OPTIMIZING CONSTRUCTION EQUIPMENT FOR LONG-REACH EXCAVATION IN THE DREDGING INDUSTRY

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Introduction

Many Original Equipment Manufacturers (OEMs)

Optimizing your excavator for long reach

Key to new front design

- Ideal v. Min. performance?
- Working envelope?
- Work tools?

Key to integration into base machine

- Front v. side operation?
- How can technology be used?
- Who to collaborate with?

Chose your base excavator

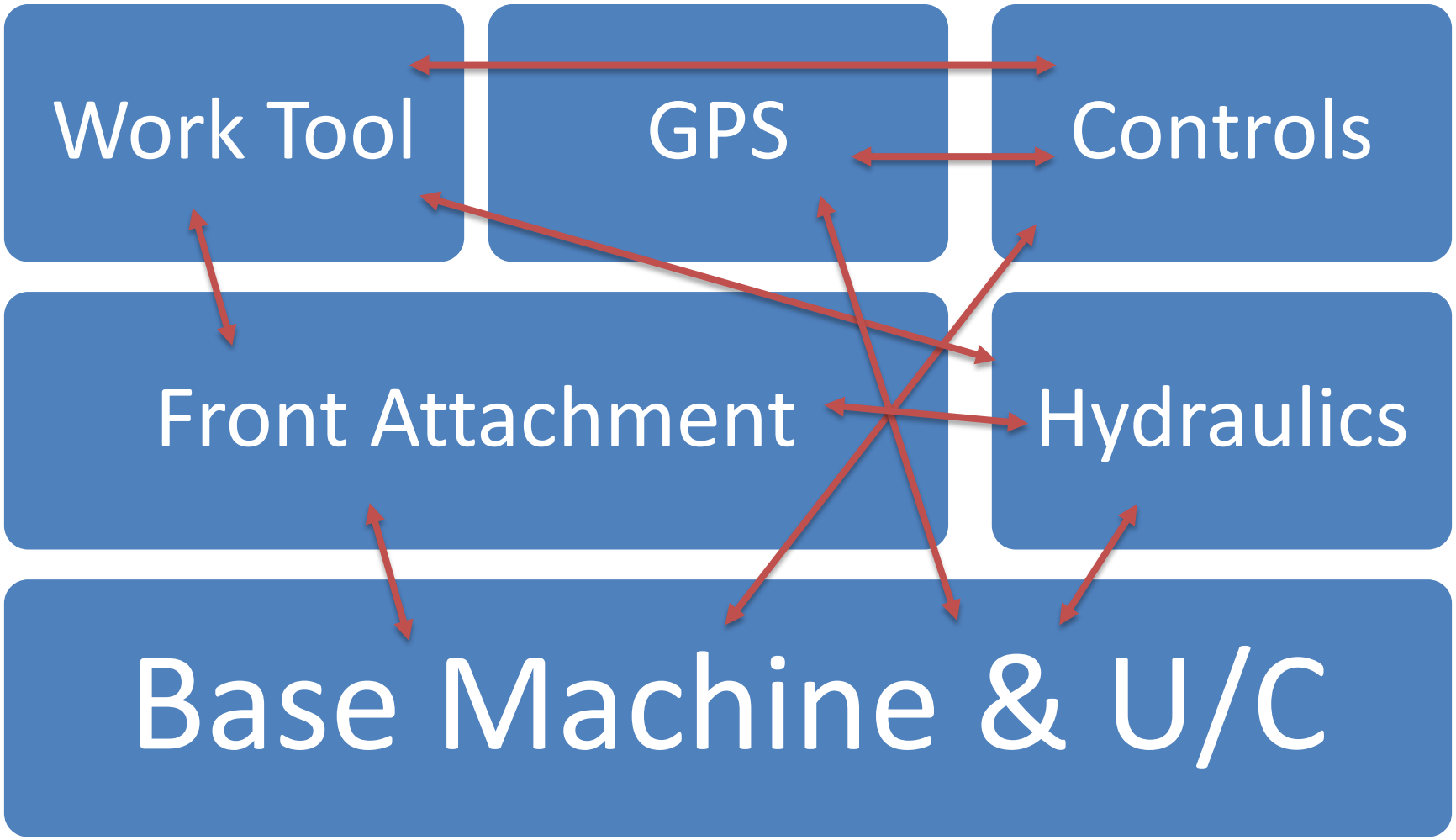
Utility
Key to task

- **Productivity targets?**
- **Regulations e.g. emissions**

Life-cycle
Key to TCO

- **Asset life span?**
- **Maintenance plan?**

Create a solution



AEM design

29 m LR Front

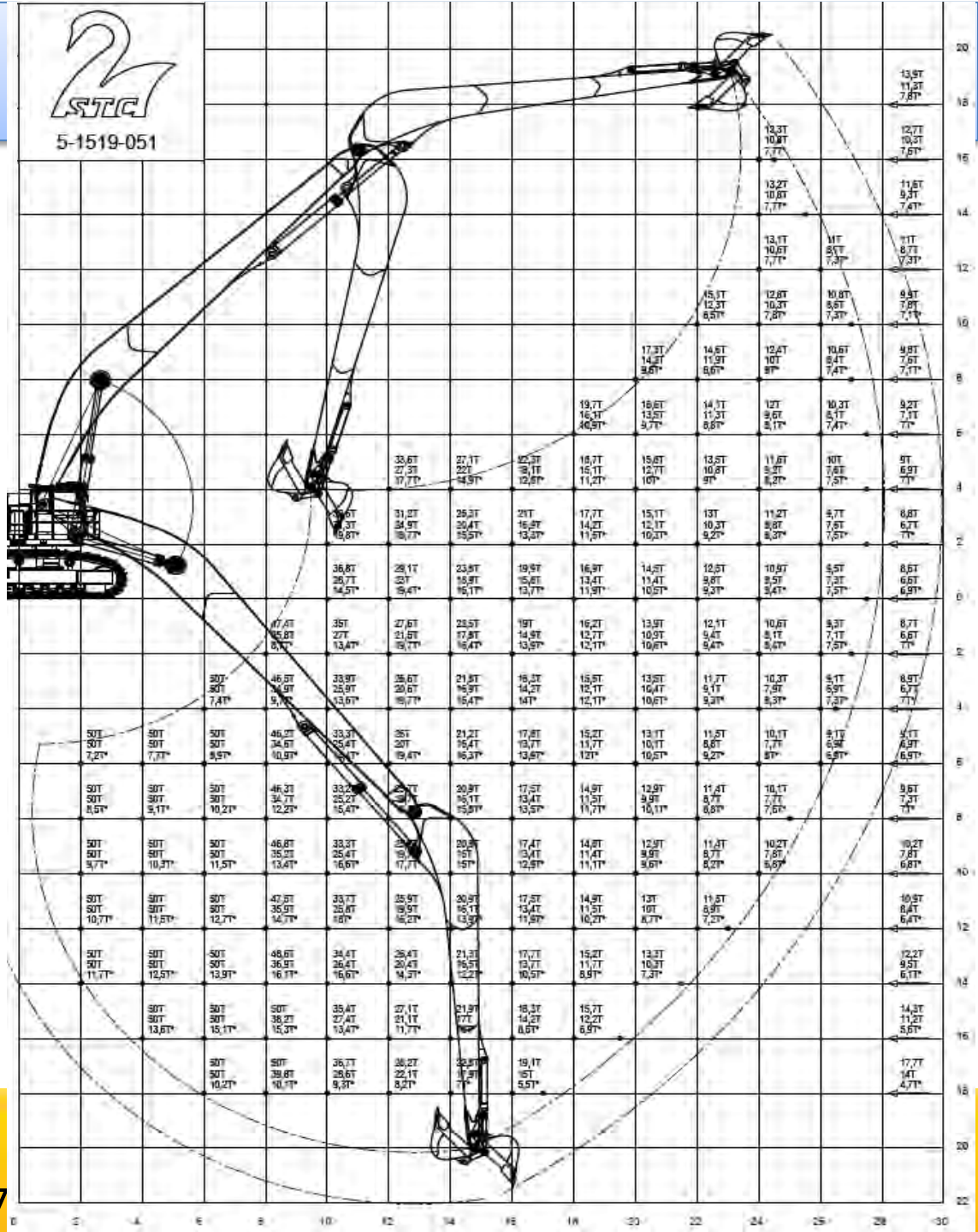
1650 mm Boom

1240 mm Stick

Increased depth – 22 m

Increased lift

Reduce linkage size



AEM Front

Fabricated from OEM geometry.

Designed for OEM serviceable parts

- pins and bushings etc.

Computer aided fabrication

- S690 Plate. Structural steel
- Min yield strength 690 N/mm²
- Stress relieved after welding.

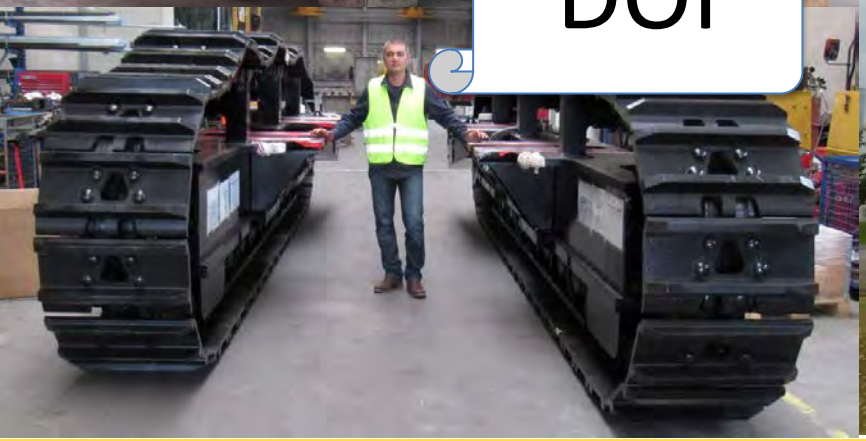
AEM Stability modifications

- Frame reinforcement
- Removable CTWT
- Not hydraulic.

Transportation considerations

AEM DOC

OEM DOI



Completed 29 meter Long Reach attachment


CAT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Closing Remarks

• Requirements of the dredging and marine construction industry are not always well served by standard construction equipment or well understood by Original Equipment Manufacturers.

• Modifications to produce an optimized long reach conversion of an excavator requires specialist knowledge to achieve productivity and retaining safety, durability, transportability, serviceability etc.

• Optimal tools get better results
- but think about cost v benefit when making decisions.

• The process is best achieved and is most cost effective through collaboration between the user, the AEM and the OEM.