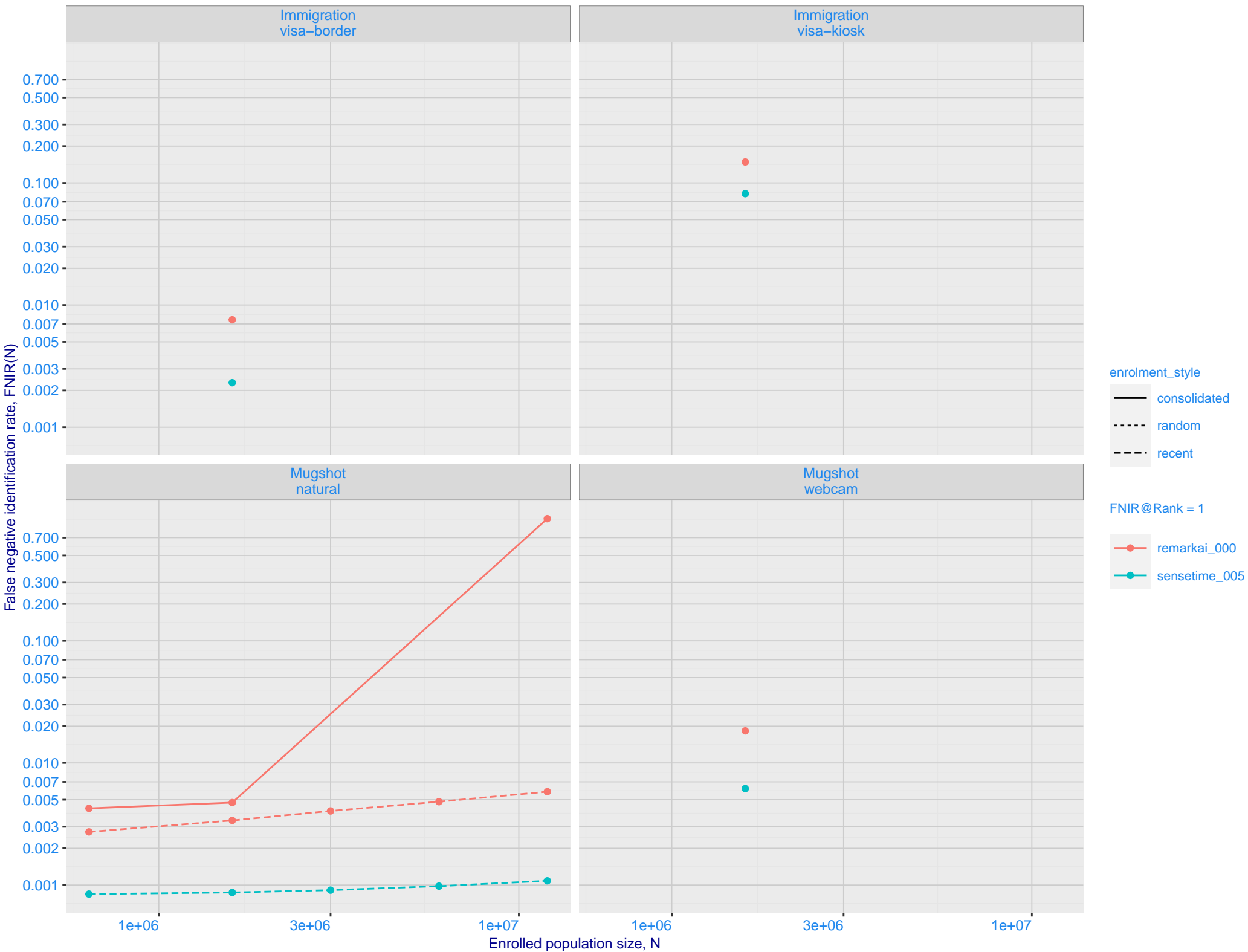F: FPIR vs. Selectivity for mugshot images, N = 1600000 subjects enrolled with one recent mate

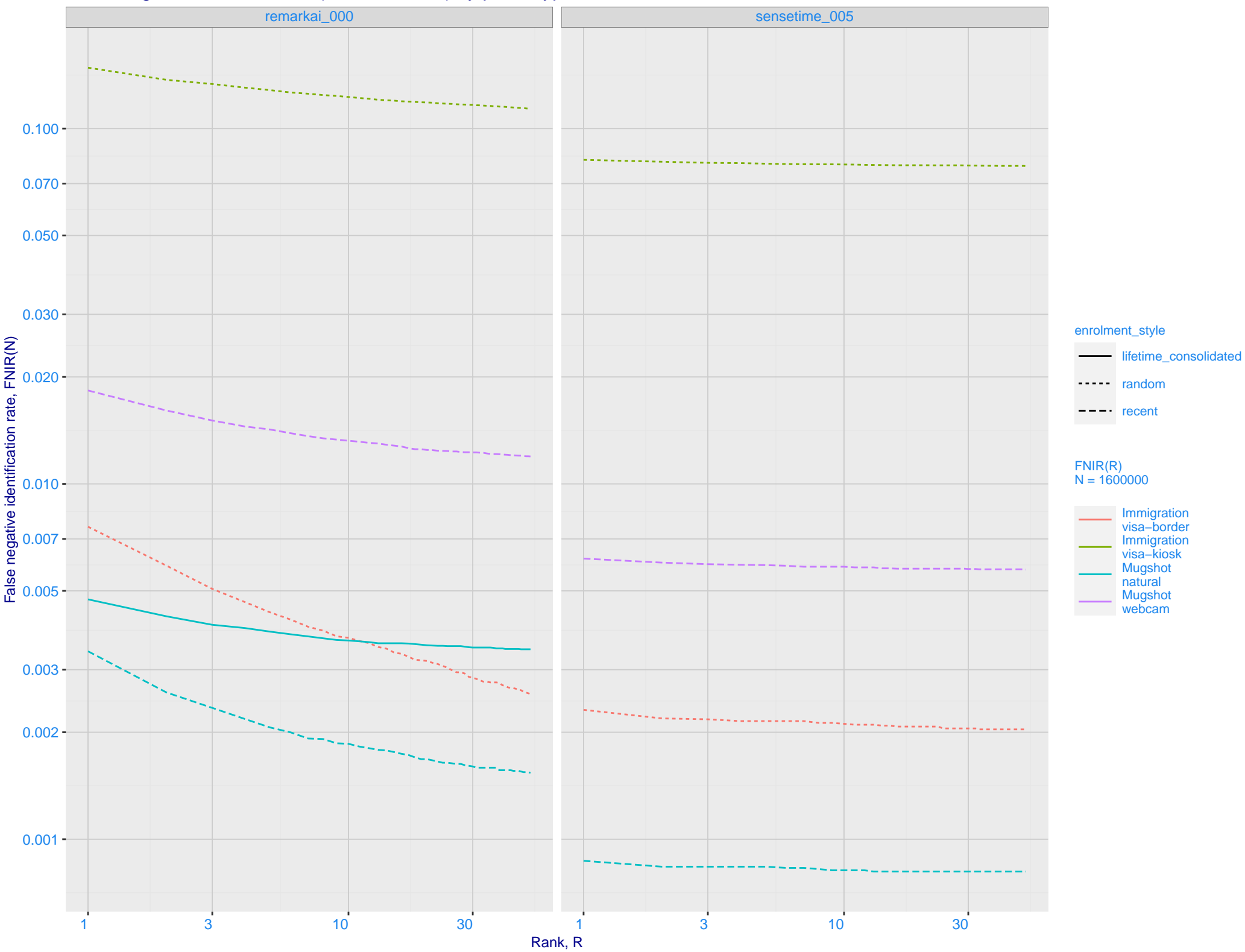G: FPIR dependence on T by probe type for N = 1600000 subjects

H: DET for Mugshot natural images and various N. Links connect points of equal threshold.
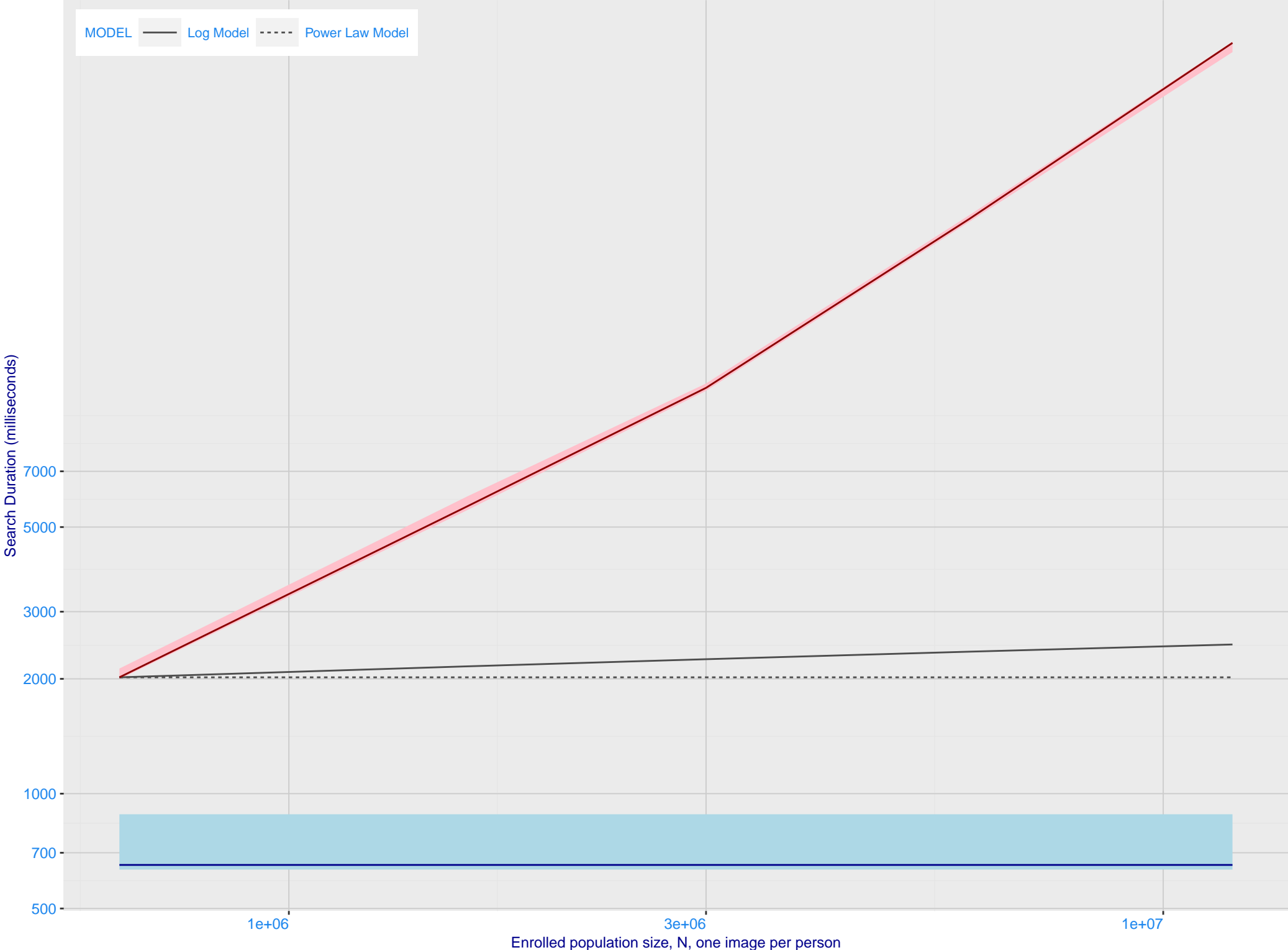
I: Investigational mode: FNIR(N, 1, 0) vs. most accurate (sensetime_005)

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