The ATLAS Distributed Analysis (ADA) system is being developed to support the experiment's analysis activities, providing for a worldwide user community that must access distributed data and resources with full provenance tracking through an easy-to-use interface.

ADA is required to work across major Grid developments such as LCG (LHC Computing Grid), Grid3 (US Application Grid Laboratory for Science), NorduGrid (evolved from the Nordic Testbed for wide area computing and data handling) and emerging new systems, such as gLite (lightweight middleware for Grid computing) and OSG (Open Science Grid).

ADA is based on a client-service architecture, where the main components (Fig. 1) are analysis services that manage processing, catalogue services that record data and its provenance, clients through which the user interacts with the services, and an Abstract Job Definition Language (AJDL) that is used to format messages between clients and services. ADA also has additional components that deal with data transfer, software management and monitoring.

ADA is actively evolving and there is much development currently underway to integrate ADA with the second generation ATLAS Production System and the ATLAS Data Management System. The product of the synergy of projects is PanDA (Production and Distributed Analysis) which will establish a unified approach to production and analysis activities in ATLAS.