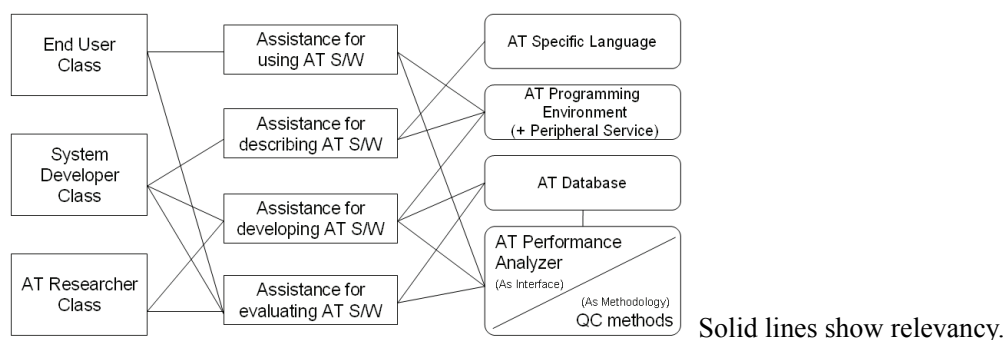


Software tools to assist in automatic tuning

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In this paper, we talk about a model of tools to assist automatic tuning (AT) and some tools are introduced [1]. The following figure shows the designing process of assist tools.



+ User classes

- End User: The person who uses the software having AT functions.
- System Developer: The person who develops the software having AT functions.
- AT Researcher: The person who researches the AT itself and who develops new AT technology.

+ Each user's requirements and assist services to them

- Assistance for {using, describing, developing, evaluating} Automatic Tuning Software (S/W).

+ Outline of assist tools to AT

The purpose of these tools is efficiency improvement, measurement, analysis and evaluation of the performance.

- "AT Specific Language" is the starting point of the AT research. ABCLibScript is one of typical examples [2].
- "AT Programming Environment" brings higher efficiency for developing AT code and "Its Peripheral Service" helps AT users' activity. VizABCLib provides these tools [2].
- "AT Database" saves performance data and characteristic information on algorithms. These data are useful to select better algorithm [3].
- "AT Performance Analyzer" provides the analysis result by text or information visualization. AT users in any class analyze and evaluate the dispersion in performance [2, VizABCLib][3].
- "QC technique" is one of the methodologies to carries out analysis evaluation of the AT performance, and it contains QC7, N7, statistics technique and a multivariate analysis [3].

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[2] ABCLib, <http://www.abc-lib.org/>

[3] Itoh, S. and Sugihara, M., A Quality Management Approach for Systematic Performance Evaluations of Numerical Solving Process of Linear Equations, Japan SIAM annual meeting, The University of Tokyo, Kashiwa, Sep., (2008).