Three important developments in the history of the AI planning and search.

 "Planning and search" is a growing and increasingly more relevant aspect of AI dedicated to using mathematical computations based on space-search theorem, to find optimal solutions to task scheduling and planning in project management. Such planning may involve very complicated and extensive projects such as large-scale manufacturing and construction and freight/cargo transportation.

Use of AI "Planning and search" is quite relatively recent, the earliest being the rather ambitious universal problem solver machine in 1959 called GPS, the General Problem Solver (Newell and Simon, 1961). The bedrock of the GPS was the idea that if a problem can be specified by a series of finite well-formed formulas then the entire problem can be solved by specific logical procedures and mathematical manipulations. The idea of the unit of clauses or well-formed formulas was first proposed by logician Alfred Horn in 1951 (Nilsson, N. 2009) although this was standing of the shoulders of much earlier logicians such as Wilhelm Leibniz (1646–1716), George Boole (1847), Schroder (1877) and Gottlob Frege (1879). (Norvig, P and Russell, S. 2010)

The first real first major planning system was **STRIPS** (Fikes and Nilsson, 1971) which stands for Stanford Research Institute Problem Solver was based on the GPS. The main success of STRIPS was the introduction of a "classical" representation language (Norvig, P and Russell, S. 2010).

Introduction of the Problem Domain Description Language, or **PDDL** (Ghallab et al., 1998), was a significant breakthrough. This is because it had a computer parse-able standardised syntax, thus delivering the benefits of using it in-line with existing computer programming languages.

There have been numerous further developments in AI Planning and search, however the afore-mentioned **GPS, STRIPS and PDDL** developments are the scope of this article. What can be mainly concluded is ii) each one has built upon the other and i) the overall trend of the progress is from theoretical to practical programming with ever more relevant application to real life processes and problems.

References

Fikes, R. E. and Nilsson, N. J. (1971). STRIPS: A new approach to the application of theorem proving to problem solving. AIJ, 2(3–4), 189–208.

Ghallab, M., Howe, A., Knoblock, C. A., and McDermott, D. (1998). PDDL—The planning domain definition language. Tech. rep. DCS TR-1165, Yale Center for Computational Vision and Control.

Newell, A. and Simon, H. A. (1961). GPS, a program that simulates human thought. In Billing, H. (Ed.), Lernende Automaten, pp. 109–124. R. Oldenbourg.

Nilsson, N (2009), Artificial Intelligence: a new synthesis. Morgan Kaufmann Publishers, Inc. San Francisco, California.

Norvig, P and Russell, S. (2010). Artificial Intelligence A Modern Approach, third Edition.