

A: Datasheet

Algorithm: realnetworks\_003

Developer: Realnetworks Inc

Submission Date: 2019\_06\_12

Template size: 1848 bytes

Template time (2.5 percentile): 168 msec

Template time (median): 174 msec

Template time (97.5 percentile): 202 msec

Investigation:

Frontal mugshot ranking 168 (out of 259) --- FNIR(1600000, 0, 1) = 0.0242 vs. lowest 0.0009 from sensetime\_005

Mugshot webcam ranking 151 (out of 221) --- FNIR(1600000, 0, 1) = 0.0615 vs. lowest 0.0062 from sensetime\_005

Mugshot profile ranking 84 (out of 190) --- FNIR(1600000, 0, 1) = 0.7709 vs. lowest 0.0591 from sensetime\_005

Immigration visa-border ranking 78 (out of 142) --- FNIR(1600000, 0, 1) = 0.0313 vs. lowest 0.0014 from visionlabs\_009

Immigration visa-kiosk ranking 73 (out of 139) --- FNIR(1600000, 0, 1) = 0.2091 vs. lowest 0.0694 from cib\_000

Identification:

Frontal mugshot ranking 155 (out of 259) --- FNIR(1600000, T, L+1) = 0.1589, FPIR=0.001000 vs. lowest 0.0018 from sensetime\_004

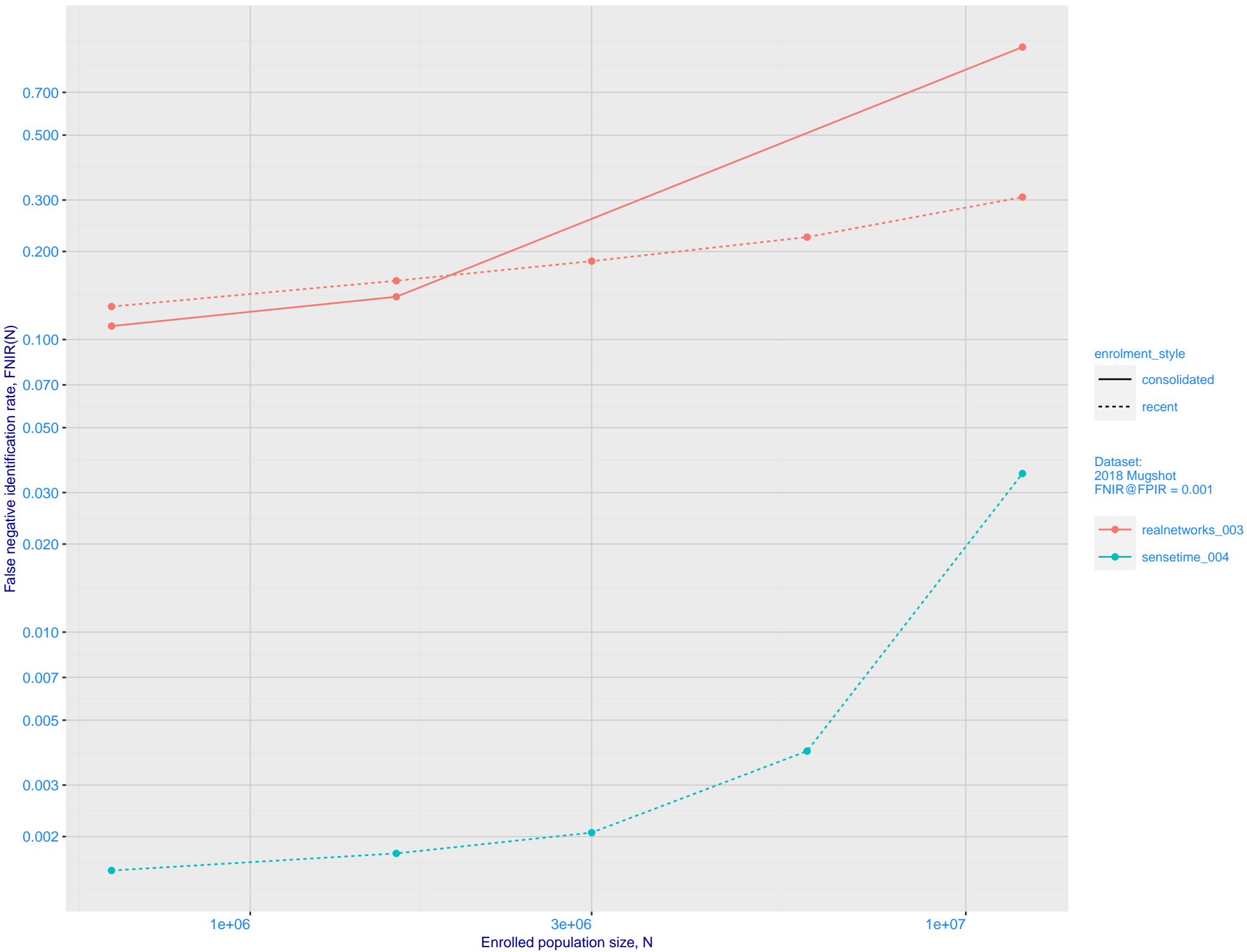
Mugshot webcam ranking 143 (out of 219) --- FNIR(1600000, T, L+1) = 0.2658, FPIR=0.001000 vs. lowest 0.0122 from sensetime\_003

Mugshot profile ranking 117 (out of 189) --- FNIR(1600000, T, L+1) = 0.9983, FPIR=0.001000 vs. lowest 0.1733 from sensetime\_005

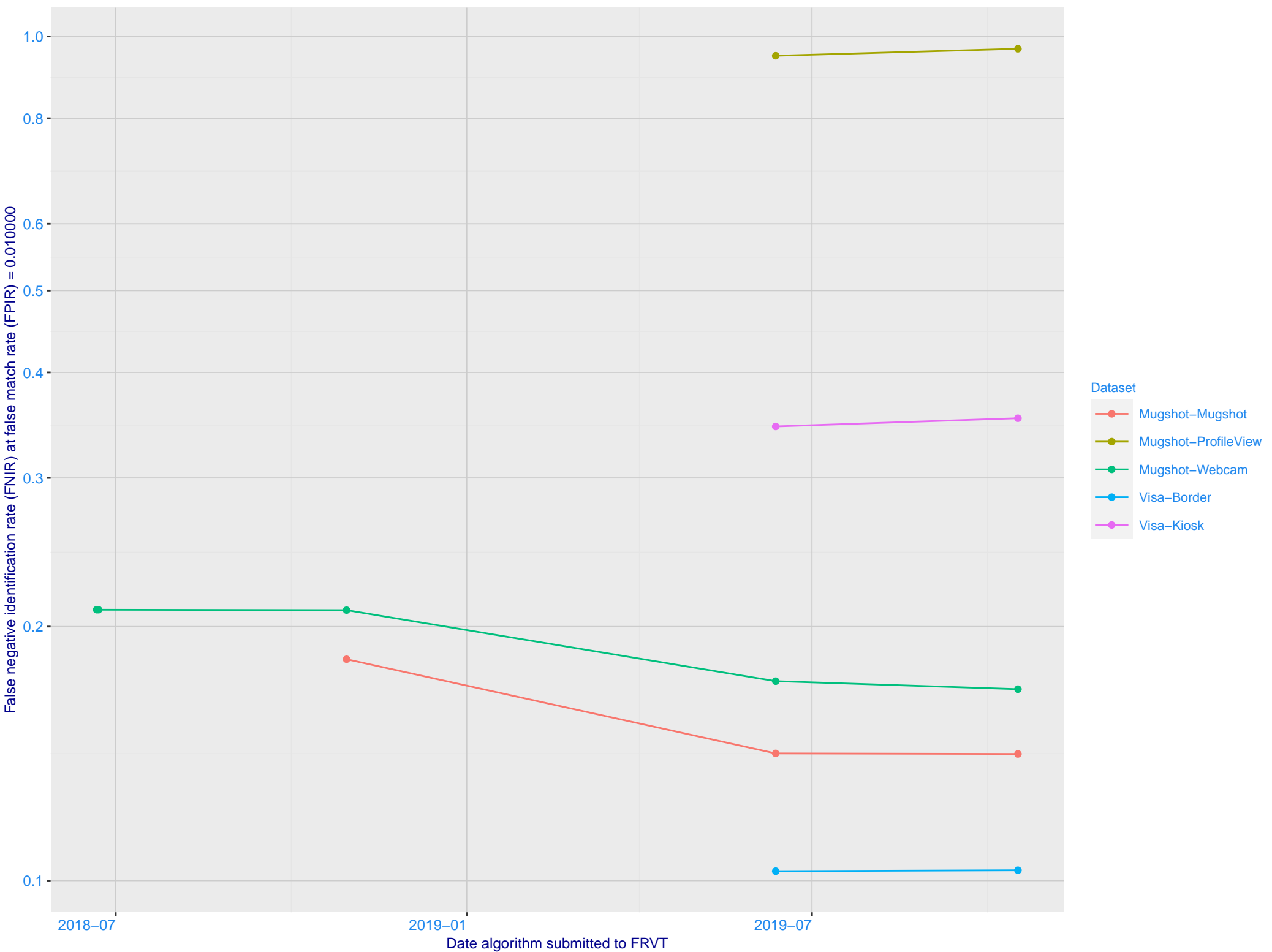
Immigration visa-border ranking 75 (out of 139) --- FNIR(1600000, T, L+1) = 0.1641, FPIR=0.001000 vs. lowest 0.0059 from sensetime\_004

Immigration visa-kiosk ranking 58 (out of 134) --- FNIR(1600000, T, L+1) = 0.5086, FPIR=0.001000 vs. lowest 0.1048 from sensetime\_005

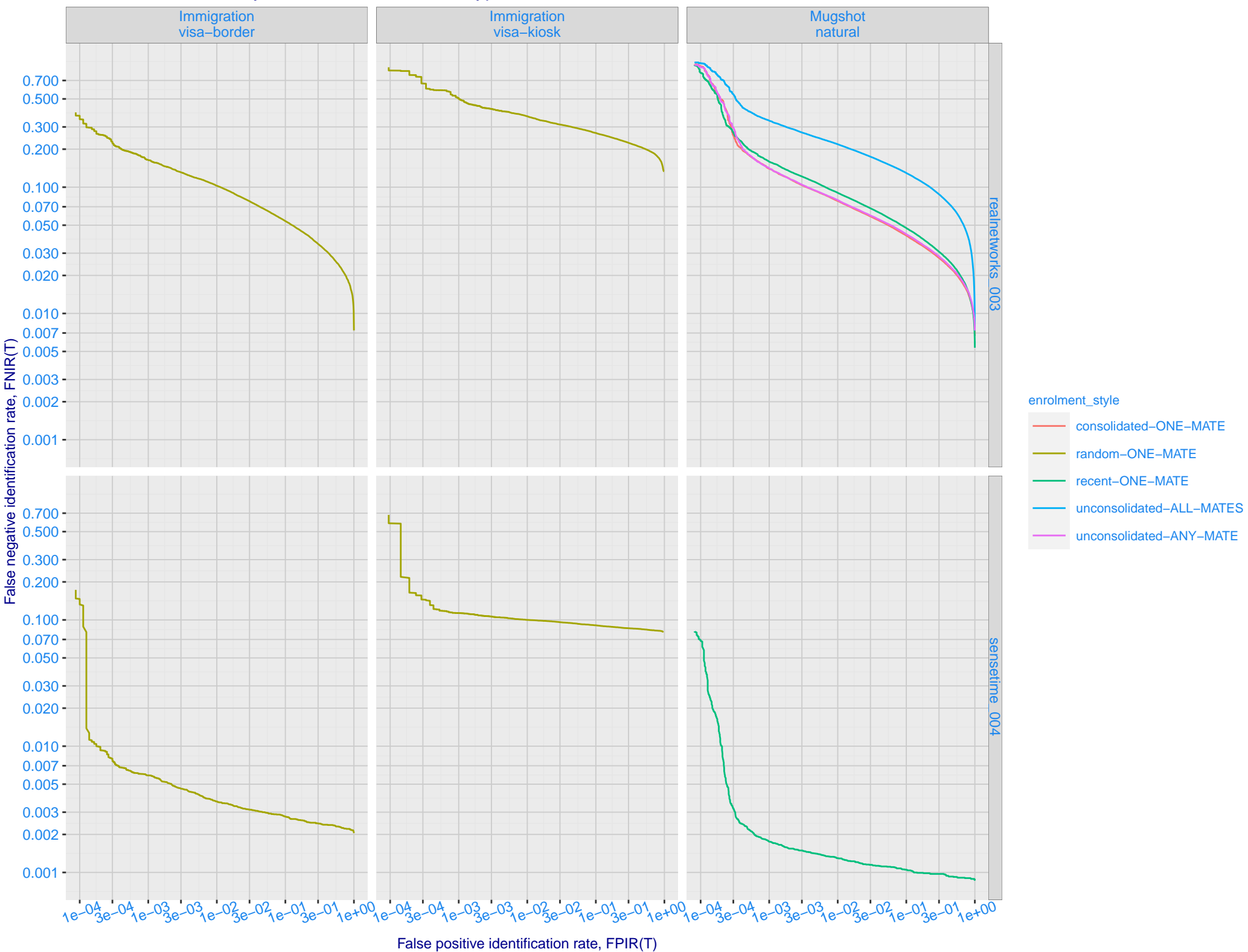
B: Mugshot natural images, identification mode: FNIR(N, L+1, T) vs. most accurate (sensetime\_004)



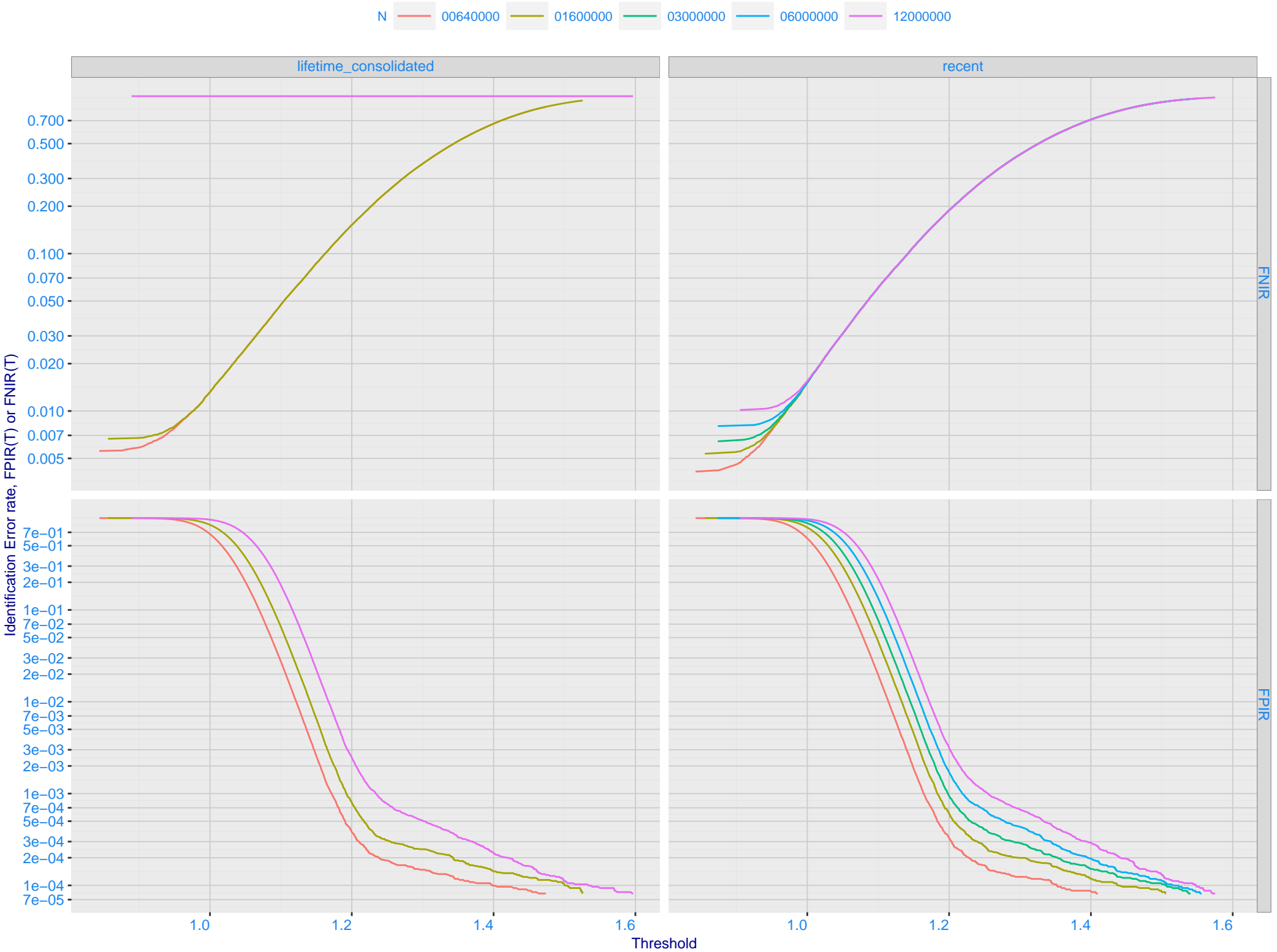
C: Evolution of accuracy for REALNETWORKS algorithms on three datasets 2018 – present



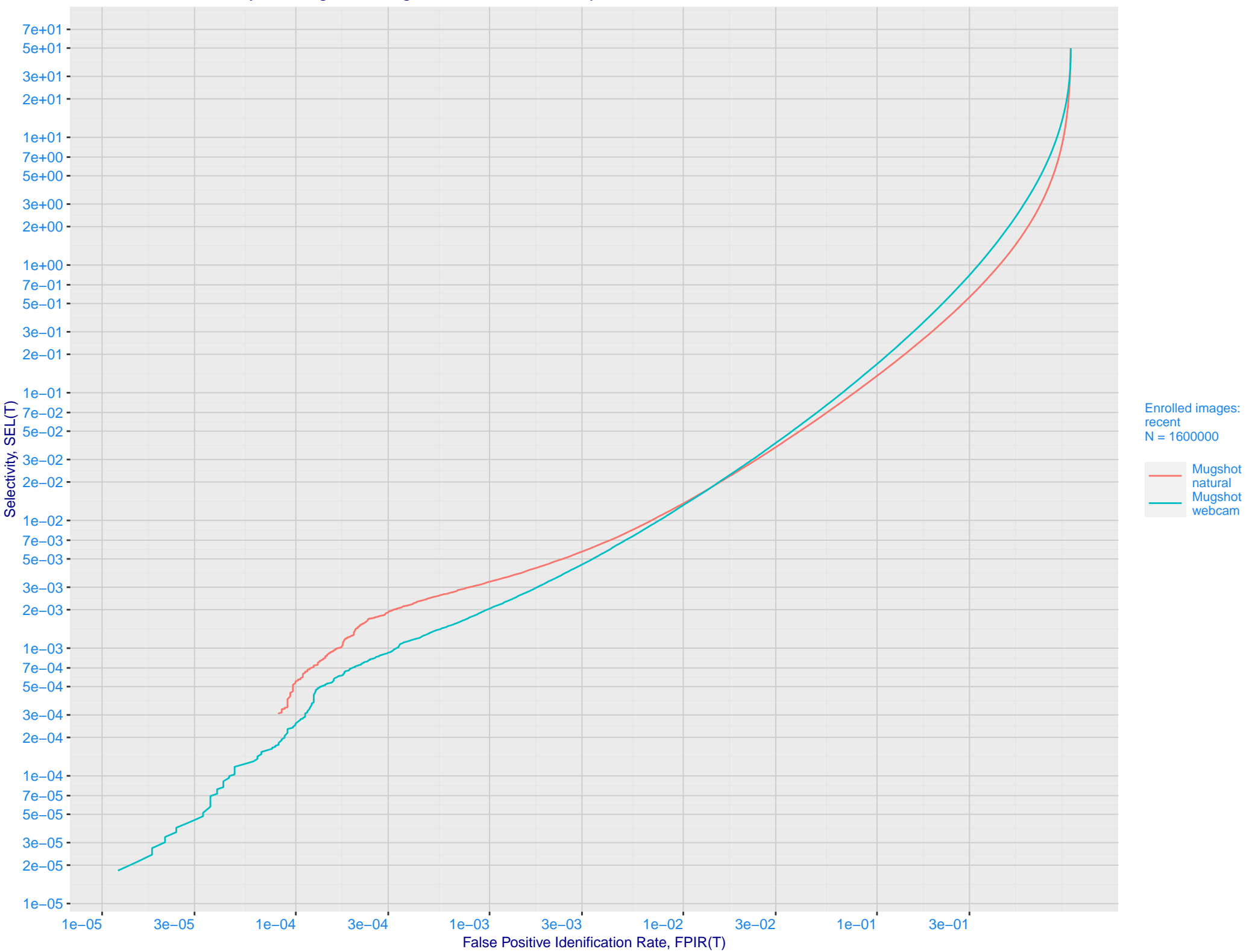
D: 1:N error tradeoff by dataset and enrollment type. N = 1600000 individuals



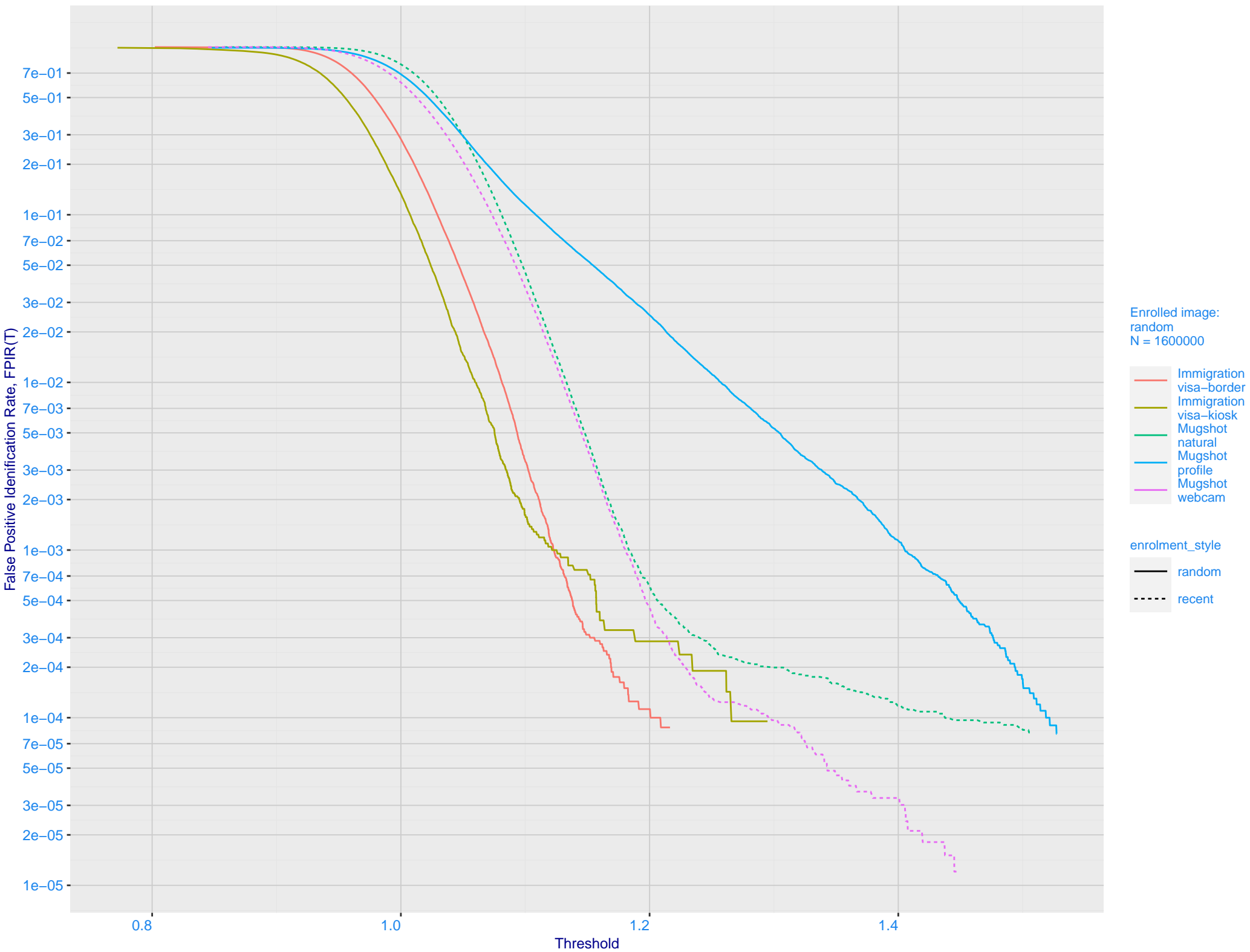
E: Dependence of error rates on T by number enrolled identities, N, for Mugshot natural images



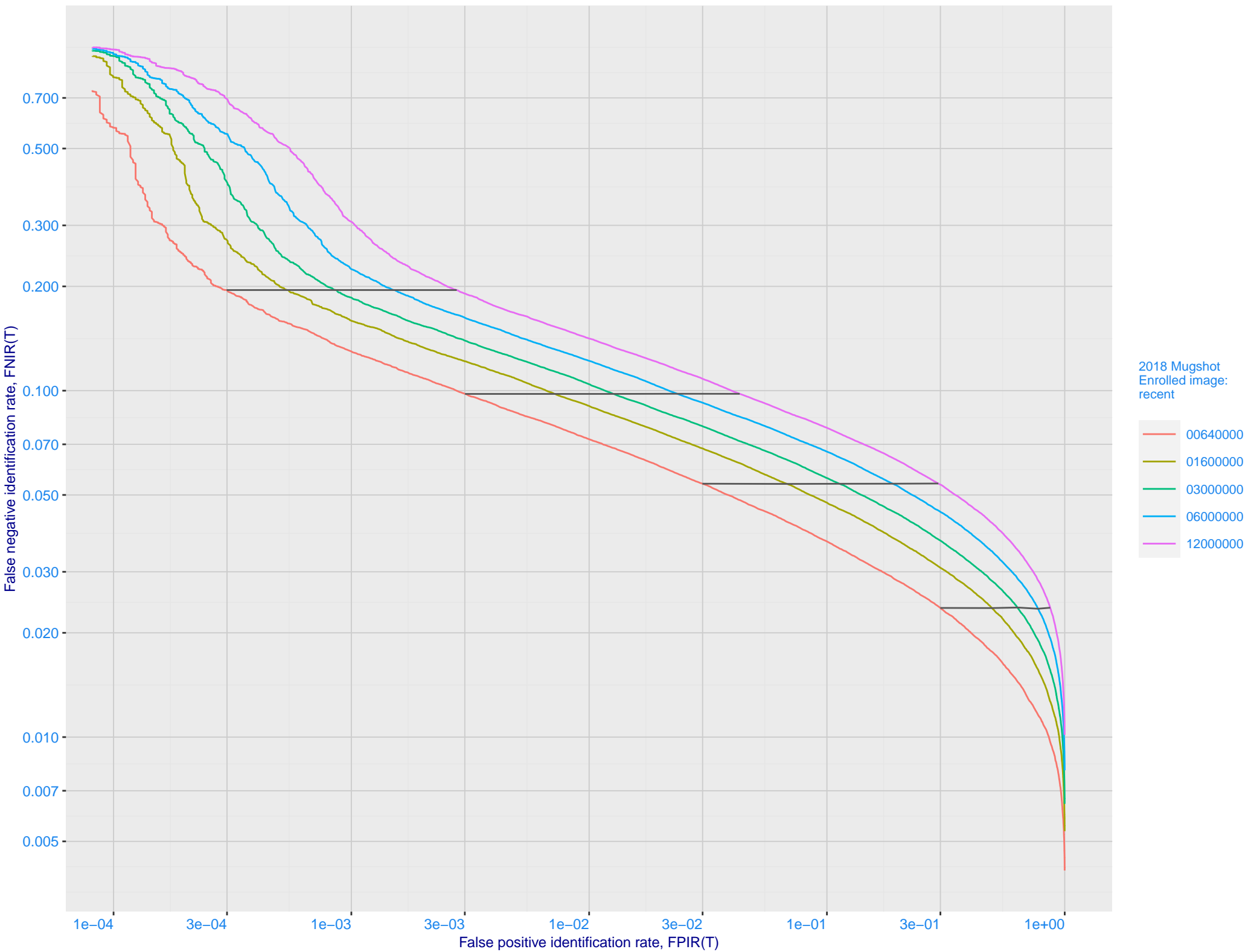
F: FPIR vs. Selectivity for mugshot images, N = 1600000 subjects enrolled with one recent mate



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

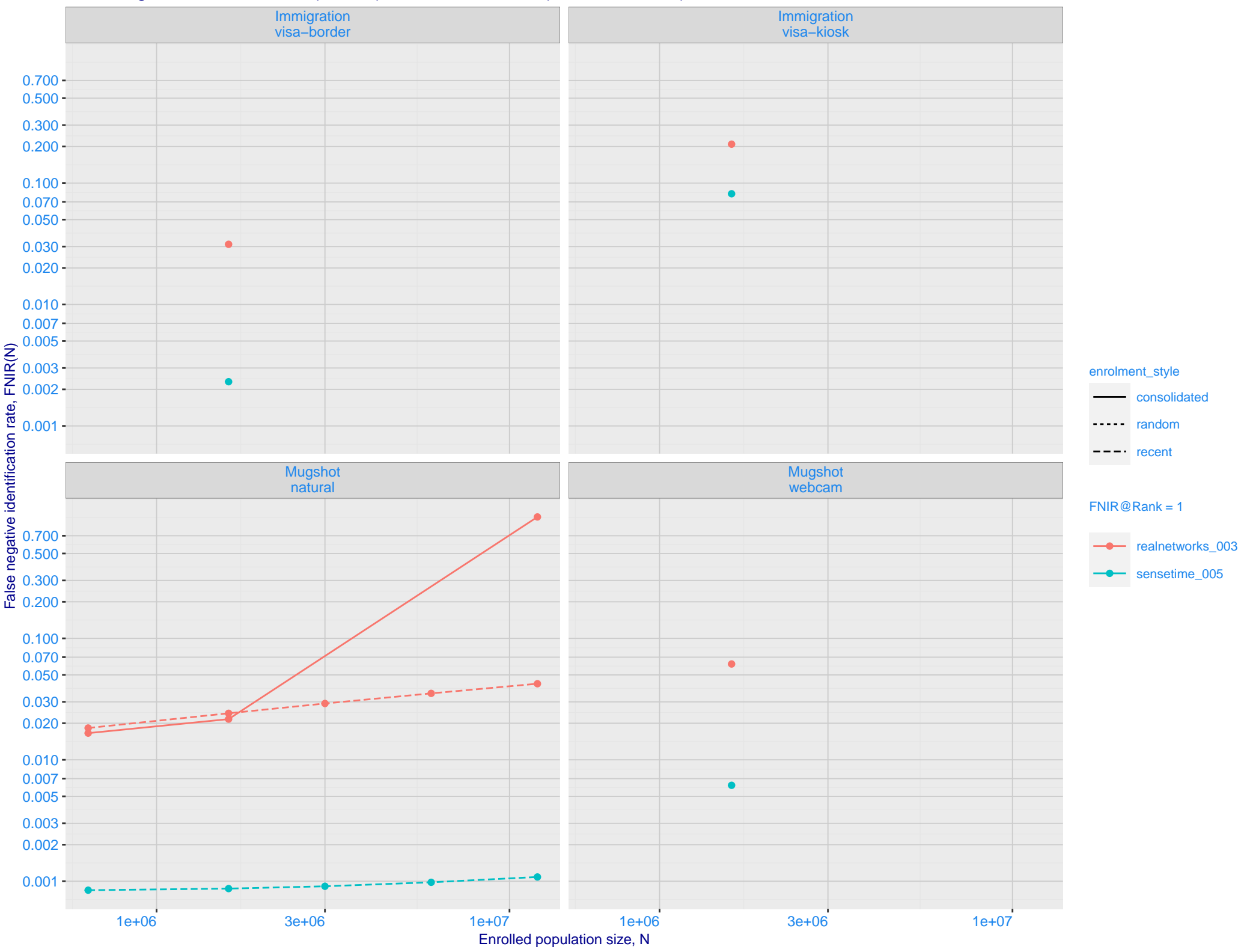


H: DET for Mugshot natural images and various N. Links connect points of equal threshold.

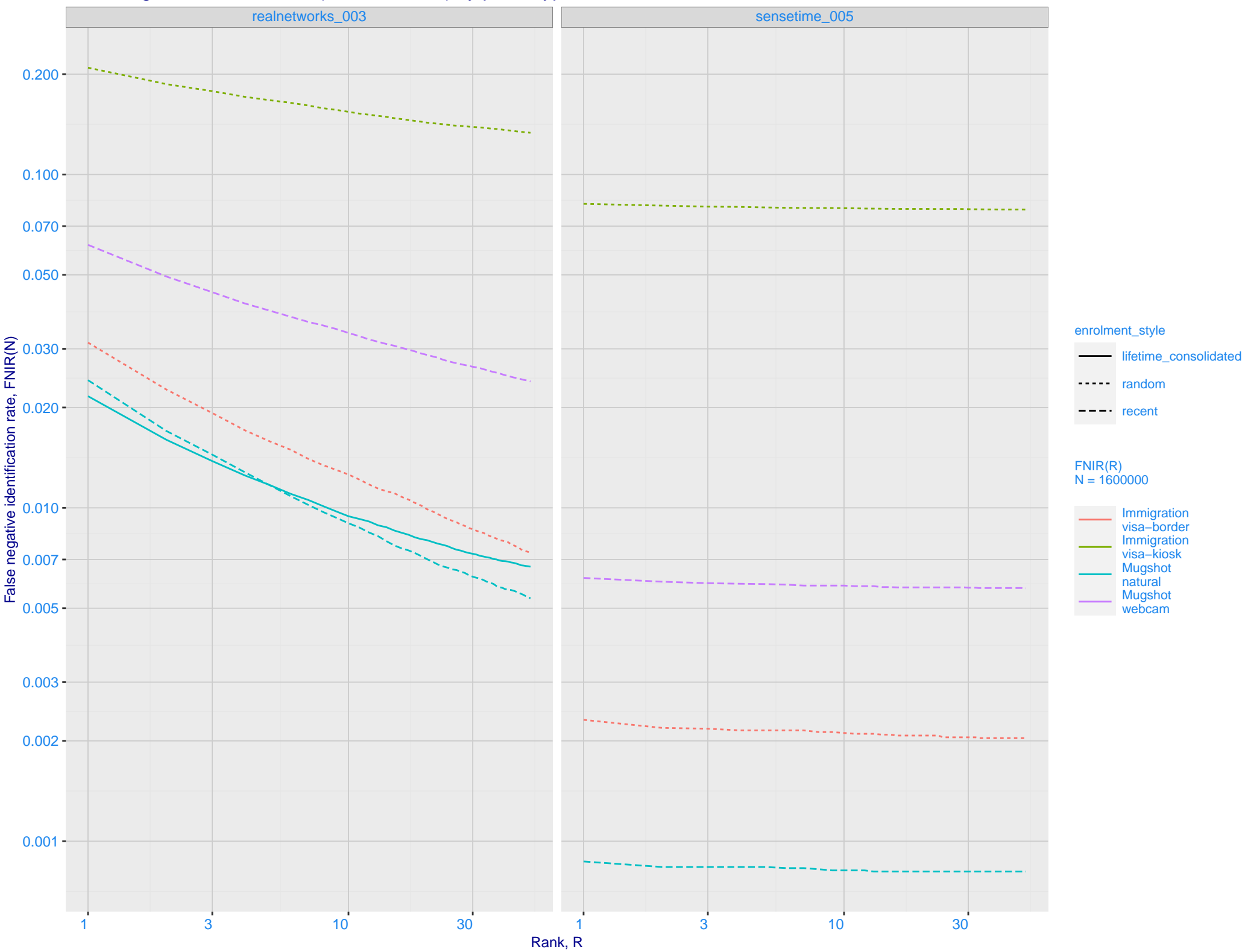




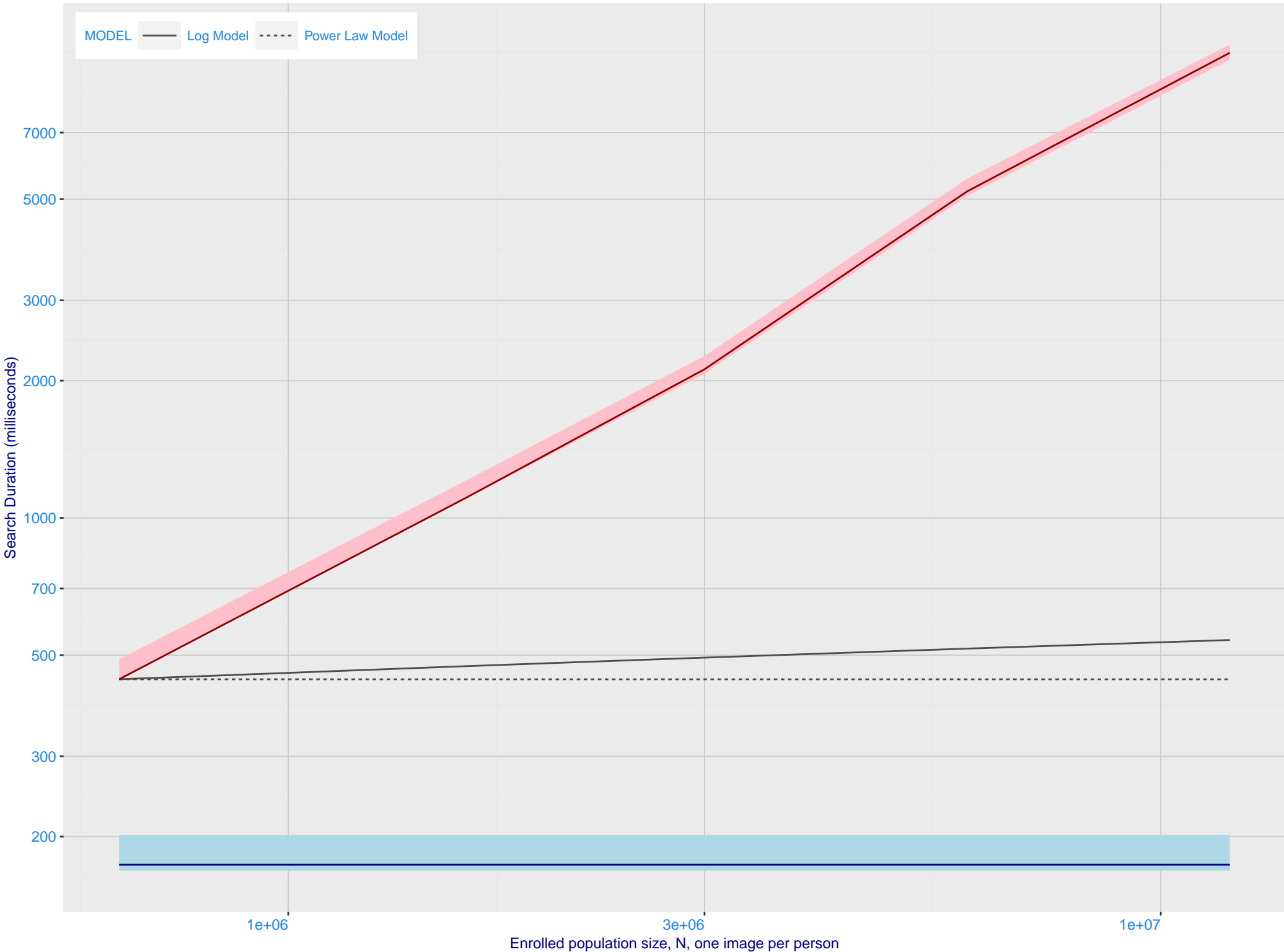
# I: Investigational mode: FNIR(N, 1, 0) vs. most accurate (sensetime\_005)



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

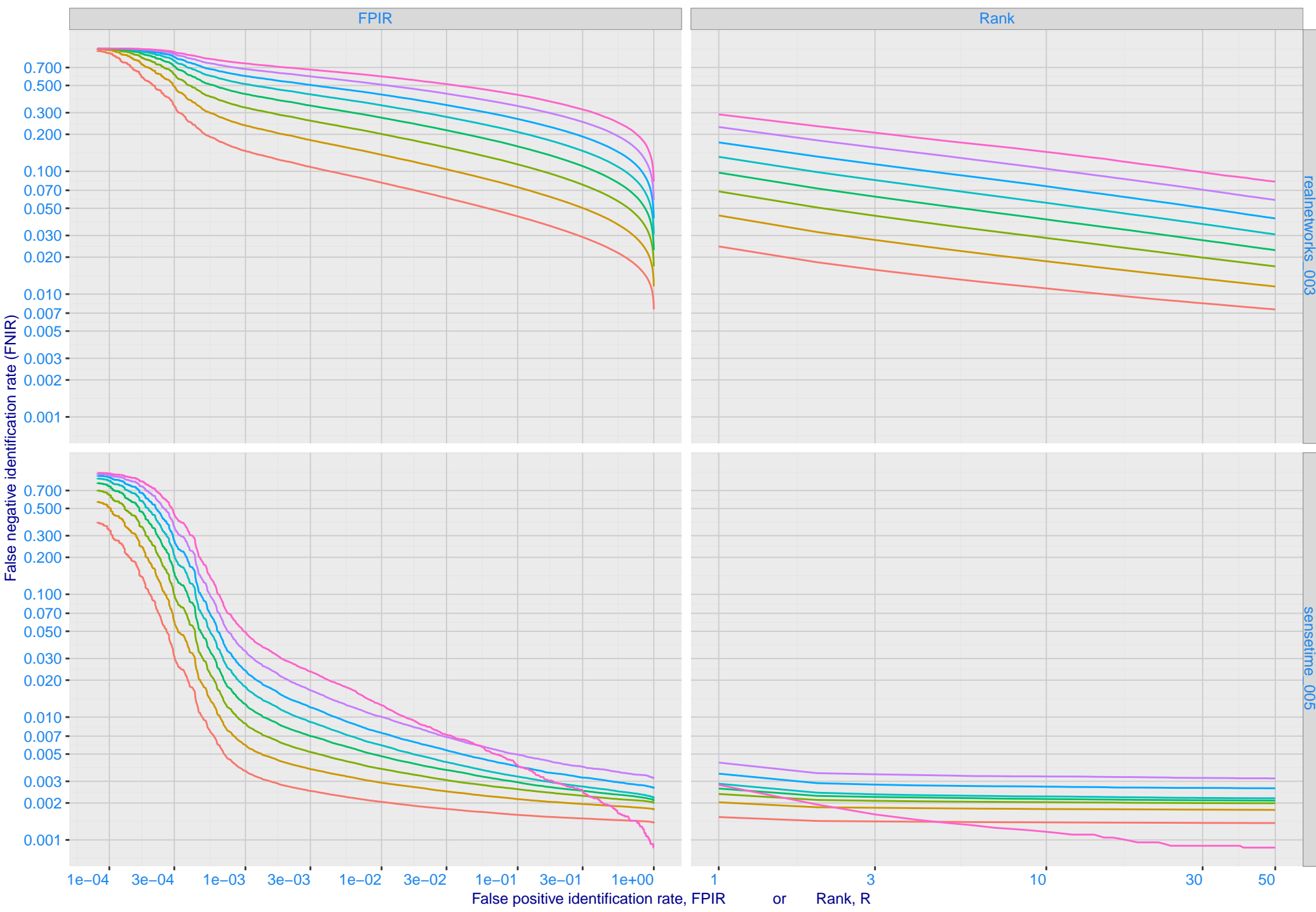
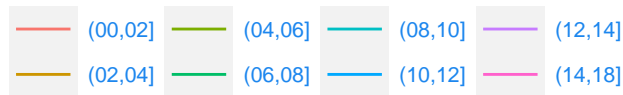


Template duration; search duration vs. N. The blue and pink ribbon covers 95 percent of observed measurements. The template generation time is independent of N. The log and power-law models are fit to the first two (N,T) observations



# M: Identification FNIR(N, T, L+1) and Investigational FNIR(N, 0, R) under ageing

Dataset: 2018 Mugshot N = 3068801



# N: Decline of genuine scores with ageing

