

Engineering Management for KAGRA upgrade

2018/12/4

NATIONAL ASTRONOMICAL OBSERVATORY OF JAPAN

YOICHI ASO

Context

- Upgrade of KAGRA is a complex and challenging engineering problem
- How do we tackle this problem ?
- Can we use standard practices of engineering management ?

We were/are bad

Currently the engineering management of KAGRA is very poor

- SEO exists but no one in SEO knows what is Systems Engineering
- Poor documentation
- No model
- No cable diagram
- No record of changes
- No reviews
- No risk management

I know some of the above exist to some extent.
“No” here means “inadequately small amount”

We need to do better in KAGRA+

But how ?

- Not enough engineers in KAGRA
- Virtually no one has training in engineering management
- Cannot change everything suddenly


We need to find a solution making a good compromise with the reality of KAGRA and an ideal situation

We need to do better in KAGRA+

But how ?

- Not enough engineers in KAGRA
- Virtually no one has training in engineering management
- Cannot change everything suddenly

We need to find a solution making a good compromise with the reality of KAGRA and an ideal situation



This should be a part of the upgrade plan
Sub-group for this ?

Things to consider

- How to manage documents
- How to manage CAD models
- How to keep track of changes
- How to keep track of items
- and so on ...

Human engineering

A good system needs cooperating people

- Private company: enforcement by role power
- KAGRA: most people are not employed by KAGRA

We need to devise nudges to encourage people to use proper engineering management practices

