

# RCA Cluster Digital Map - MAP QUALITY MODEL

## REQUIREMENTS

Accepted Quality (Positional Correctness: 1 sigma)	2D Track position [m]	2D Element position [m]	Height Track Imprec. [m]	Height Elem Imprec. [m]	Probability Incomplete	Probability Outdated	Cost Increase Project/ Interval	Invest
<b>Overall</b>	0,14	0,14	0,1	0,1	0%	0%	40%	-
<b>Budget "Engineering"</b>	0,10	0,09	0,07	0,07	0%	0%	20%	-
<b>Budget "Operation"</b>	0,04	0,05	0,03	0,03	0%	0%	20%	-

## SCENARIOS

### Phase "Engineering"

Implementation (Mitigation)	2D Pos Track Imprecision [m]	2D Pos Elem Imprec. [m]	Height Track Imprec. [m]	Height Elem. Imprec. [m]	Probability Incomplete	Probability Outdated	Cost Increase Project	Invest
<b>Import</b>	2,83	2,83	1,00	1,00	50%	50%	50%	no
<b>Engineer.</b>	0,00	0,00	0,00	0,00	0%	0%	0%	no
<b>Mount.</b>	0,00	0,61	0,00	0,10	10%	10%	0%	no
<b>Impr.Mount</b>	0,00	0,02	0,00	0,03	0%	0%	10%	low
<b>Constr</b>	0,02	0,00	0,03	0,00	0%	0%	0%	no
<b>Acquisition</b>	0,07	0,08	0,07	0,06	0%	0%	30%	medium
<b>Comp/Pub</b>	0,00	0,00	0,00	0,00	0%	0%	0%	low

### Engineering Scenarios

<b>Accepted contribution</b>	<b>0,10</b>	<b>0,09</b>	<b>0,07</b>	<b>0,07</b>	<b>0%</b>	<b>0%</b>	<b>20%</b>	<b>-</b>
<b>ES0: Import+Engineer.+Mount.+Comp/Pub</b>	2,83	3,44	1,00	1,10	60%	60%	50%	no
<b>ES1: Import+Engineer.+Mount.+Acquisition+Comp/f</b>	0,07	0,08	0,07	0,06	0%	0%	55%	medium
<b>ES2: Acquisition+Engineer.+Impr.Mount+Comp/Pub</b>	0,09	0,10	0,09	0,09	0%	0%	40%	high
<b>ES3: Engineer.+Constr+Impr.Mount+Comp/Pub</b>	0,02	0,02	0,03	0,03	0%	0%	10%	low

### Phase "Operation"

Implementation (Mitigation)	2D Pos Track Imprec. [m]	2D Pos Elem Imprec. [m]	Height Track Imprec. [m]	Height Elem. Imprec. [m]	Probability Incomplete	Probability Outdated	Cost Increase Interval	Invest
<b>Standard Maintenance</b>	0,04	0,85	0,03	0,03	10%	10%	0%	no
<b>Standard Track + Impr. Elem. Maint.</b>	0,04	0,04	0,03	0,03	0%	0%	20%	medium
<b>Improved Track + Impr. Elem Maint.</b>	0,02	0,04	0,02	0,03	0%	0%	80%	very high
<b>Continuous Acquisition</b>	0,06	0,07	0,05	0,05	10%	10%	80%	high

### Operation Scenarios

<b>Accepted contribution</b>	<b>0,04</b>	<b>0,05</b>	<b>0,03</b>	<b>0,03</b>	<b>0%</b>	<b>0%</b>	<b>20%</b>	<b>-</b>
<b>OS0: Standard Maintenance</b>	0,04	0,85	0,03	0,03	10%	10%	0%	no
<b>OS1: Standard Track + Impr. Elem. Maint.</b>	0,04	0,04	0,03	0,03	0%	0%	20%	medium
<b>OS1: Improved Track + Impr. Elem Maint.</b>	0,02	0,04	0,02	0,03	0%	0%	80%	very high
<b>OS3: Continuous Acquisition</b>	0,06	0,07	0,05	0,05	10%	10%	80%	high

## EVALUATION OF SCENARIOS

### Phase "Engineering"

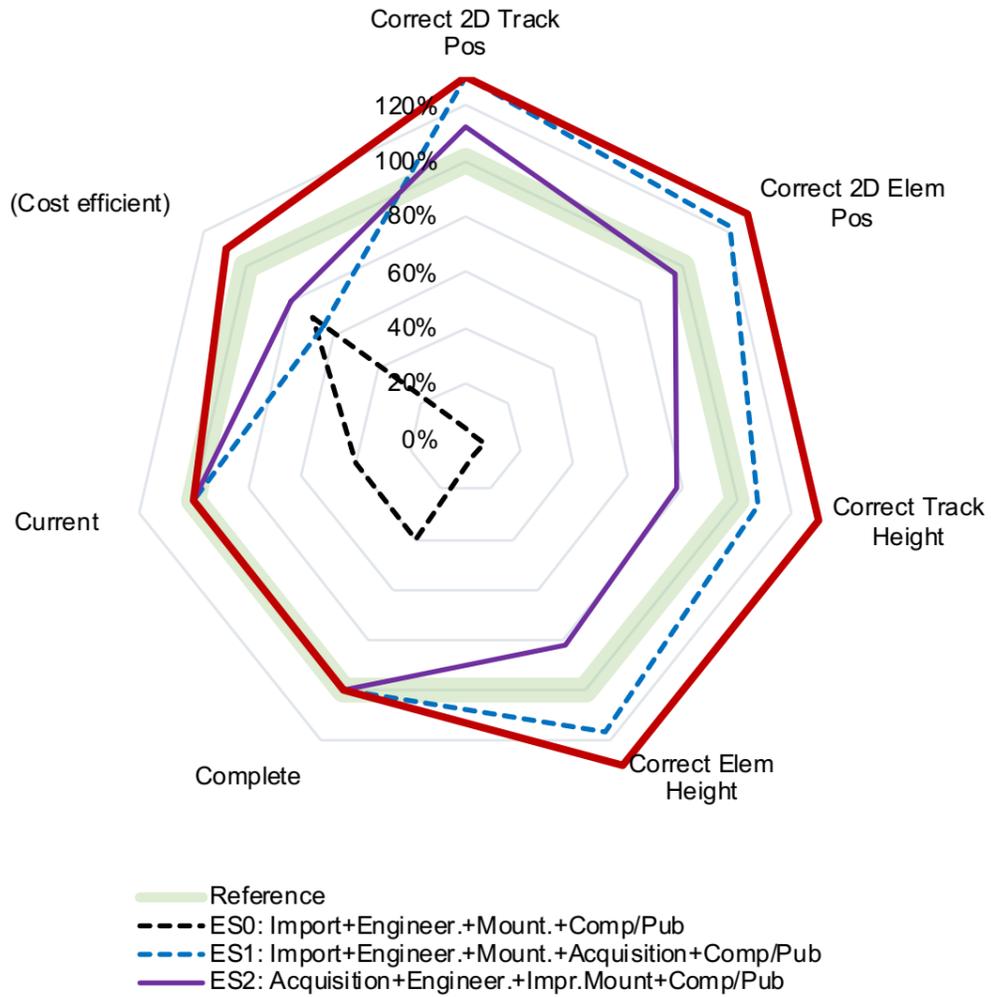
Evaluation Engineering Scenarios	Correct 2D Track Pos	Correct 2D Elem Pos	Correct Track Height	Correct Elem Height	Complete	Current	(Cost efficient)	Invest	Acceptable
<b>Reference</b>	100%	100%	100%	100%	100%	100%	100%	-	-
<b>ES0: Import+Engineer.+Mount.+Comp/Pub</b>	4%	3%	7%	6%	40%	40%	70%	no	✘
<b>ES1: Import+Engineer.+Mount.+Acquisition+Comp/F</b>	130%	122%	108%	117%	100%	100%	65%	medium	✔
<b>ES2: Acquisition+Engineer.+Impr.Mount+Comp/Pub</b>	112%	96%	78%	82%	100%	100%	80%	high	✘
<b>ES3: Engineer.+Constr+Impr.Mount+Comp/Pub</b>	130%	130%	130%	130%	100%	100%	110%	low	✔

### Phase "Operation"

Evaluation Operation Scenarios	Correct 2D Track Pos	Correct 2D Elem Pos	Correct Track Height	Correct Elem Height	Complete	Current	(Cost efficient)	Invest	Acceptable
<b>Reference</b>	100%	100%	100%	100%	100%	100%	100%	-	-
<b>OS0: Standard Maintenance</b>	120%	5%	100%	100%	90%	90%	120%	no	✘
<b>OS1: Standard Track + Impr. Elem. Maint.</b>	120%	130%	100%	100%	100%	100%	100%	medium	✔
<b>OS1: Improved Track + Impr. Elem Maint.</b>	130%	130%	130%	100%	100%	100%	40%	very high	✔
<b>OS3: Continuous Acquisition</b>	71%	71%	55%	60%	90%	90%	40%	high	✘

## EVALUATION DIAGRAMS

### Engineering scenarios: fulfilment of Map Data quality criteria



### Operation scenarios: fulfilment of Map Data quality criteria

