

# SOIS Consolidation Conclusions

# Background

- The SOIS activity is an ambitious undertaking targeted at standardising elements of the flight data handling systems to foster reuse and thus reduce costs. The work is split over 3 groups:
  - TCOAS - Defining a standard set of Application services
  - TCONS – Defining standard network and transport layer services and protocols
  - OBL - Standardising the access to different underlying datalinks
- ESA has initiated the SOIS activity and invested significant resources over a 4 year period
- Unfortunately, the work has not progressed satisfactorily and very little formal output has been achieved
- To protect the ESA investment and ensure continued support it has therefore been necessary to evaluate the present scope of work to arrive at a way forward
- This evaluation has now been completed along with a consolidated ESA position which will be presented at the next CCSDS meeting

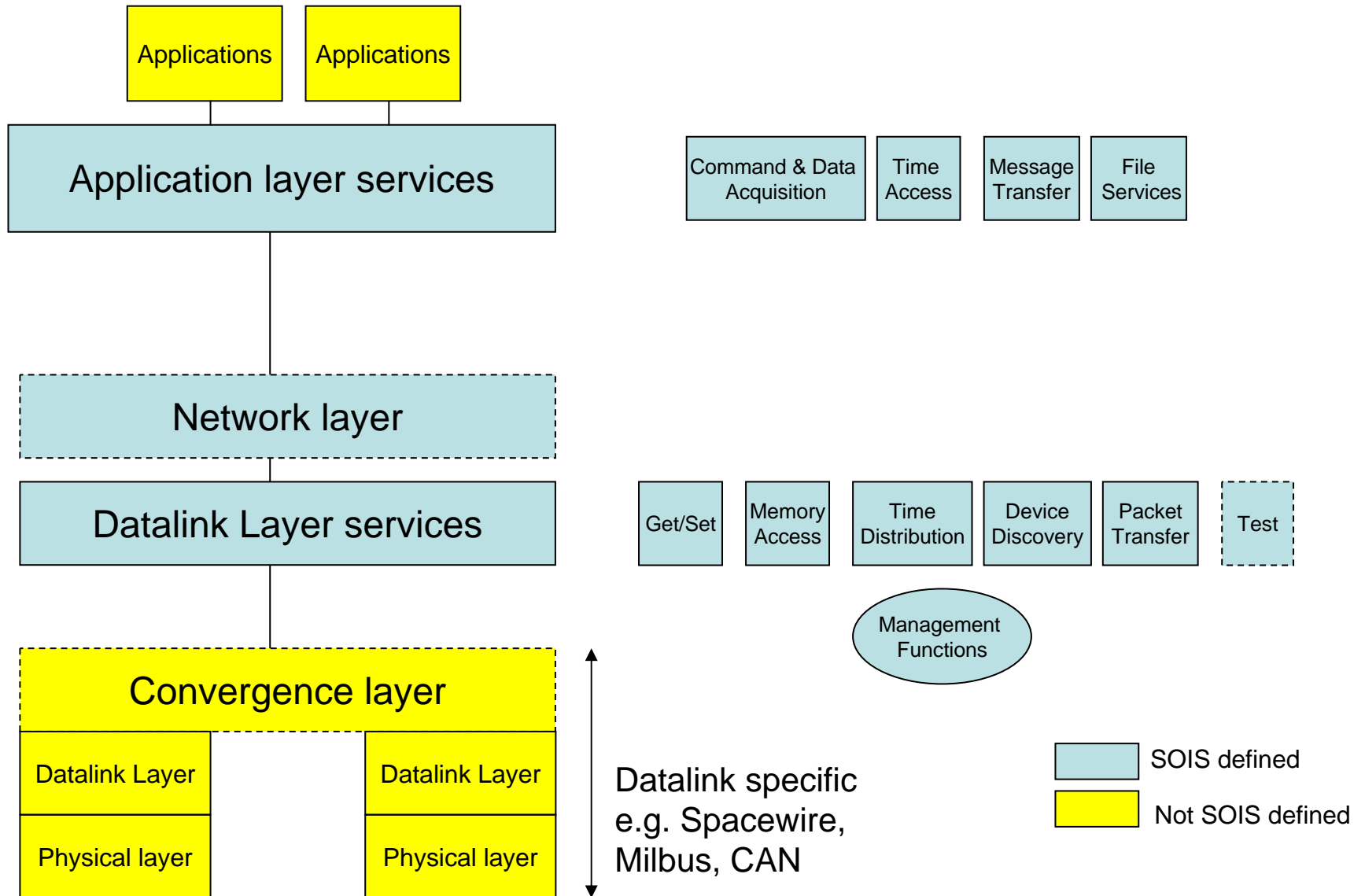
# Main findings

- Overall
  - There is no agreed and published description of the SOIS activity showing the details of the SOIS architecture and how the various outputs fit together to form a consolidated system
  - We do not have a consolidated and pre-prepared ESA position to which the ESA representatives can refer in order to target negotiations within CCSDS in a disciplined fashion.
- Specific
  - The Application layer services are fairly well defined with many red books already available. Progress is being blocked due to the lack of a CCSDS green book and in general a lack of manpower
  - The TCONS network and transport layer services and protocols are not needed
    - Application layer services can be mapped directly to the datalink services
    - Transport layer functions are not required and any time critical aspects are best handled in the datalink layer
    - A network layer is not normally required but, if necessary, existing network layer services are adequate
  - The OBL services need to be extended beyond the existing send and receive data. The work should be limited to defining data services with any convergence functions be developed by the developer

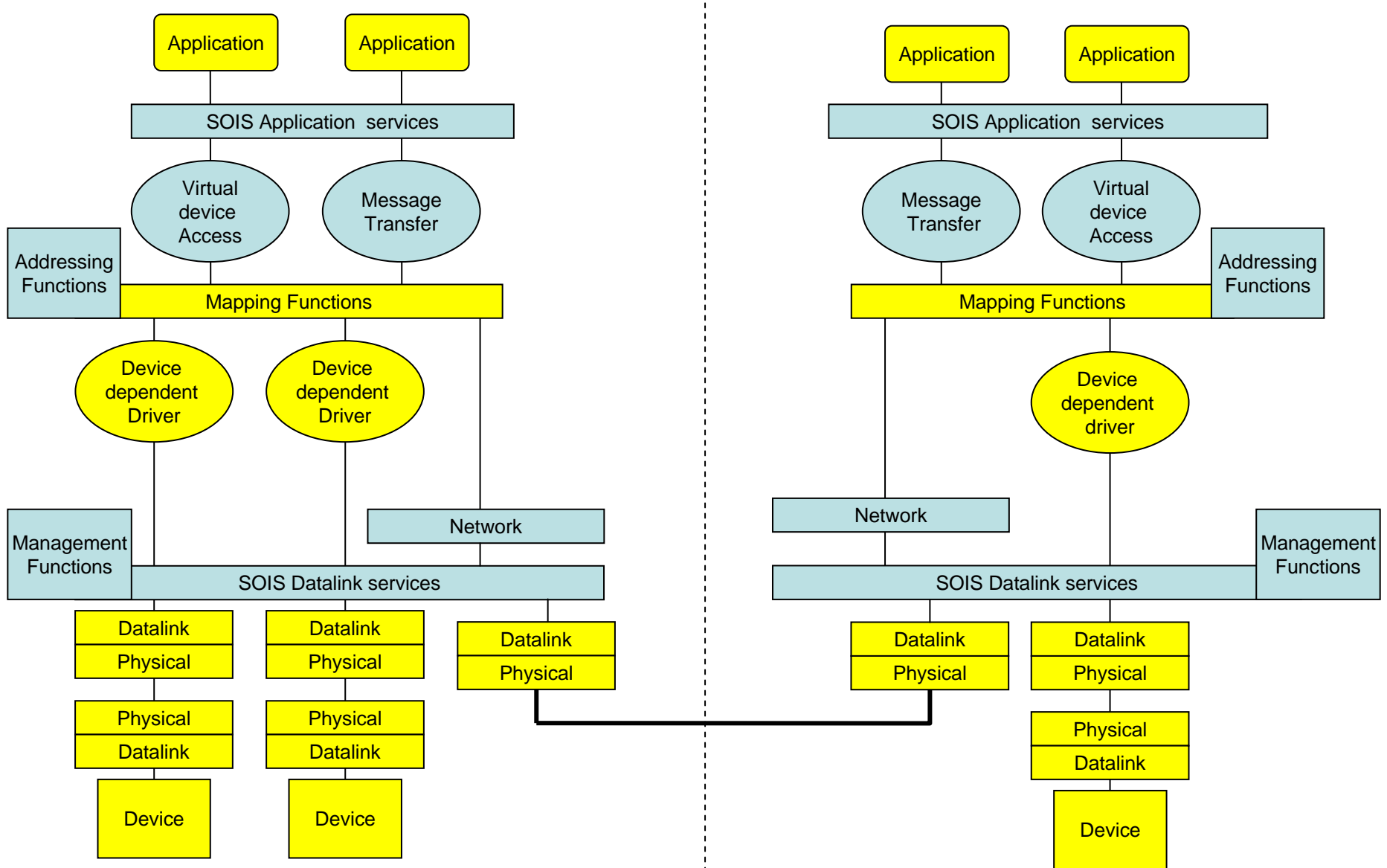
# SOIS Brief

- SOIS were given a very simple Task:
  - Standardise the complete spacecraft communications architecture
  - Make it operate over all commonly used interfaces
  - And just for good measure, perform the work in a large international group
- Not surprisingly, it was not so simple

# SOIS Stack



# SOIS Overall architecture



# Agreements

- A single green book will be released to the SOIS community next week. This will cover the overall SOIS activity and form the essence of the ESA position to be presented to the CCSDS
- The new approach will be presented at a SOIS plenary along with the prototype implementation confirming its viability
- Each ESA representative will be given a clear brief on the targets to be achieved (already aligned with BNSC)
- The TCONS activity will be proposed to the CESG for formal closure
- The majority of the SOIS activities should be finalised by the end of 2006 with completion in mid 2007