NAV workshop January 13th 2015

Young Stock Survival Index

Inclusion in NTM

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Status and plan

- *End of November 2014:*

  First EBVs for progeny tested bulls

- *NAV Workshop 13.1.2015*:

  Discussion: if - and how to include in NTM

- *Spring 2015:* First GEBV

- *Next NAV workshop (or before)*:

  Final recommendation to NAV Board

Survey of presentation

How should Young Stock Survival Index be used?

- **Economic value of young stock survival traits**
- **Value of index – compared to other traits in NTM**

The evaluation of Young Stock Survival:

- **Results: Trends**
- ***Data, parameters, evaluation model***

Trait definition

We evaluate 4 trait (multi-trait animal model)

- **Heifer period 1 (HP1): 2- 30 days**
- **Heifer period 2 (HP2): 31- 458 days**
- **Bull period 1 (BP1): 2- 30 days**
- **Bull period 2 (BP2): 31- 183 days**

Young Stock Survival Index = weighted sum

Only calves surviving or dead in a period are included

Calves slaughtered, exported or with missing information are NOT included

Economic value calf survival (€)

NTM-model from 2008 was modified

Unchanged economic assumptions

Trait	HOL	RDC	JER
HP1: Survival, heifers 2-30 days	345	355	200
HP2: Survival, heifers 31-458 days	405	415	240
BP1: Survival, bulls 2-30 days	129	143	27
BP2: Survival, bulls 31-183 days	179	202	79

Economic value calf survival (€)

The value created by

- Saved cost for recruitment of heifers or income from sale/export of heifers
- Income from more bull calves slaughtered
- Saved cost of dead calves (destruction, work)

- Room for crossbreeding or more intense selection of females

Economic assumptions

- Income and costs vary from year to year (more and more)
- Over a larger time span the relation between milk price, beef price and feed costs have been relatively stable
- Focus:

  Results should be comparable with current NTM-values

- General revision of economic values are another (larger) project

Standard deviation of breeding values
= 10 index units

Basis: Sires born 2004-2005, reliability >= 50, at least 200 progeny

Number of calves per 10 index units

Trait	HOL	RDC	JER
HP1: Survival, heifers 2-30 days	0.0098	0.0107	0.0259
HP2: Survival, heifers 31-458 days	0.0118	0.0192	0.0169
BP1: Survival, bulls 2-30 days	0.0097	0.0109	0.0275
BP2: Survival, bulls 31-183 days	0.0208	0.0283	0.0188

Standard deviation of breeding values = 10 index units

Basis: Sires born 2004-2005, reliability >= 50, at least 200 progeny

Percent calves per 10 index units

Trait	HOL	RDC	JER
HP1: Survival, heifers 2-30 days	1.0%	1.1%	2.6%
HP2: Survival, heifers 31-458 days	1.2%	1.9%	1.7%
BP1: Survival, bulls 2-30 days	1.0%	1.1%	2.8%
BP2: Survival, bulls 31-183 days	2.1%	2.8%	1.9%

Value of an index unit
= value of calf * standard deviation/10

Example HOL: 345 * 0.0098/10 = 0.34

€/index unit

Trait	HOL	RDC	JER
HP1: Survival, heifers 2-30 days	0.34	0.38	0.52
HP2: Survival, heifers 31-458 days	0.48	0.80	0.41
BP1: Survival, bulls 2-30 days	0.12	0.16	0.07
BP2: Survival, bulls 31-183 days	0.37	0.57	0.15

Value of an index unit
= value of calf * standard deviation/10

Relative values

Trait	HOL	RDC	JER
HP1: Survival, heifers 2-30 days	26	20	45
HP2: Survival, heifers 31-458 days	37	42	36
BP1: Survival, bulls 2-30 days	9	8	6
BP2: Survival, bulls 31-183 days	28	30	13
Sum	100	100	100

Value of an index unit
Young Stock Survival

Sum of: Value x Breeding value (= total economic breeding value)

RDC-sire: $BV_{€} = 355 * BV_{HP1} + 415*BV_{HP2} + 143*BV_{BP1} + 202*BV_{BP2}$

Standard deviation = value of 10 index units

Trait	HOL	RDC	JER
YSS: Standard deviation (€)	11.3	17.7	9.8
YSS: Value of 1 index unit (€)	1.13	1.77	0.98

Value of 1 index unit

	HOL	RDC	JER
Yield	7.61	8.33	6.80
Growth	0.61	0.00	0.00
Fertility	3.15	2.26	1.56
Birth	**1.52**	**1.21**	**0.47**
Calving	**1.72**	**1.04**	**0.47**
Udder health	3.55	2.78	3.44
Other diseases	1.12	1.04	0.31
Claw health	0.81	0.43	0.39
Longevity	**1.12**	**0.61**	**0.63**
Body conformation	0.00	0.00	0.00
Legs conformation	1.22	0.78	0.31
Udder conformation	2.54	2.78	2.03
Milking speed	0.81	0.87	0.78
Temperament	0.30	0.26	0.23
Young Stock Survival	**1.13**	**1.77**	**0.98**

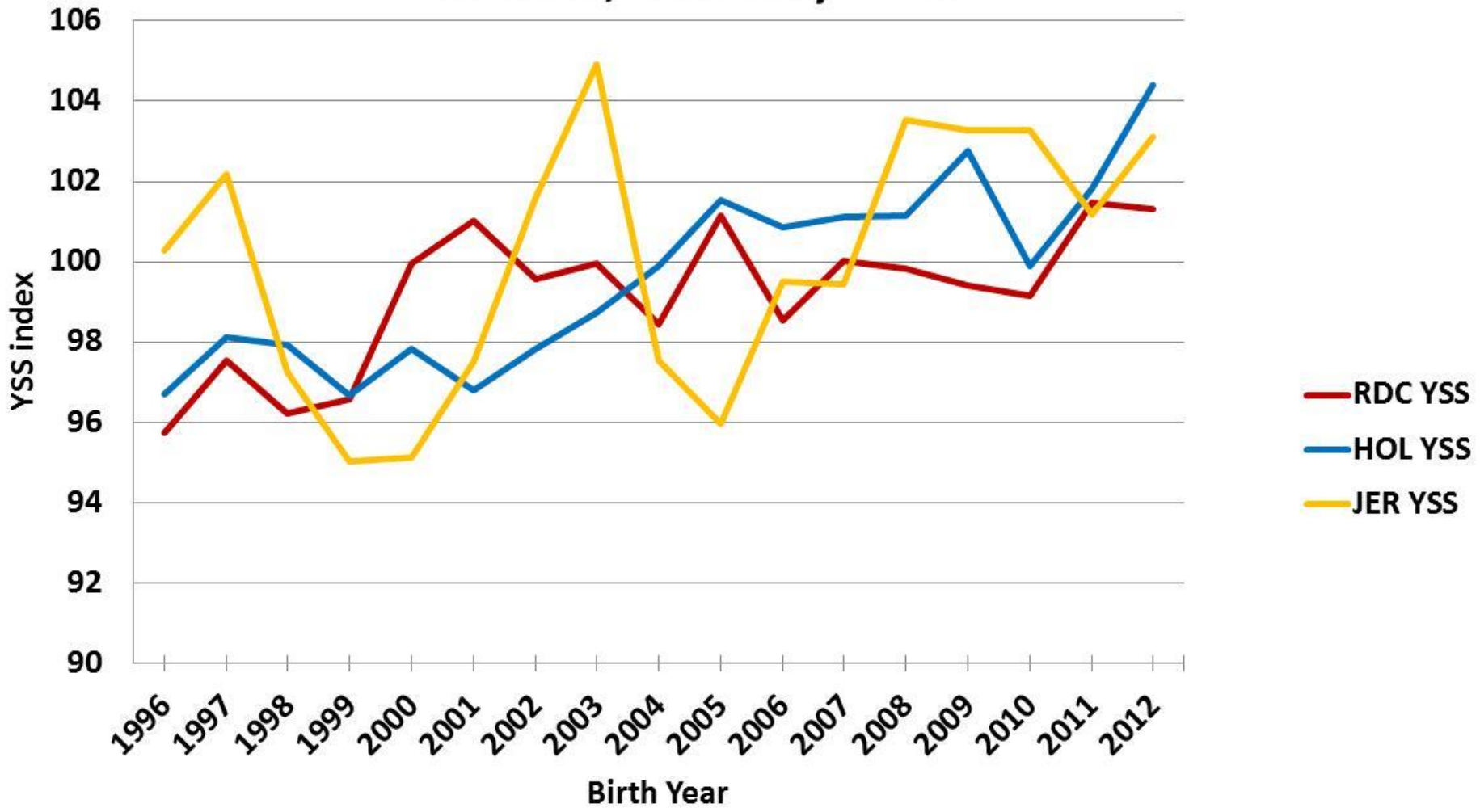
Correlation between YSS and NTM-traits

Sires born 2005-2007

	HOL	RDC	JER
Yield	0.02	-0.01	-0.09
Growth	0.01	-0.12	0.08
Fertility	0.04	0.11	0.04
Birth	0.07	0.27	0.08
Calving	0.06	-0.04	0.10
Udder health	0.04	0.03	0.21
Other diseases	0.10	0.02	0.09
Claw health	0.13	0.06	0.02
Longevity	0.15	0.18	0.05
Body conformation	-0.04	-0.26	-0.13
Legs conformation	0.04	0.22	0.01
Udder conformation	-0.04	-0.07	0.10
Milking speed	-0.04	-0.11	-0.02
Temperament	0.01	-0.07	-0.09
NTM	0.09	0.07	0.08
Number of sires	1050	650	148

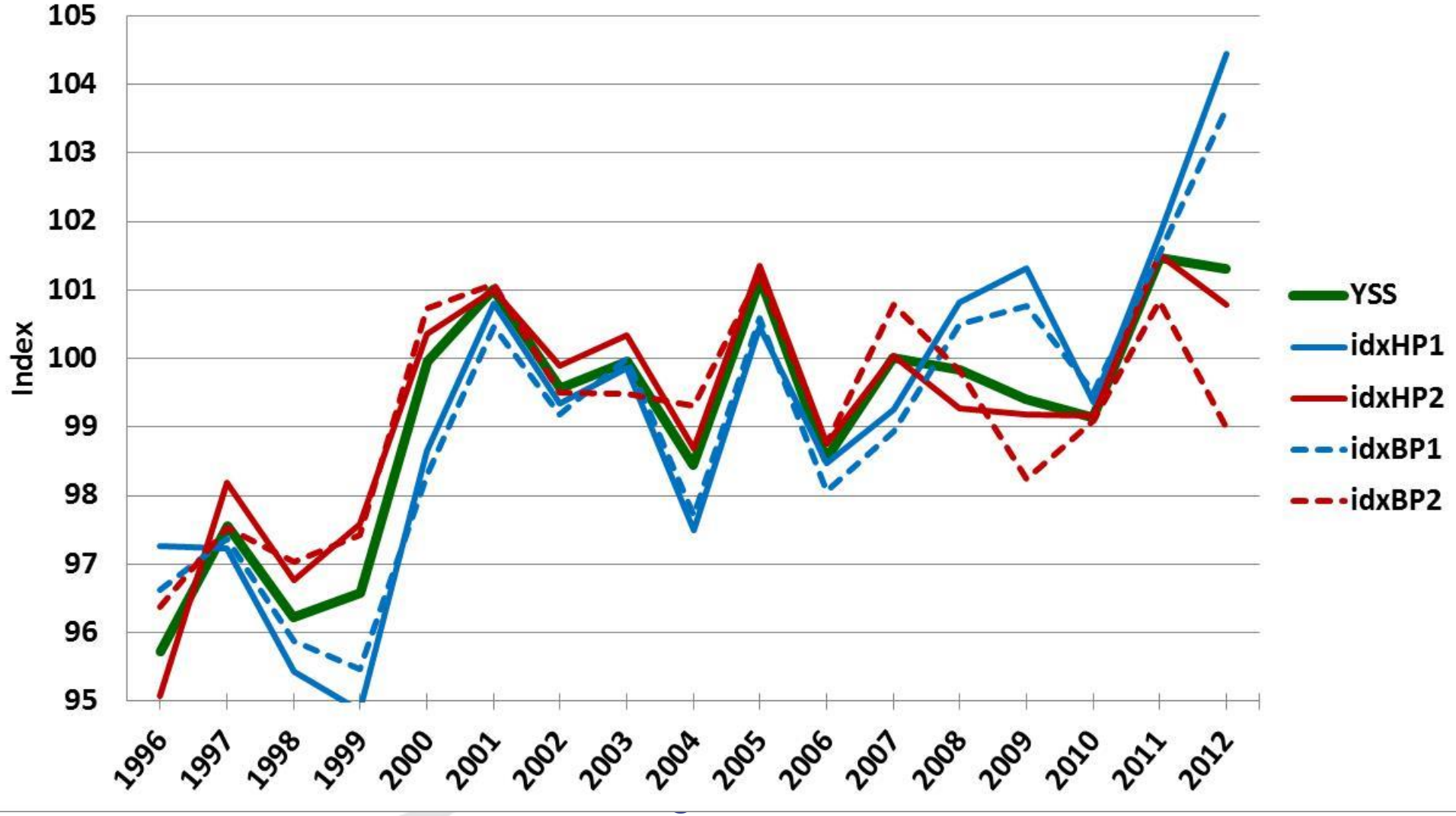
Young Stock Survival trends

AI-sires, reliability >= 40



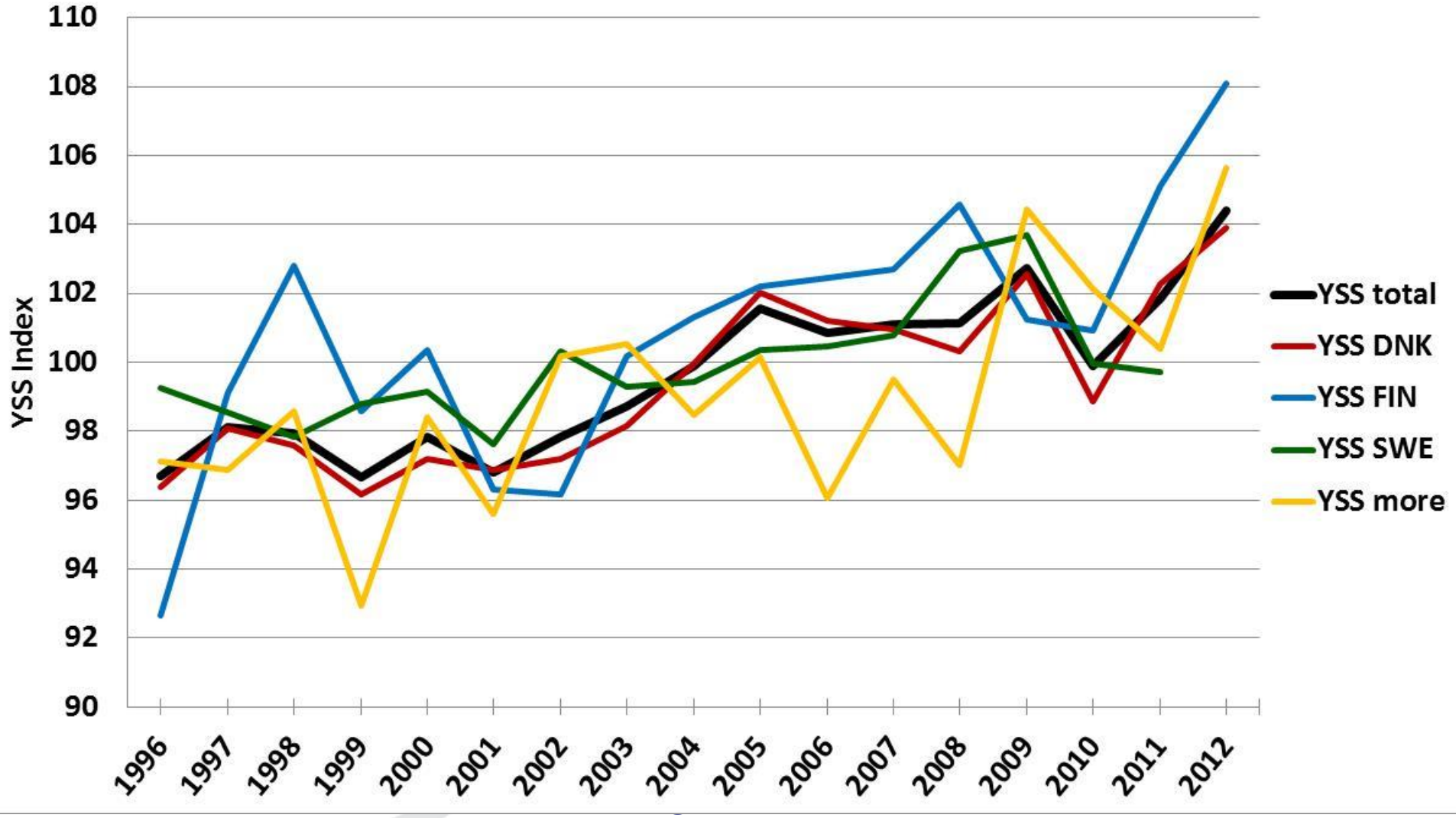
Young Stock Survival Index and subindexes

RDC AI-sires, reliability >= 40



Young Stock Survival per country of test

Holstein AI-sires, reliability > = 40



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