A: Datasheet

Algorithm: idemia_5

Developer: Idemia

Submission Date: 2018_10_29

Template size: 352 bytes

Template time (2.5 percentile): 359 msec

Template time (median): 371 msec

Template time (97.5 percentile): 405 msec

Investigation:

Frontal mugshot ranking 122 (out of 279) –– FNIR(1600000, 0, 1) = 0.0081 vs. lowest 0.0009 from sensetime_005

Mugshot webcam ranking 143 (out of 241) –– FNIR(1600000, 0, 1) = 0.0392 vs. lowest 0.0062 from sensetime_005

Mugshot profile ranking 158 (out of 210) –– FNIR(1600000, 0, 1) = 0.9538 vs. lowest 0.0587 from xforwardai_002

Immigration visa–border ranking 91 (out of 168) –– FNIR(1600000, 0, 1) = 0.0214 vs. lowest 0.0013 from visionlabs_010

Immigration visa–kiosk ranking 100 (out of 165) –– FNIR(1600000, 0, 1) = 0.2172 vs. lowest 0.0568 from cloudwalk_hr_000

Identification:

Frontal mugshot ranking 80 (out of 279) –– FNIR(1600000, T, L+1) = 0.0439, FPIR=0.001000 vs. lowest 0.0018 from sensetime_004
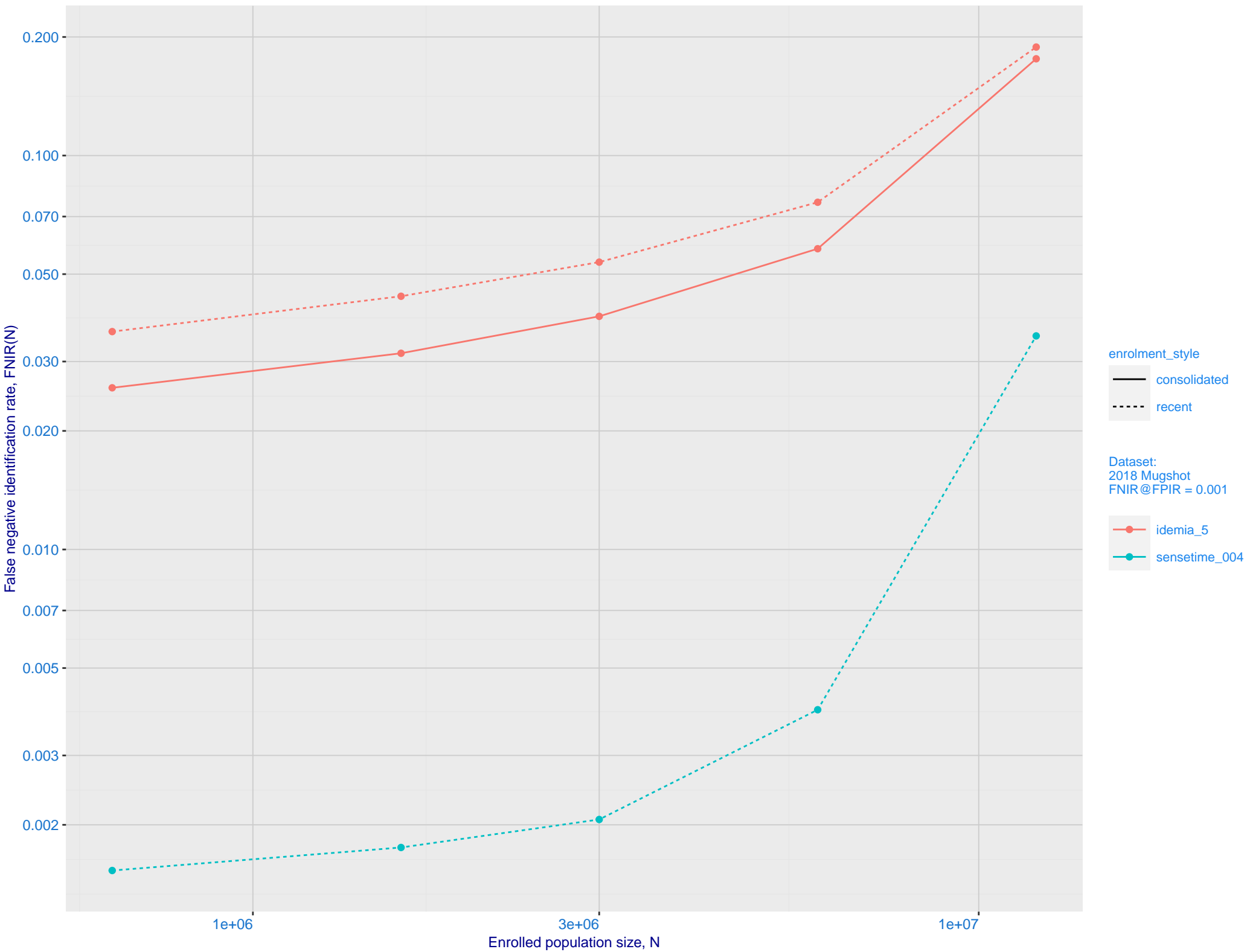
Mugshot webcam ranking 114 (out of 236) –– FNIR(1600000, T, L+1) = 0.1498, FPIR=0.001000 vs. lowest 0.0122 from sensetime_003

Mugshot profile ranking 60 (out of 209) –– FNIR(1600000, T, L+1) = 0.9775, FPIR=0.001000 vs. lowest 0.1331 from cloudwalk_hr_000
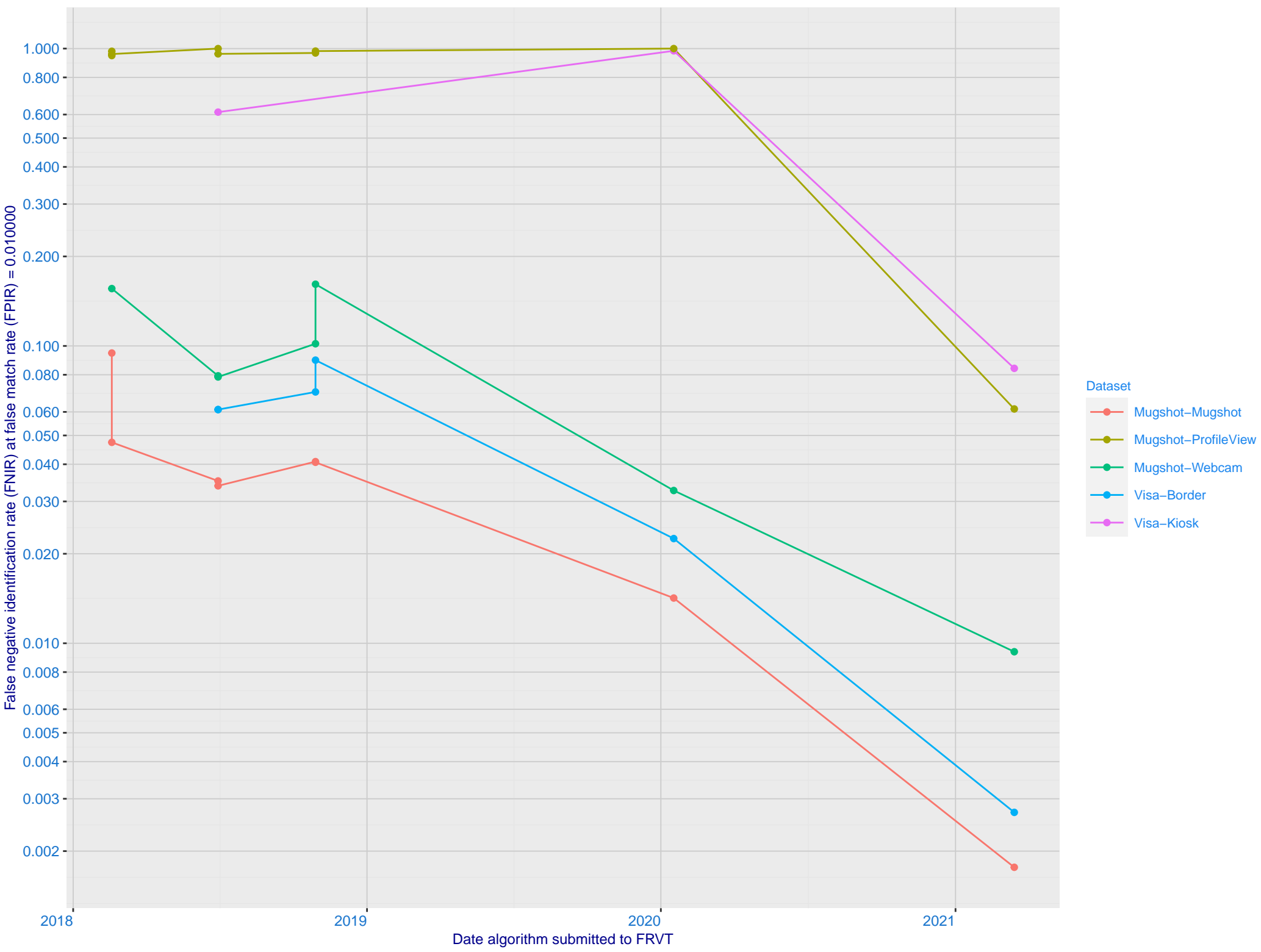
Immigration visa–border ranking 86 (out of 167) –– FNIR(1600000, T, L+1) = 0.1302, FPIR=0.001000 vs. lowest 0.0047 from idemia_008

Immigration visa–kiosk ranking 112 (out of 162) –– FNIR(1600000, T, L+1) = 0.8801, FPIR=0.001000 vs. lowest 0.0996 from cloudwalk_hr_000
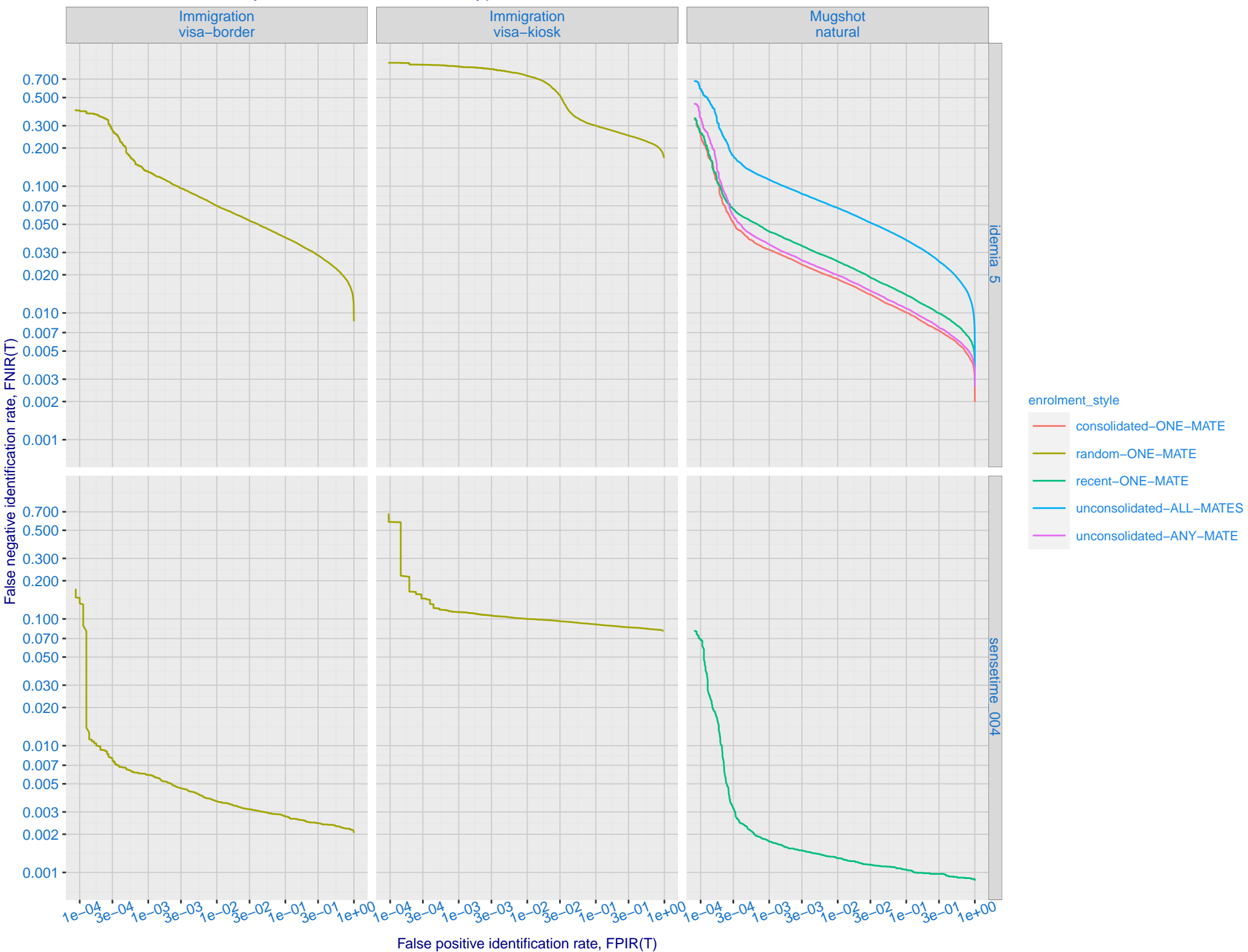
B: Mugshot natural images, identification mode: FNIR(N, L+1, T) vs. most accurate (sensetime_004)
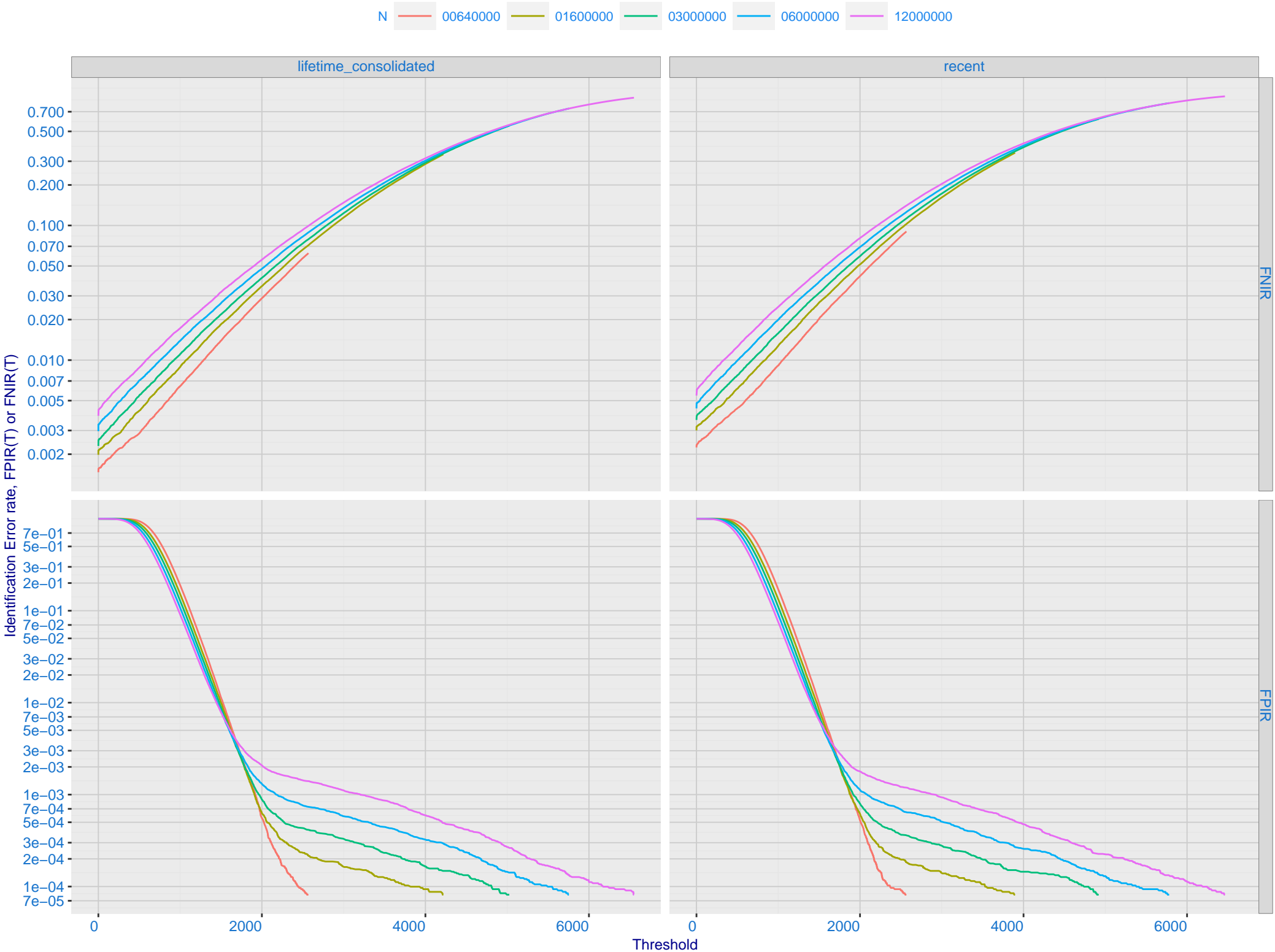
C: Evolution of accuracy for IDEMIA algorithms on three datasets 2018 – present
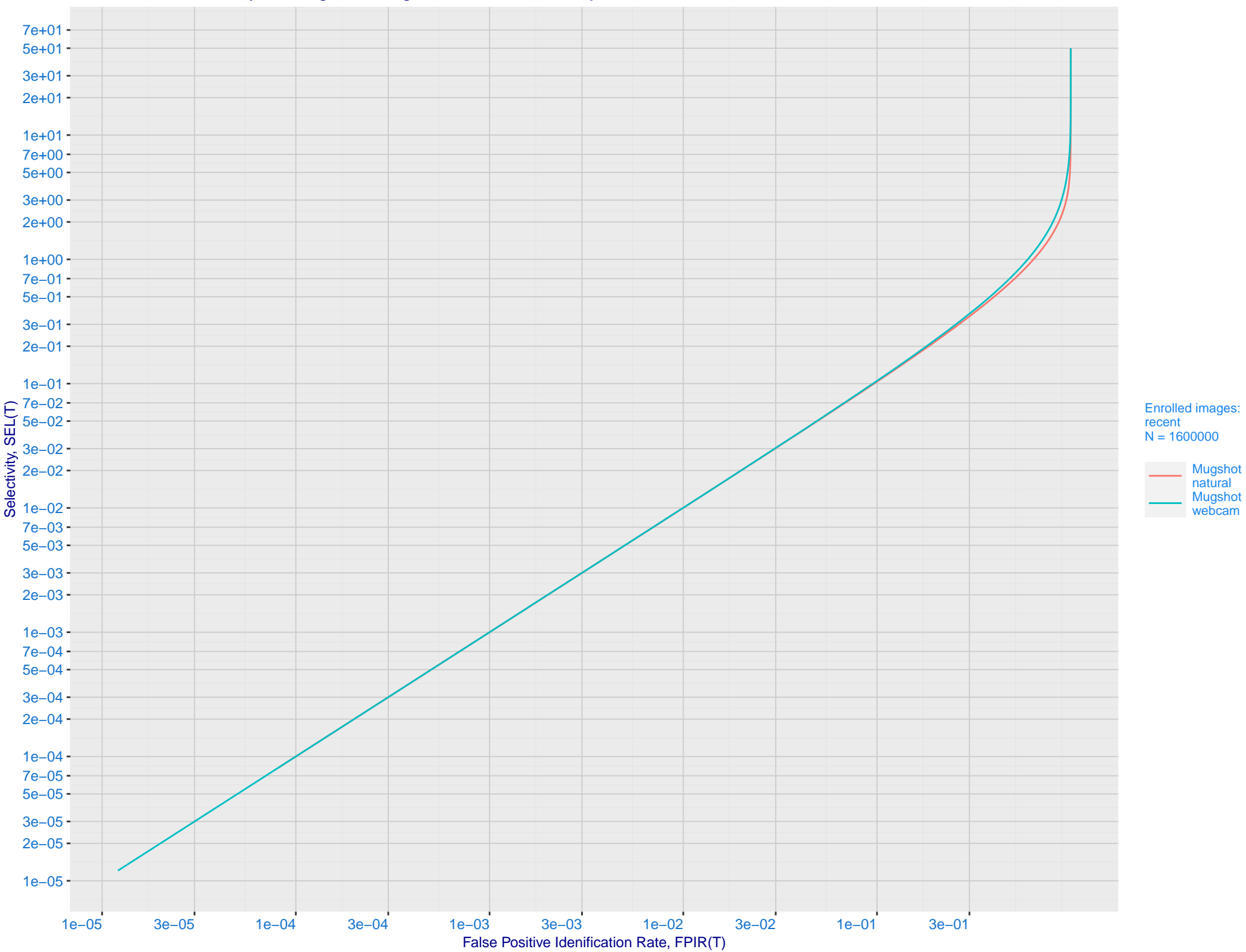
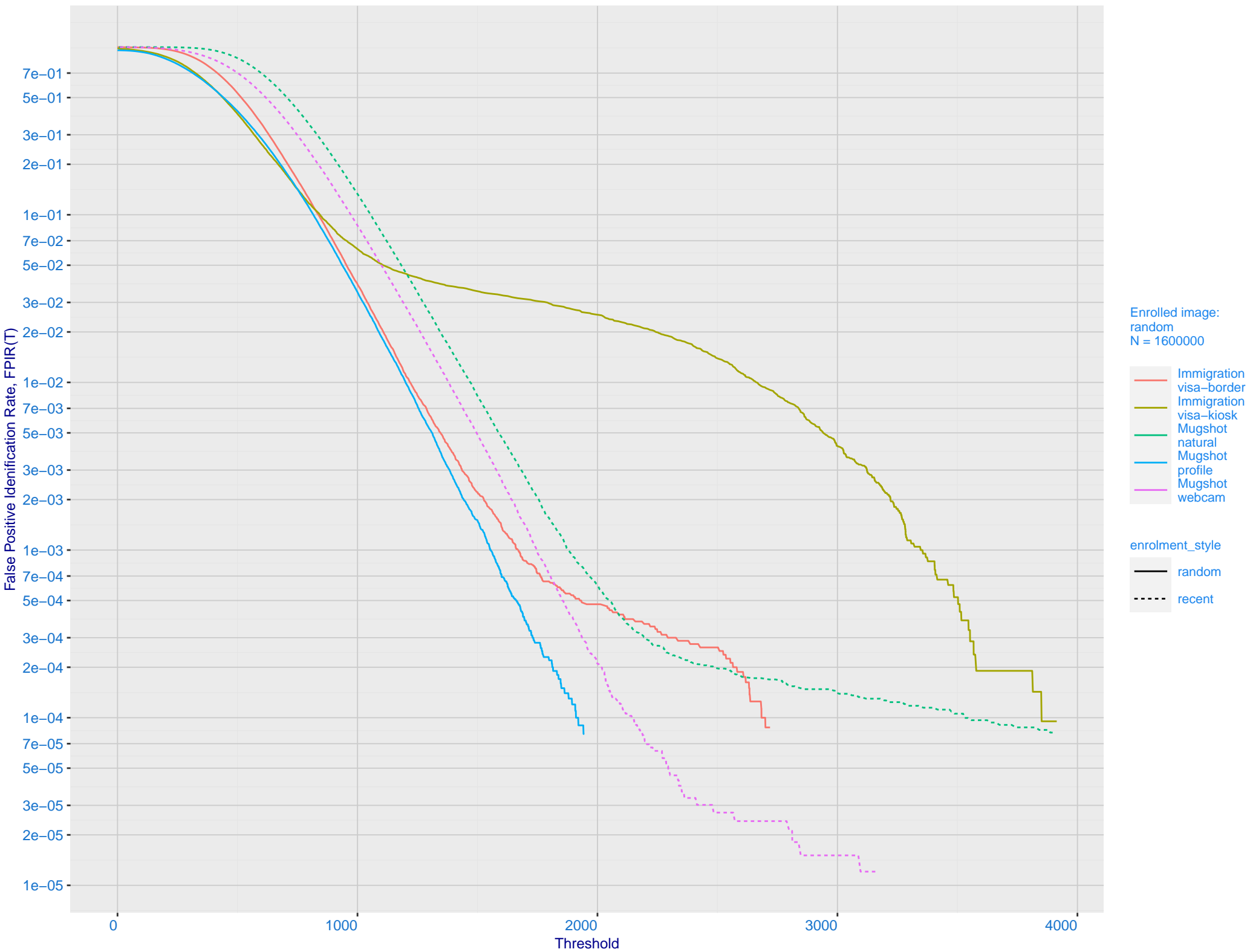D: 1:N error tradeoff by dataset and enrollment type. N = 1600000 individuals

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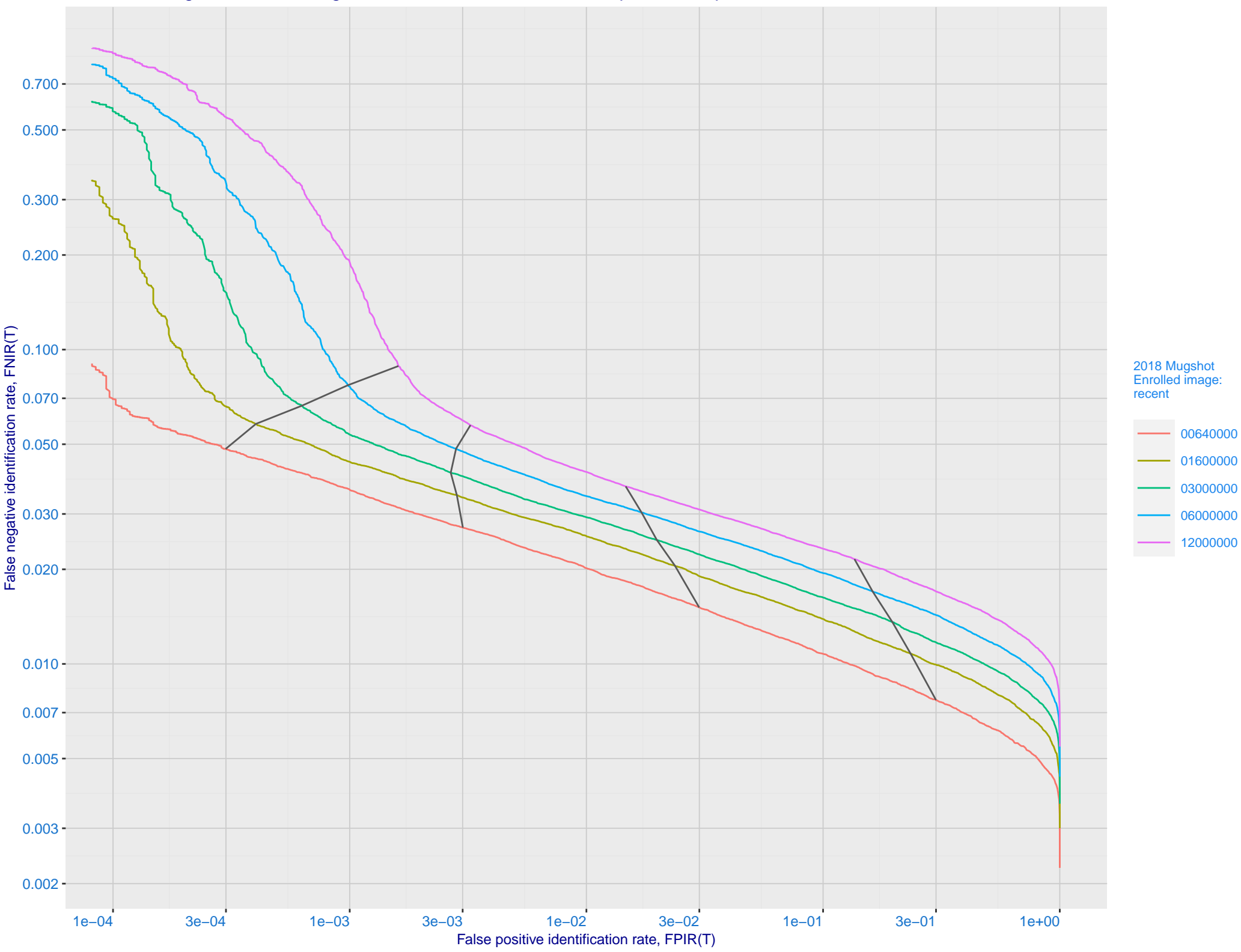
F: FPIR vs. Selectivity for mugshot images, N = 1600000 subjects enrolled with one recent mate

Selectivity, SEL(T)

False Positive Idenification Rate, FPIR(T)

Enrolled images:
recent
N = 1600000

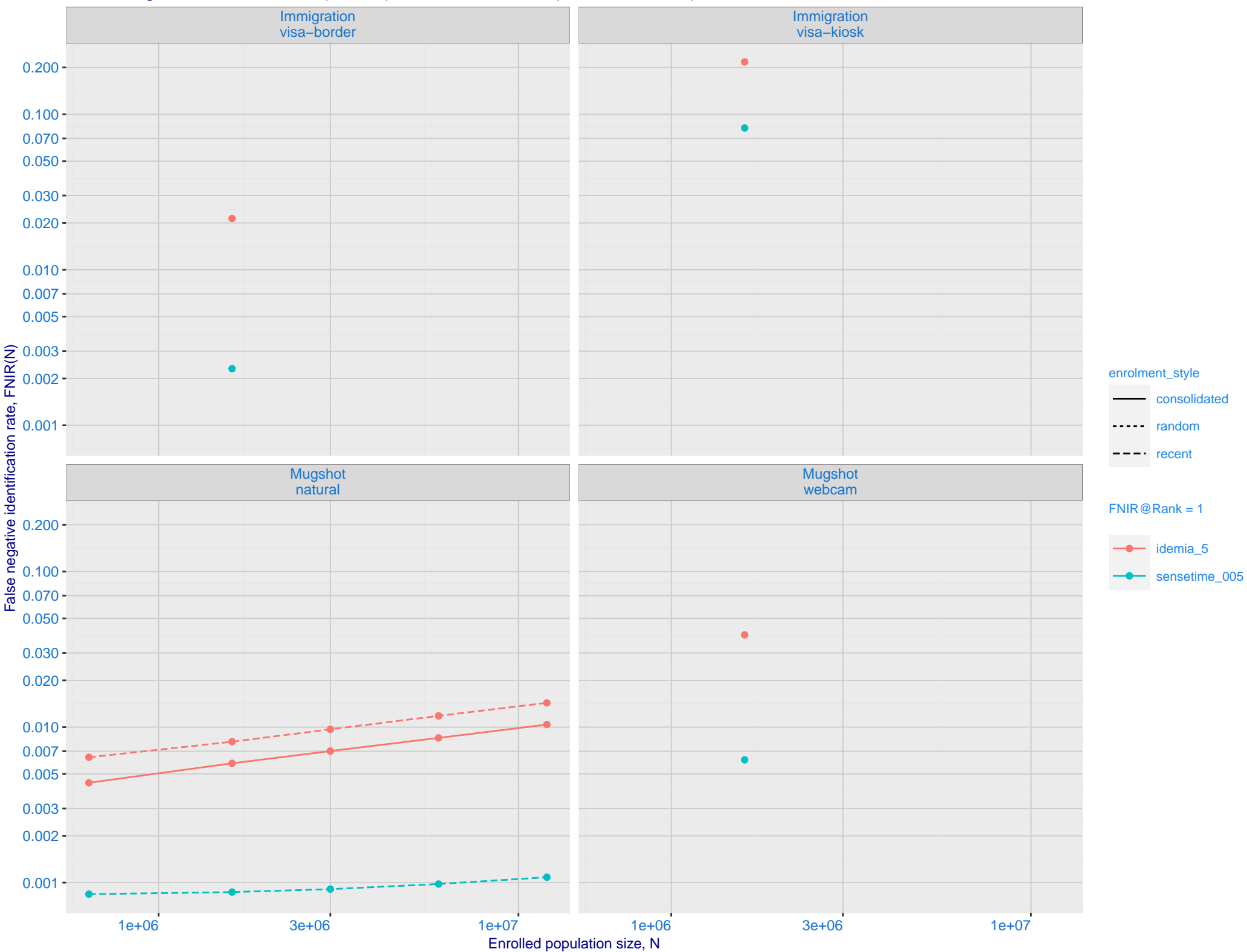Mugshot
natural
Mugshot
webcam

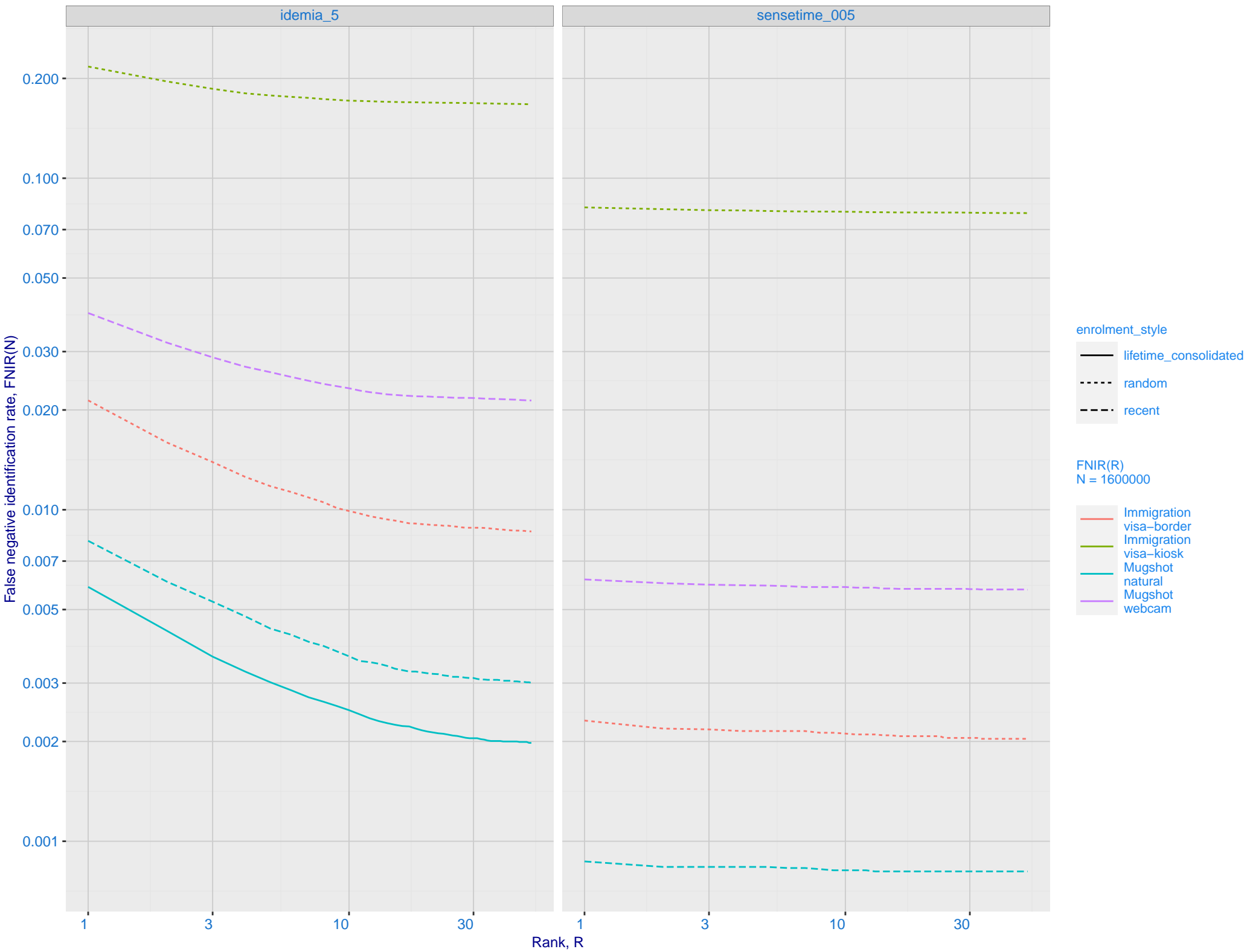G: FPIR dependence on T by probe type for N = 1600000 subjects

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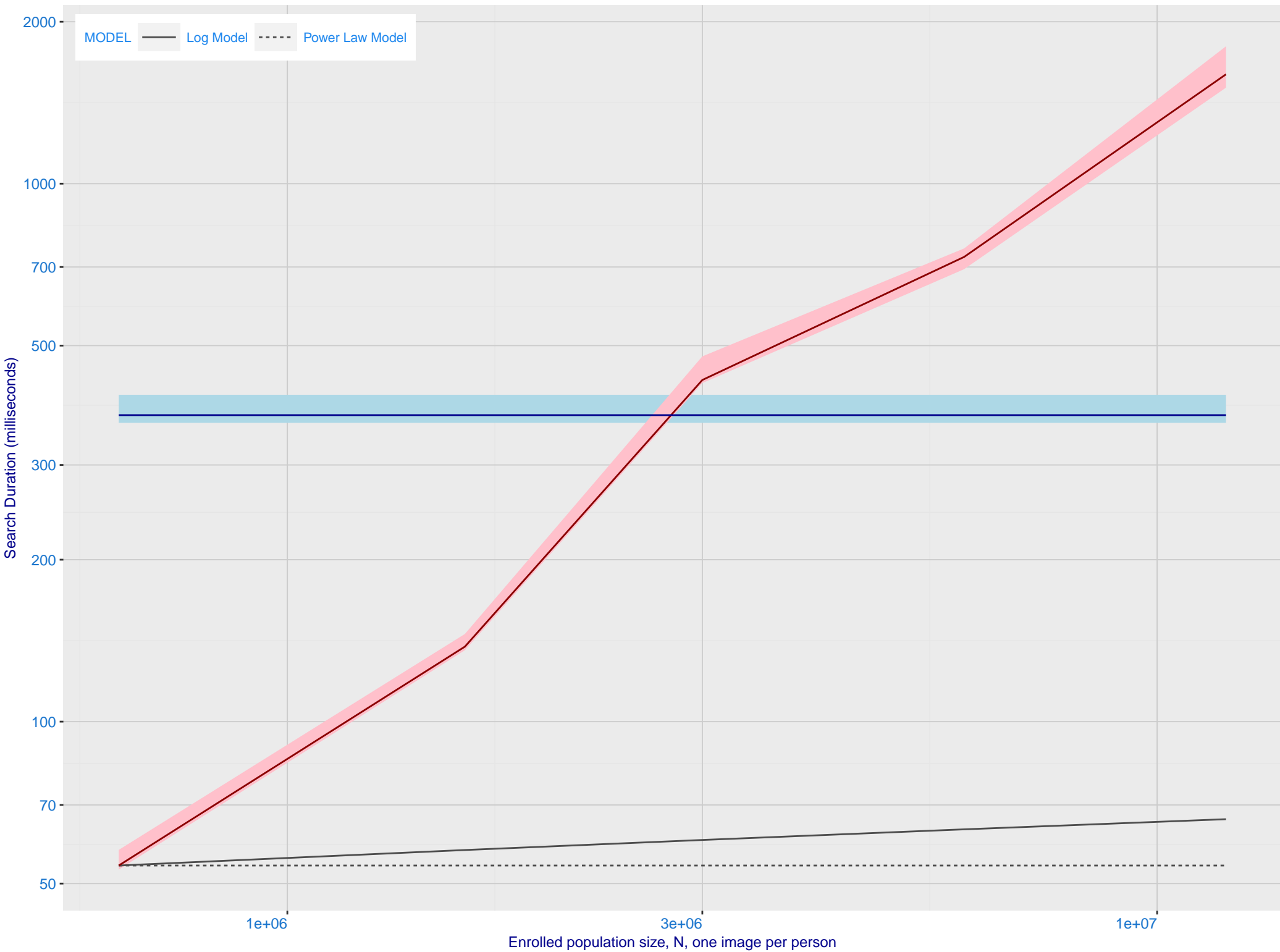
K: Investigational mode: FNIR(N, 1, 0) vs. most accurate (sensetime_005)

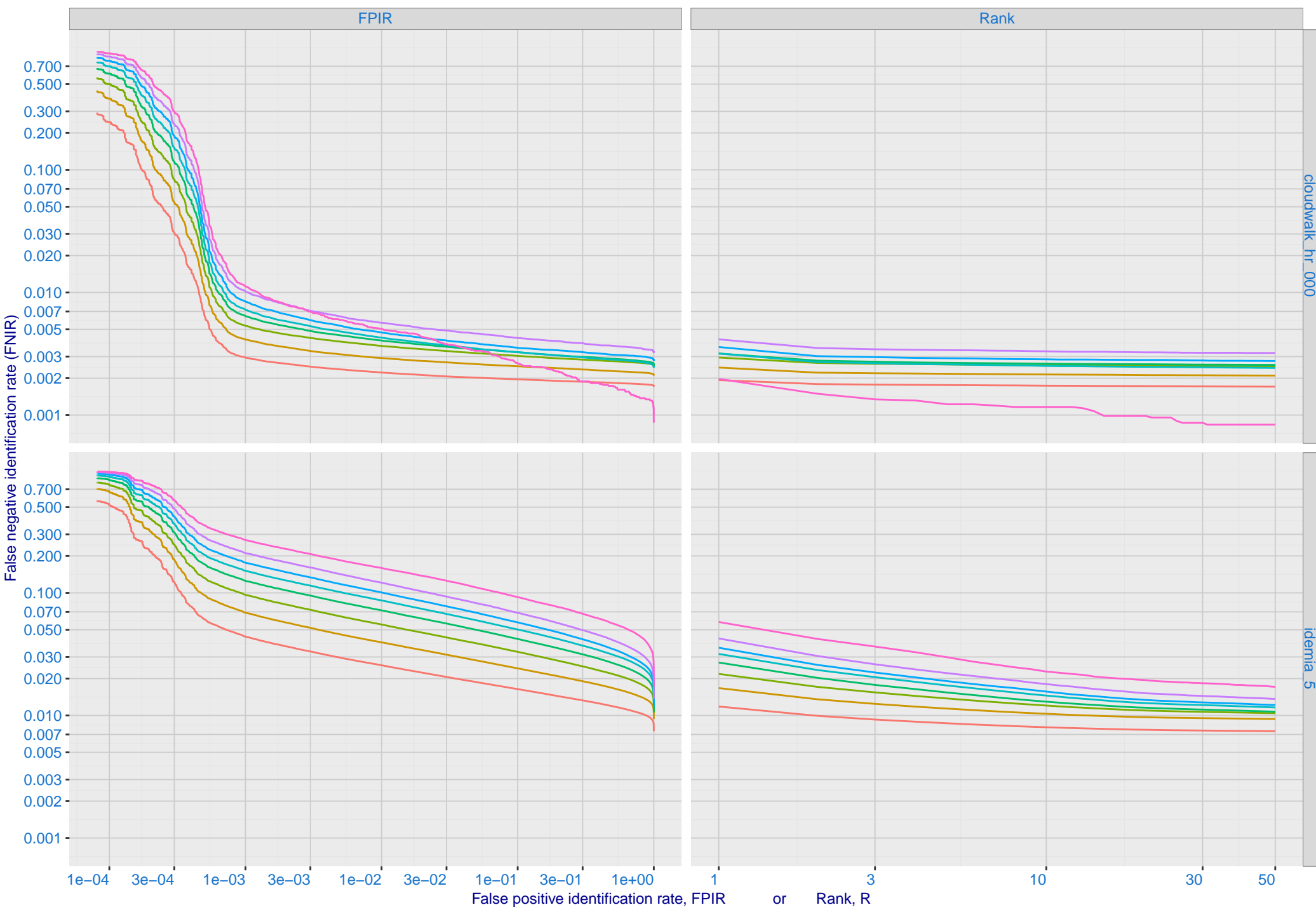L: Investigational mode: FNIR(1600000, R, 0) by probe type

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

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