

2.2.1.1 Interfaces

[return to Fundamental Views](#)

[Interfaces](#) exist between the various independent components of the DIDO and are therefore fundamental to the integration of DIDO components into a system. Bidirectional interfaces are defined between:

- hardware-to-hardware
- hardware-to-software
- hardware-to-human
- software-to-human

Hardware

Hardware interfaces are how the outside world connects to physical devices such as disk drives, monitors, keyboards, internal buses, batteries, [internet](#) ports, cameras, microphones, and [sensors](#). These interfaces are described by the mechanical, electrical, and logical signals at the interface and the [protocol](#) for sequencing them.¹⁾ Fortunately, most of these interfaces are integrated into computer [nodes](#) and do not need to be addressed here. For example, the data from the sensor can be considered an [Immutable Data Object](#) and thus sent through the node network, but the actual acquisition of that data is a detail for nodes to implement.

Refer to Section [2.2.1.1.1 Platform Interface](#) for more detail on Hardware interfaces.

Software

Software interfaces isolate the underlying complexity of functionality provided by a software product or package through the use of an [Application Programming Interface \(API\)](#). The end result of this is to treat software products or packages as opaque blackboxes.

Refer to Section [2.2.1.1.2 Software Interfaces](#) for more details on this subject.

Human

Human interfaces within DIDOs are bidirectional and primarily cover the software-to-human components. A software [Application Programming Interface \(API\)](#), although defining interactions between people and software, is classified as a software interface and not a human interface. Human interfaces cover the human interaction between the humans and an operational system; examples include mouse, keyboard, trackpad, and windows presented to users of the system.

Refer to Section [2.2.1.1.3 Human Interfaces](#) for more details on this subject.

1)

Govindarajalu, B. (2008). "3.15 Peripheral Interfaces and Controllers - OG". IBM PC And Clones: Hardware, Troubleshooting And Maintenance. Tata McGraw-Hill Publishing Co. Ltd. pp. 142-144. ISBN 9780070483118. Retrieved 15 June 2018.

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