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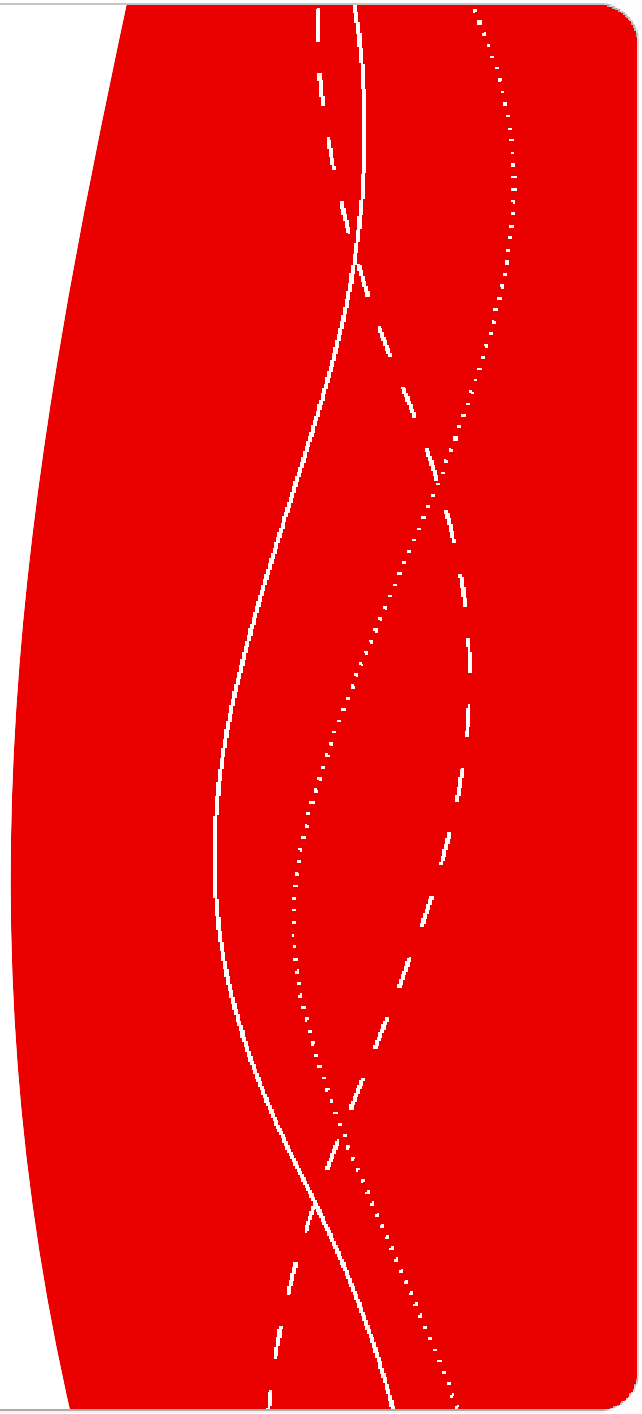
FINDING A BETTER WAY

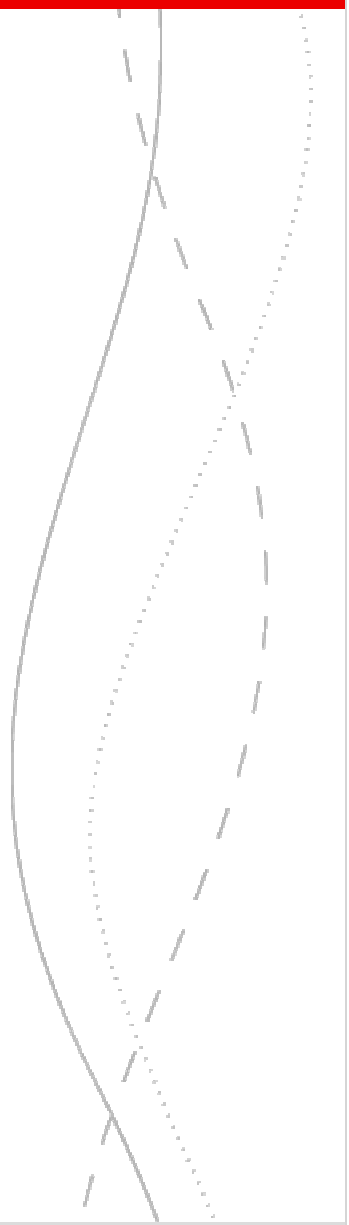
RMMS

Road Marking Management System



RMMS is comparable to PMS for road surfaces

Prediction of the road marking performance, using an statistical approach



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$$Y_{ijk} = \mu + \alpha_i + \beta_j + \gamma_k + (\alpha \times \beta)_{ij} + (\alpha \times \gamma)_{ik} + (\beta \times \gamma)_{jk} + (\alpha \times \beta \times \gamma)_{ijk} + \varepsilon$$

The idea is to decide what parameters of interest are α,β,γ and estimate there values.

As an example

α may be the age of the road marking
β may be the road marking material
γ may be the contractor

$$R_i = \alpha - AGE_i - MTL_i - CTR_i - (AGE \times MTL)_{ij} - (AGE \times CTR)_{ik} - (MTL \times CTR)_{jk} - (AGE \times MTL \times CTR)_{ijk} - \varepsilon$$

Results from Region East, Norway

AGE — New (i=0)
1 year old (i=1)

MTL — **Thermoplastic (j=1)**
Sprayplastic (j=2)
Paint (j=3)

CTR — **Contractor 1 (k=1)**
Contractor 2 (k=2)

Response variable	Index	**Parameter estimation**
constant (μ)		**256**
AGE	$i = 0$	**39**
	$i = 1$	**0**
MTL	$j = 1$	**-60**
	$j = 2$	**-43**
	$j = 3$	**0**
CTR	$k = 1$	**24**
	$k = 2$	**0**
AGE × *MTL*	$i,j = 0,1$	**8**
	$i,j = 0,2$	**-7**
	others	**0**
AGE × *CTR*	$i,k = 0,1$	**28**
	others	**0**
MTL × *CTR*	$j,k = 1,1$	**-41**
	others	**0**
AGE × *MTL* × *CTR*	$i,j,k = 0,1,1$	**34**
	others	**0**

$$R_L = 256 + 0 - 60 + 24 + 0 + 0 - 41 + 0 = 179$$

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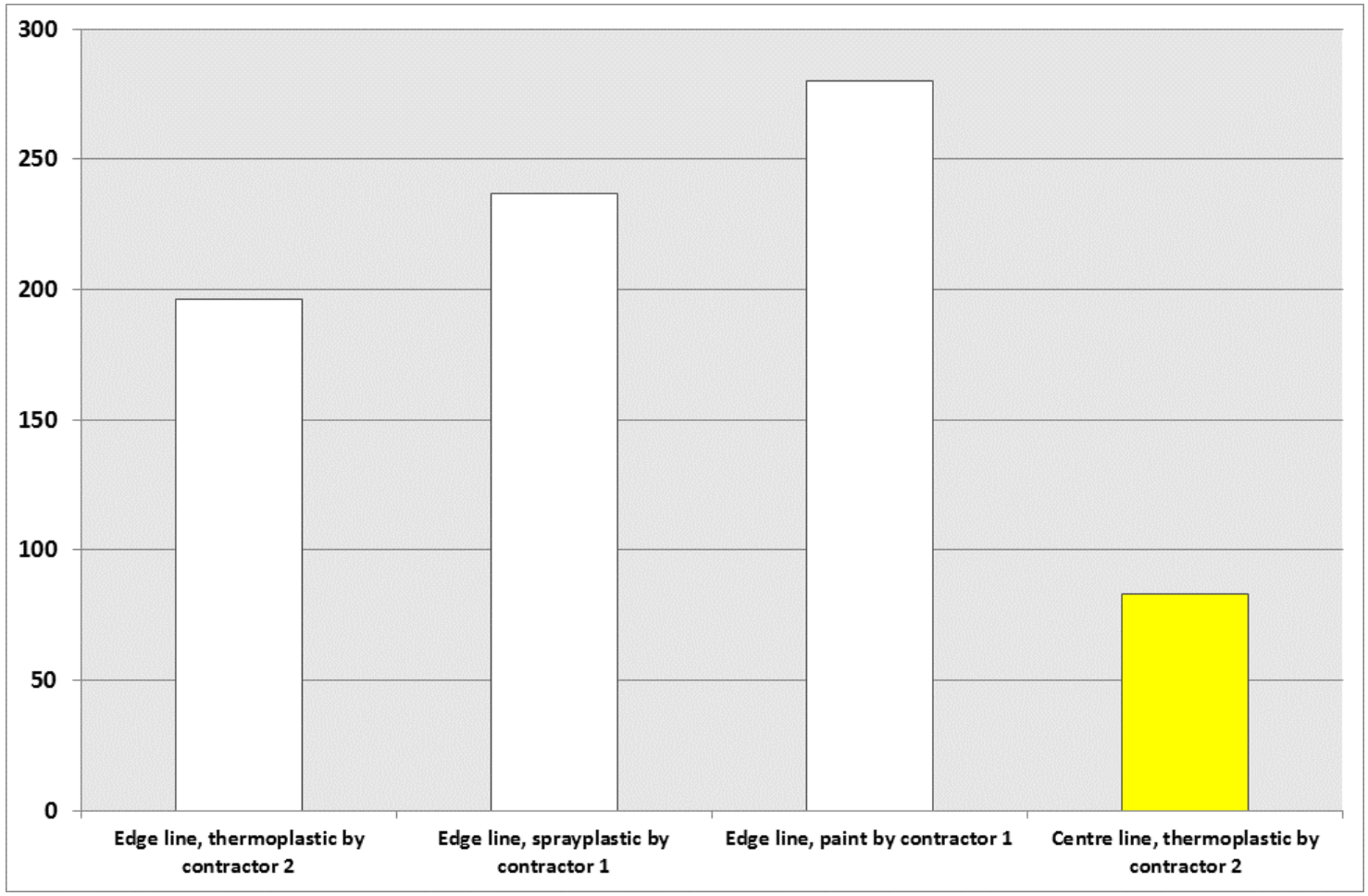
Estimated retroreflectivity in Region South, 1 year old



Estimated and measured retroreflectivity in Region South