A: Datasheet

Algorithm: nec_1

Developer: NEC

Submission Date: 2018_06_29

Template size: 2592 bytes

Template time (2.5 percentile): 83 msec

Template time (median): 87 msec

Template time (97.5 percentile): 96 msec

Investigation:

Frontal mugshot ranking 168 (out of 265) –– FNIR(1600000, 0, 1) = 0.0209 vs. lowest 0.0009 from sensetime_005

Mugshot webcam ranking 150 (out of 227) –– FNIR(1600000, 0, 1) = 0.0560 vs. lowest 0.0062 from sensetime_005

Mugshot profile ranking 165 (out of 196) –– FNIR(1600000, 0, 1) = 0.9670 vs. lowest 0.0591 from sensetime_005

Immigration visa–border ranking 85 (out of 148) –– FNIR(1600000, 0, 1) = 0.0325 vs. lowest 0.0013 from visionlabs_010

Immigration visa–kiosk ranking 92 (out of 145) –– FNIR(1600000, 0, 1) = 0.2767 vs. lowest 0.0568 from hr_000

Identification:

Frontal mugshot ranking 138 (out of 265) –– FNIR(1600000, T, L+1) = 0.1055, FPIR=0.001000 vs. lowest 0.0018 from sensetime_004
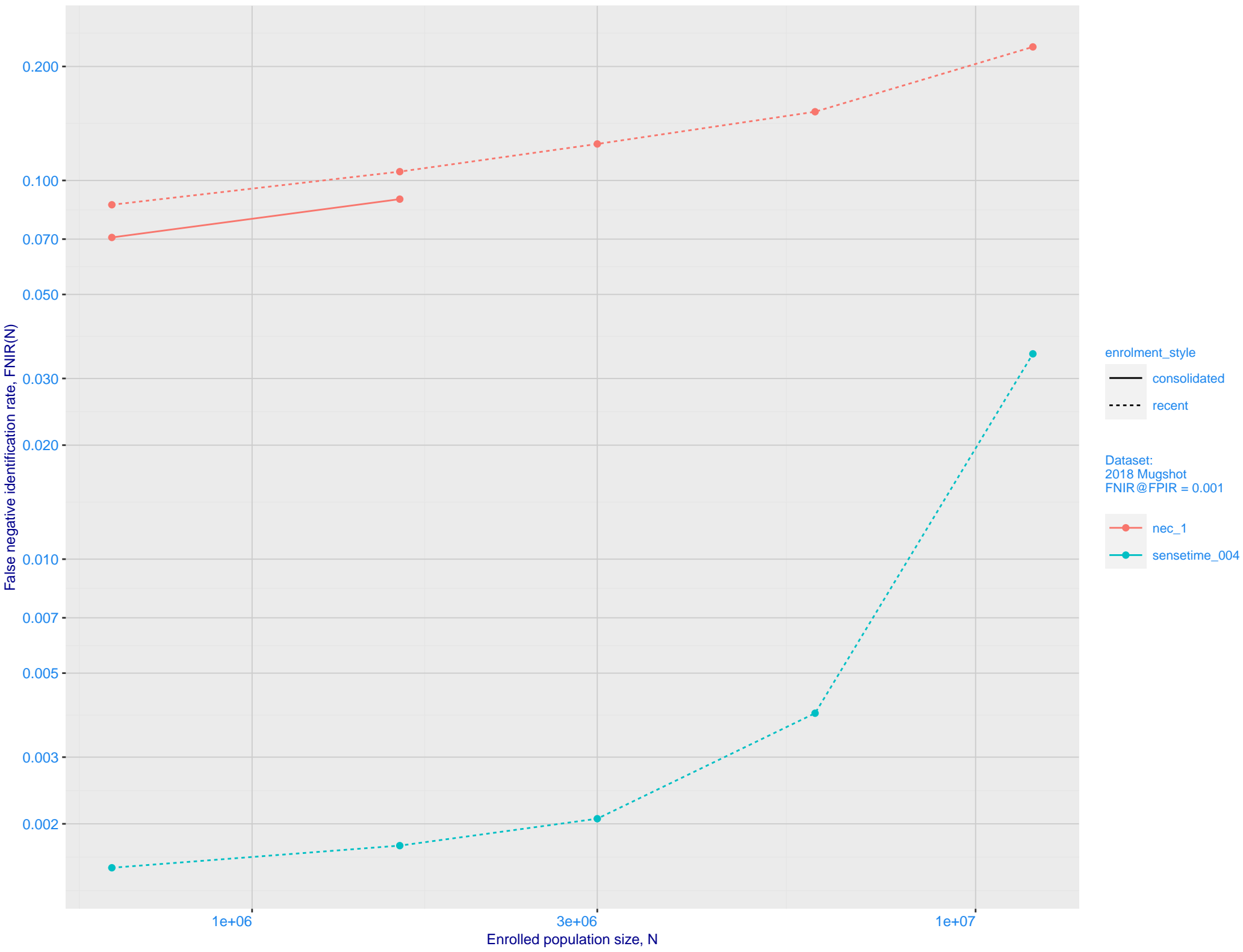
Mugshot webcam ranking 128 (out of 225) –– FNIR(1600000, T, L+1) = 0.1971, FPIR=0.001000 vs. lowest 0.0122 from sensetime_003

Mugshot profile ranking 72 (out of 195) –– FNIR(1600000, T, L+1) = 0.9860, FPIR=0.001000 vs. lowest 0.1331 from hr_000
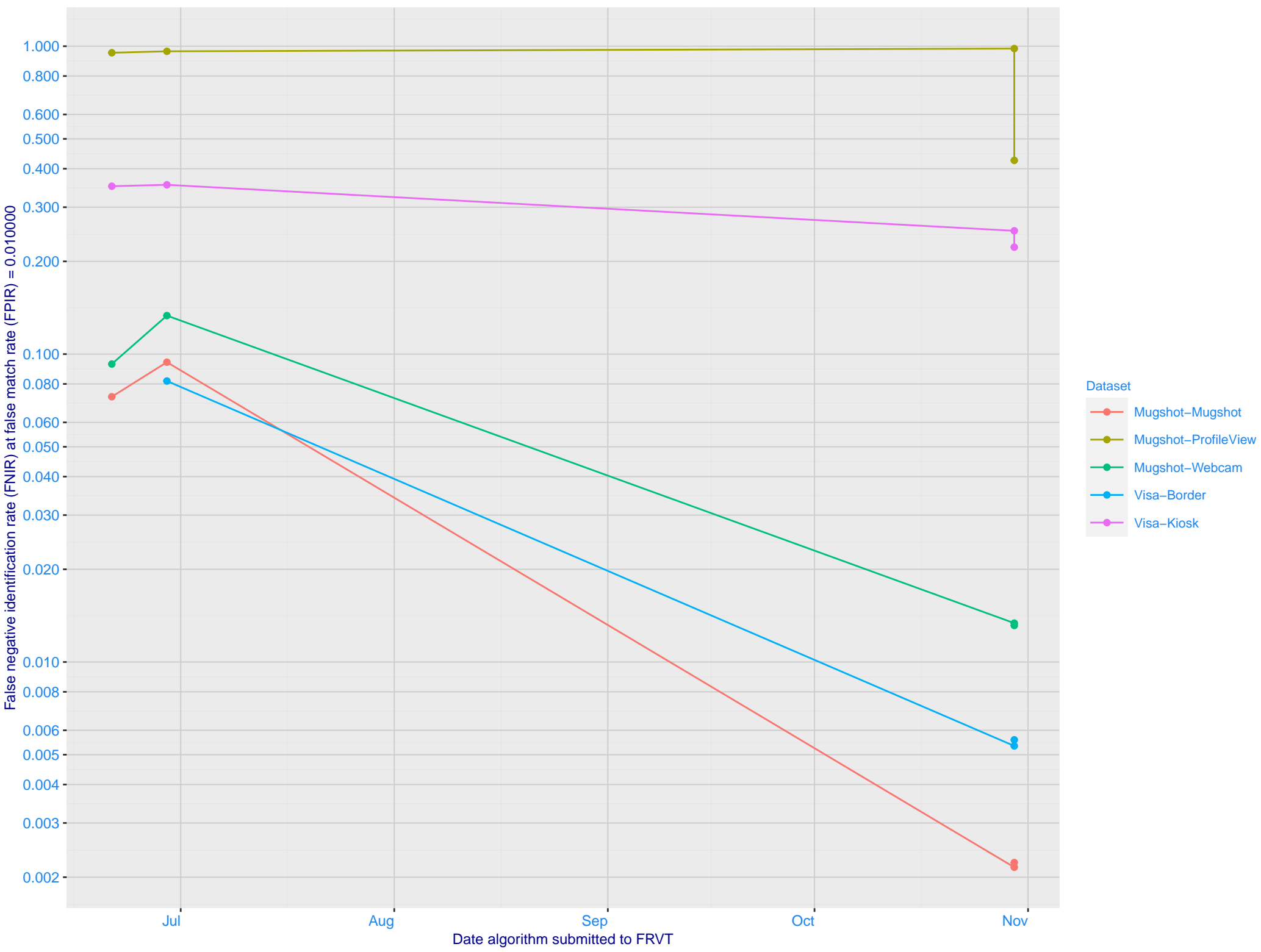
Immigration visa–border ranking 74 (out of 146) –– FNIR(1600000, T, L+1) = 0.1335, FPIR=0.001000 vs. lowest 0.0049 from hr_000

Immigration visa–kiosk ranking 60 (out of 141) –– FNIR(1600000, T, L+1) = 0.4685, FPIR=0.001000 vs. lowest 0.0996 from hr_000
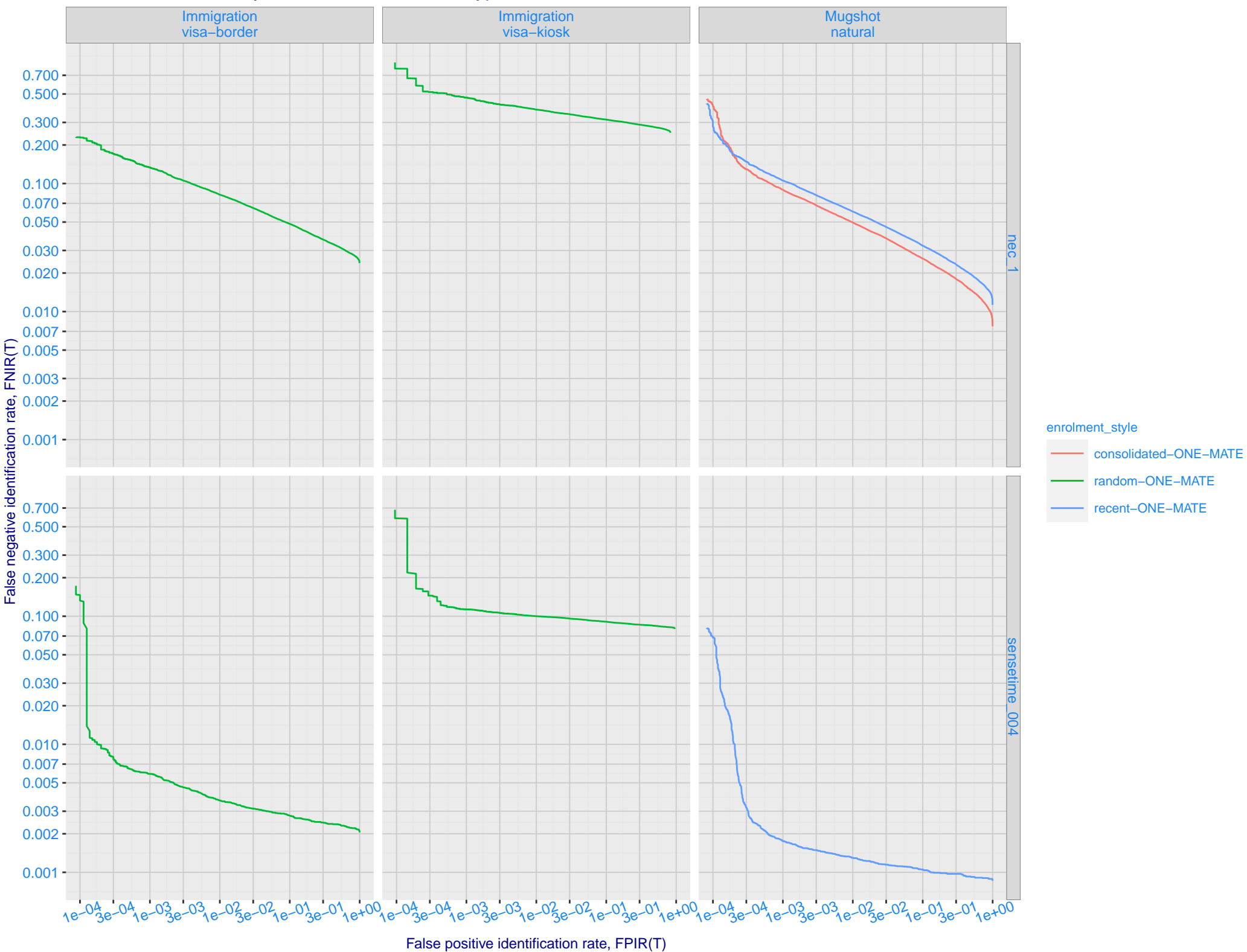
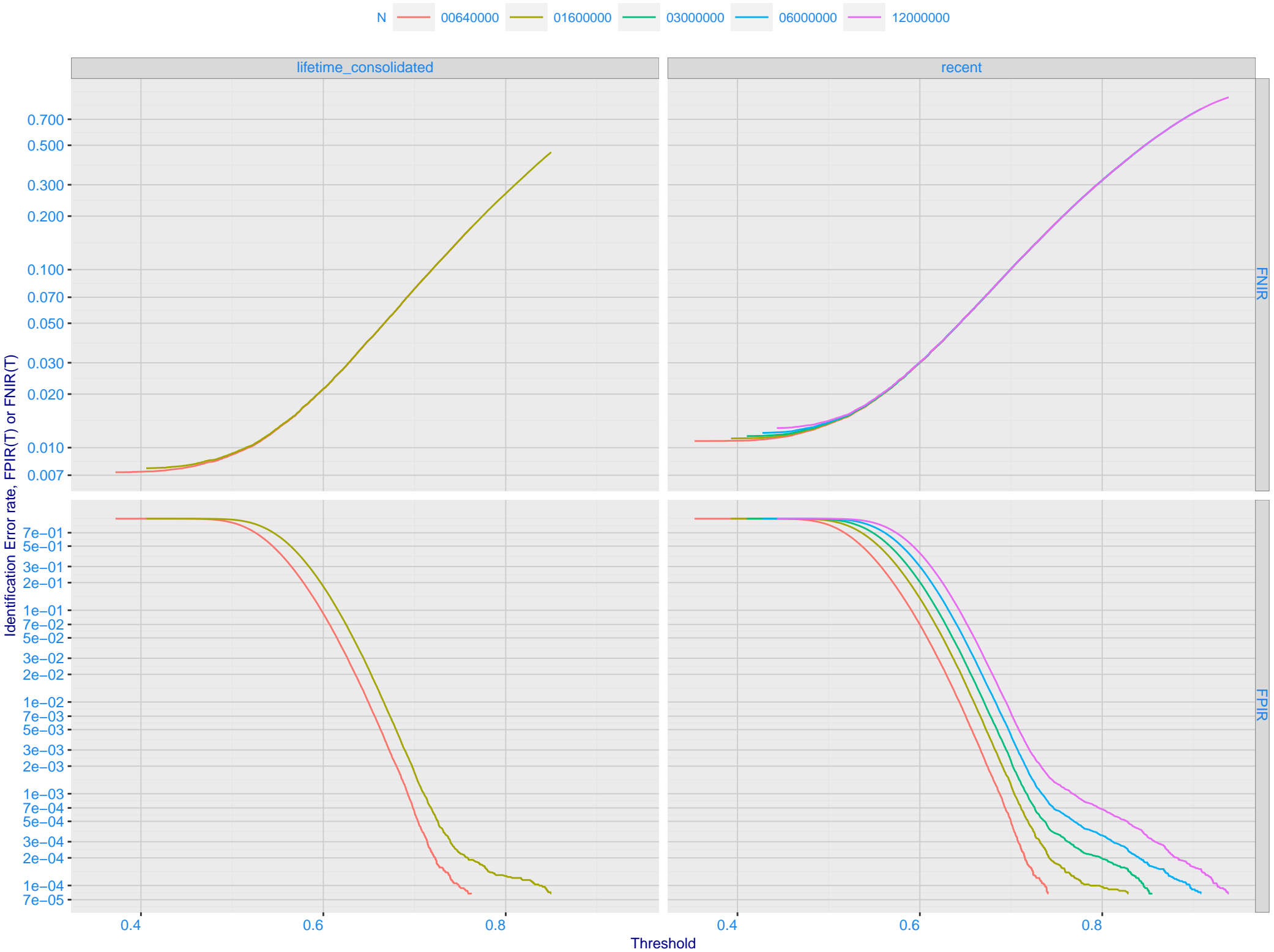B: Mugshot natural images, identification mode: FNIR(N, L+1, T) vs. most accurate (sensetime_004)

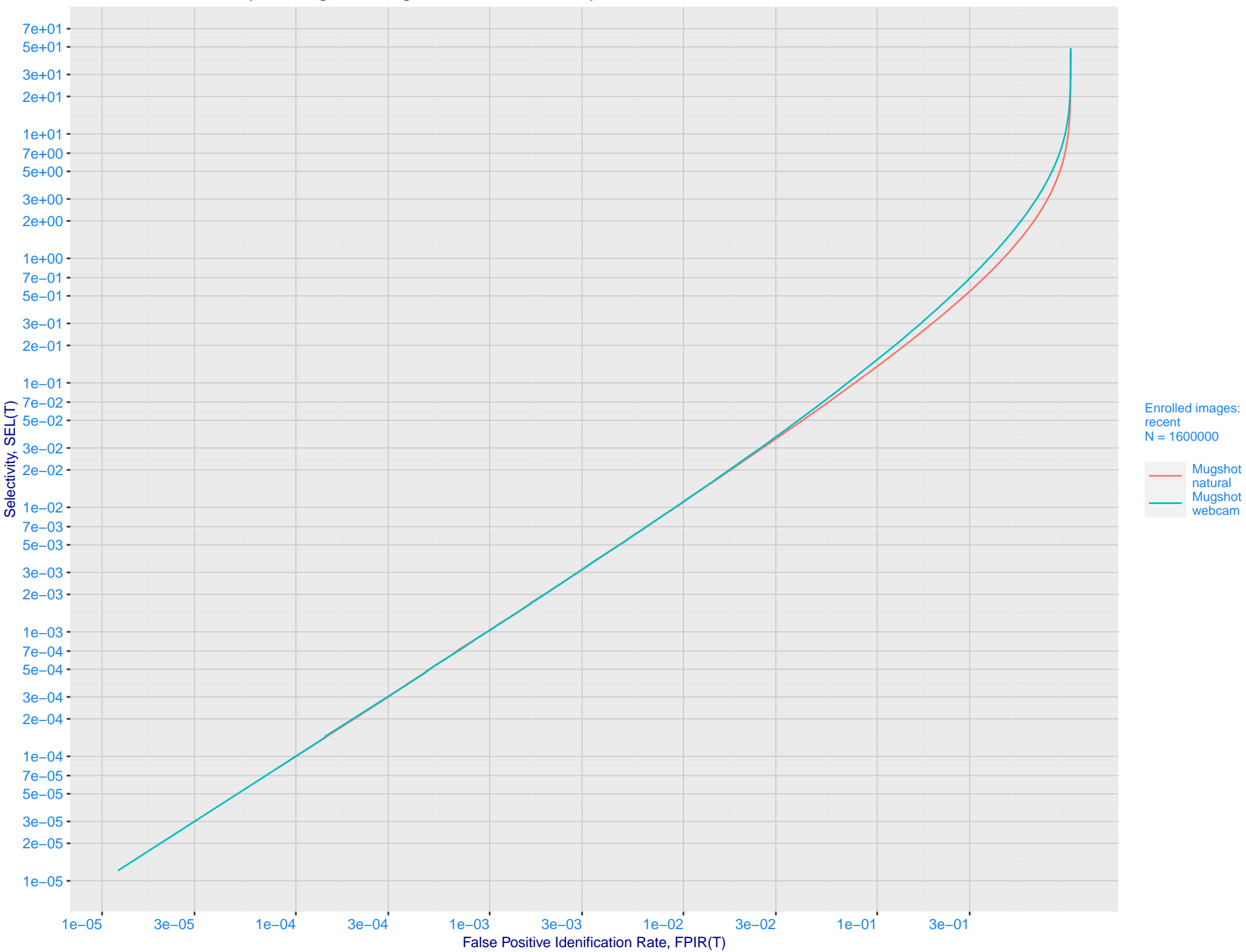**C: Evolution of accuracy for NEC algorithms on three datasets 2018 – present**

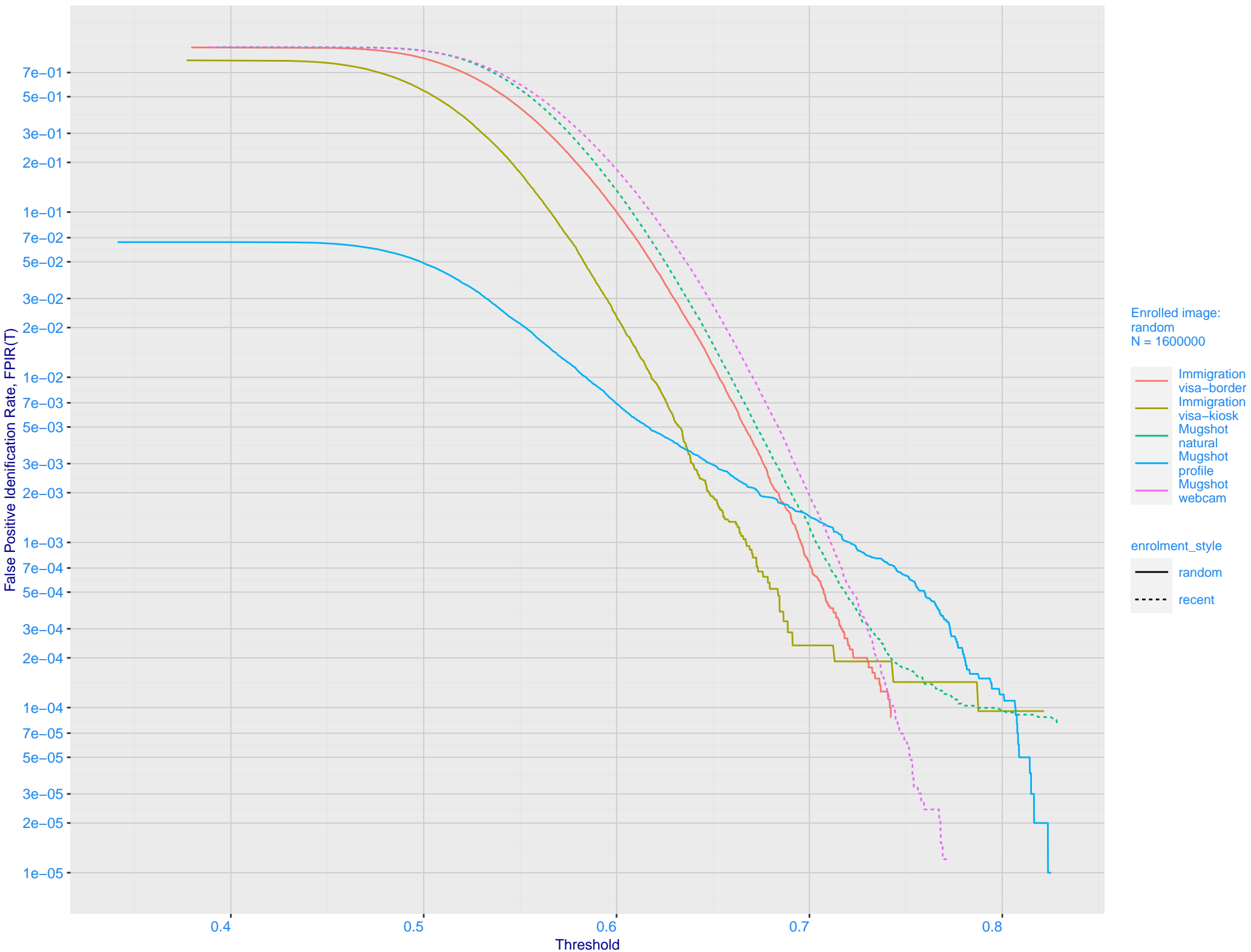D: 1:N error tradeoff by dataset and enrollment type. N = 1600000 individuals

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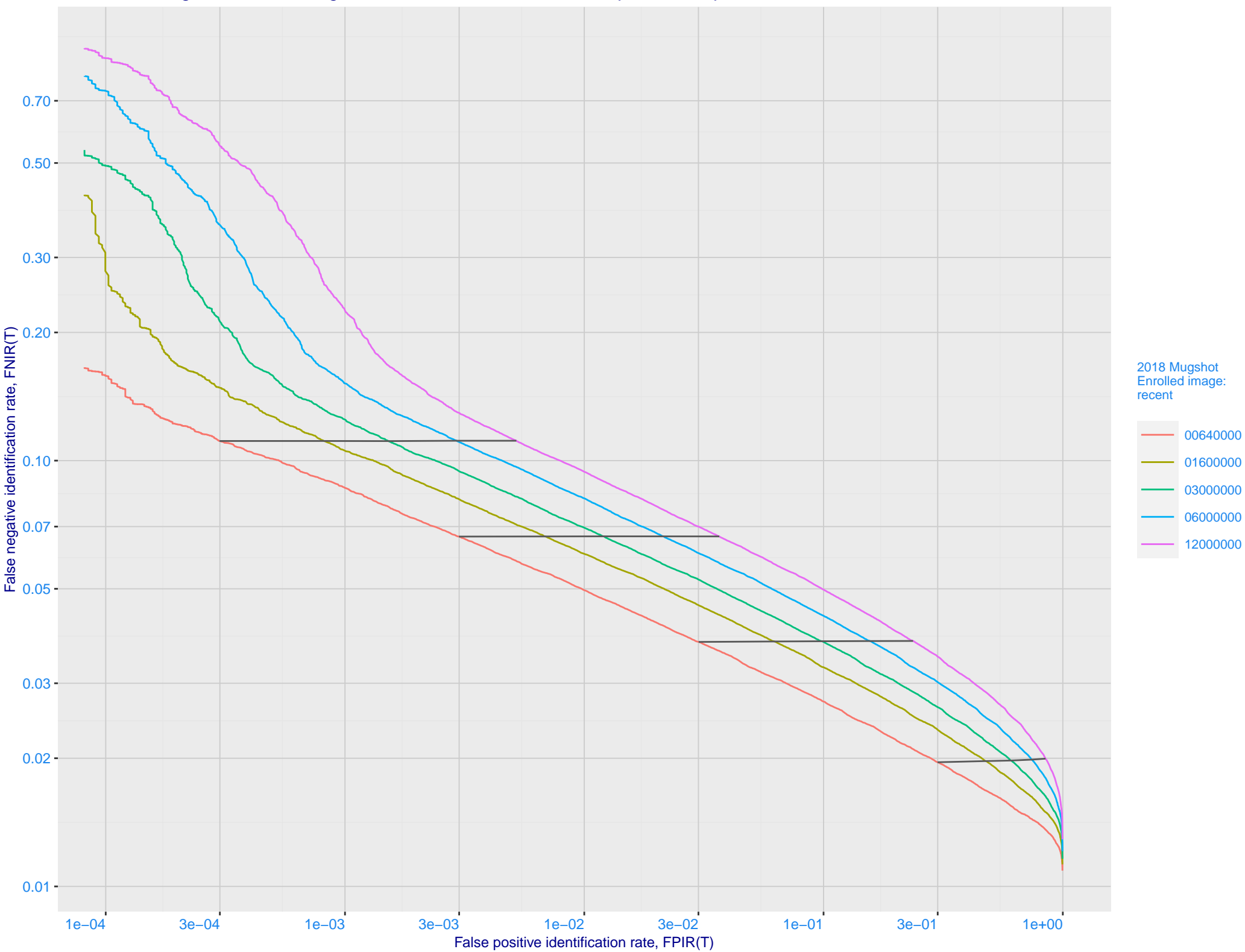
F: FPIR vs. Selectivity for mugshot images, N = 1600000 subjects enrolled with one recent mate
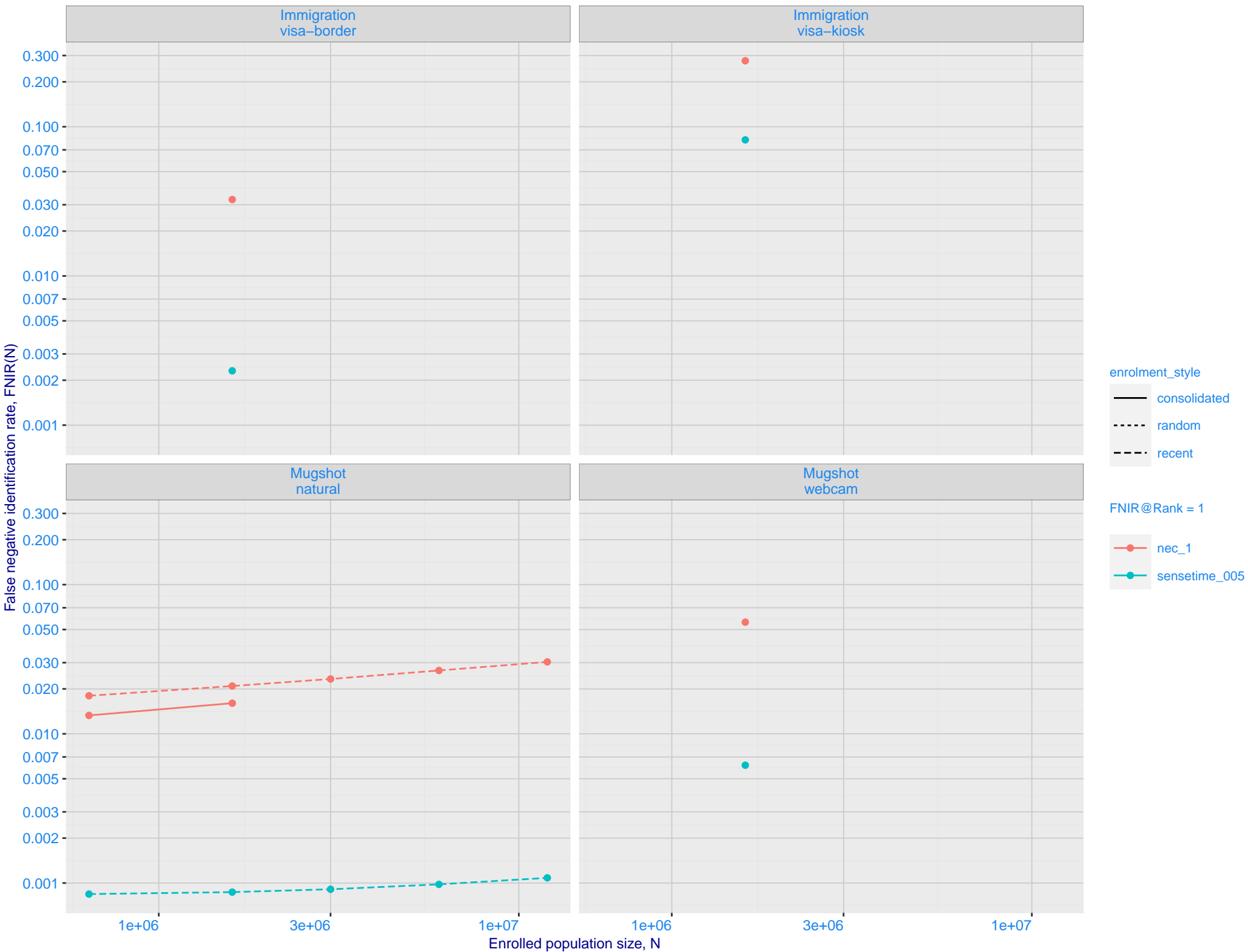
G: FPIR dependence on T by probe type for N = 1600000 subjects

Enrolled image:
random
N = 1600000

Immigration
visa–border
Immigration
visa–kiosk
Mugshot
natural
Mugshot
profile
Mugshot
webcam

enrolment_style
—— random
------ recent

Threshold

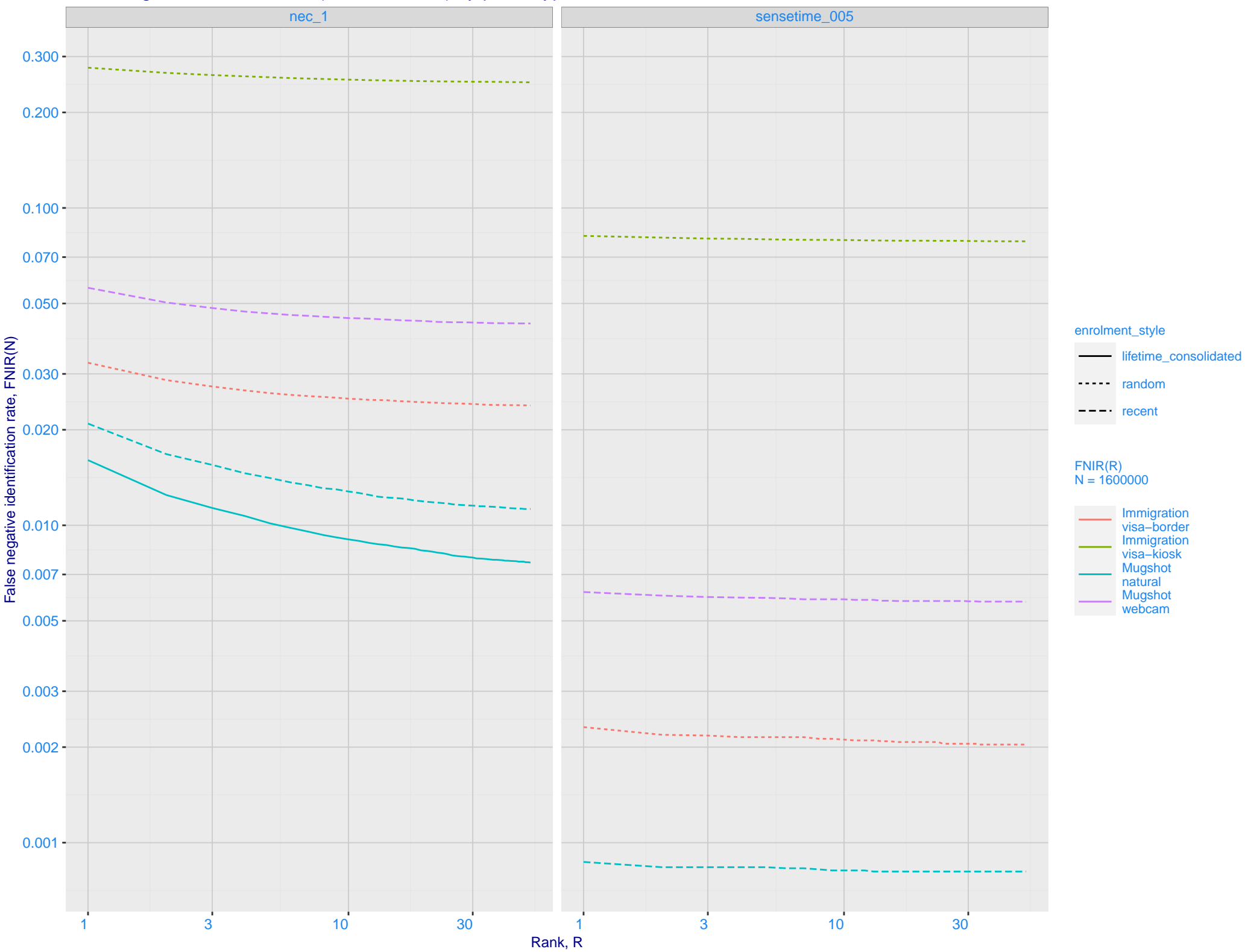False Positive Idenification Rate, FPIR(T)

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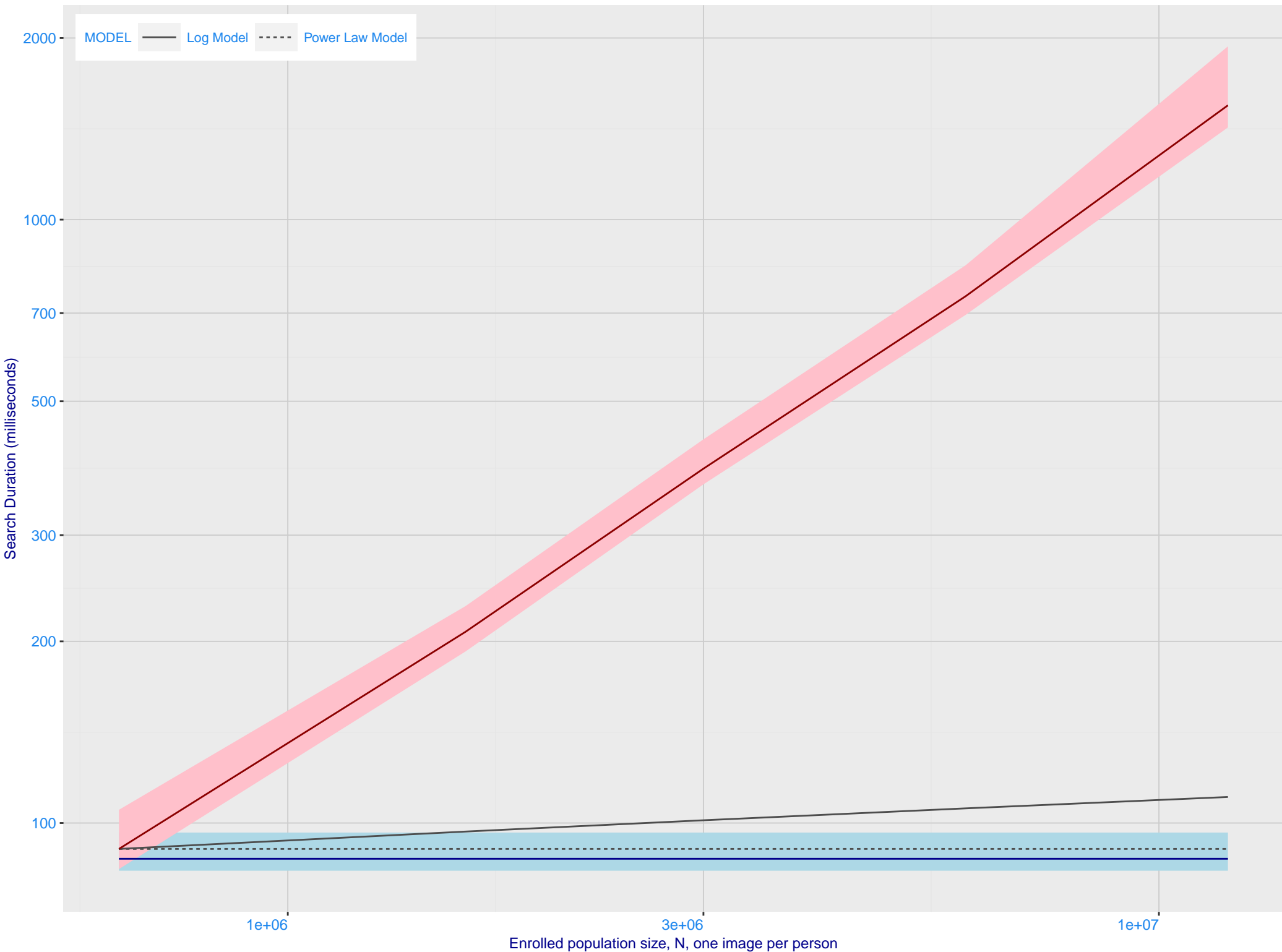
I: Investigational mode: FNIR(N, 1, 0) vs. most accurate (sensetime_005)

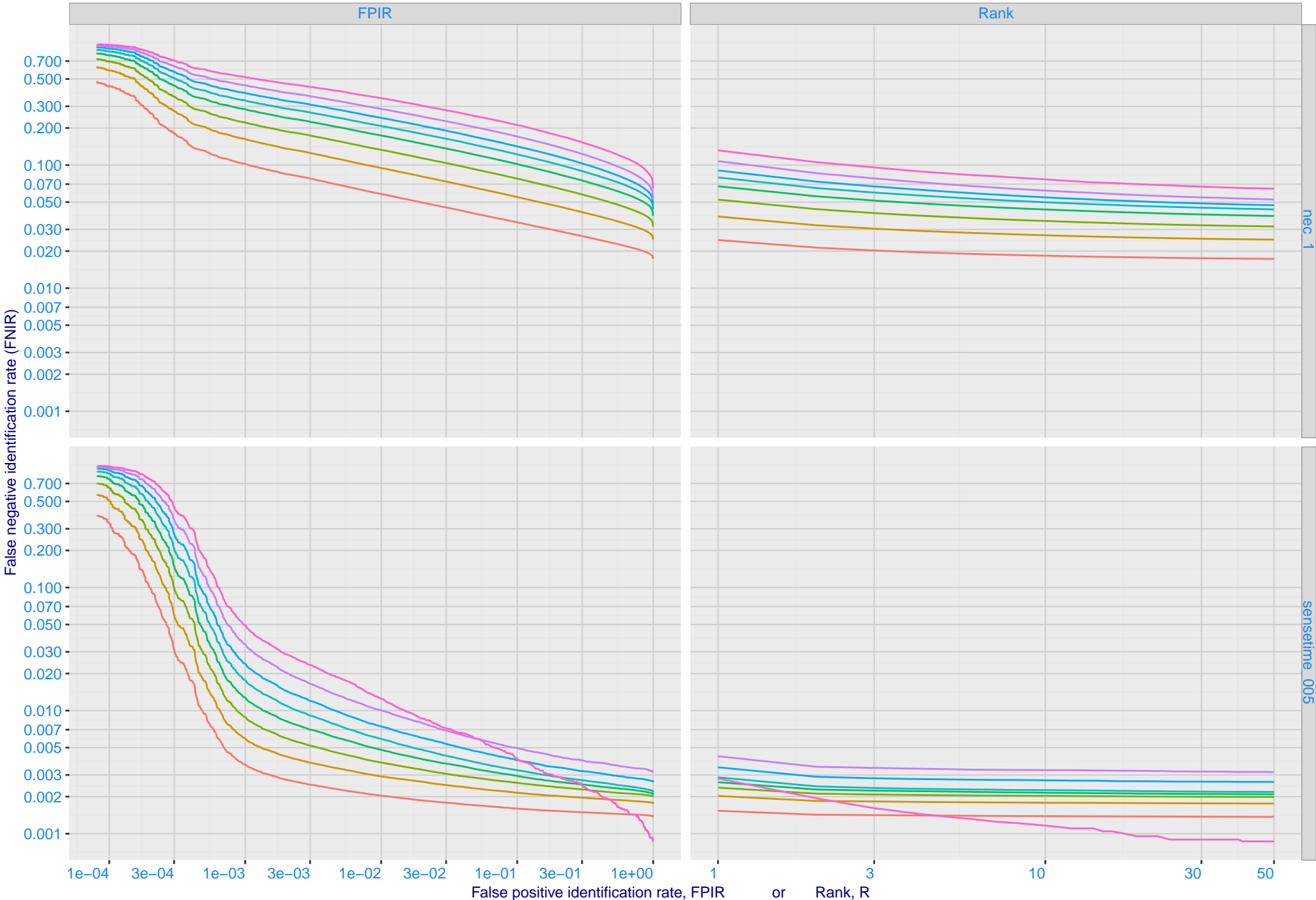J: Investigational mode: FNIR(1600000, R, 0) by probe type

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

N: Decline of genuine scores with ageing