

EXHIBIT E PART II

Claims	Prior Art References
	<p>Kriegsman '93 discloses interpreting the electronic message using a rule base and case base knowledge engine. E.g., the system interprets received input problems using rules and case-based reasoning (see, e.g., 18-20, 24-25).</p> <p>Simoudis '92 discloses interpreting the electronic message using a rule base and case base knowledge engine. E.g., the system interprets input problems received from a user in a help-desk environment using rules and case-based reasoning (see, e.g., 7-8).</p> <p>Hall '96 discloses interpreting the electronic message using a rule base and case base knowledge engine. E.g., the system interprets received queries submitted to help-desk lists using rules and case-based reasoning (see, e.g., 107-108, 110-112).</p> <p>Rissland '87 discloses interpreting the electronic message using a rule base and case base knowledge engine. E.g., the system interprets received input fact patterns using rules and case-based reasoning (see, e.g., 60, 63-64).</p> <p>Tso '201 discloses interpreting the electronic message using a rule base and case base knowledge engine. E.g., the system interprets received draft email messages using rules and previous cases (see, e.g., Abstract, 1:56-64, 2:59-67, 4:32-6:51).</p> <p>Hall '679 discloses interpreting the electronic message using a rule base and case base knowledge engine. E.g., the system interprets received queries submitted to help-desk lists using rules and case-based reasoning (see, e.g., Abstract, 8:1-27, 9:50-63, 10:7-50).</p> <p>Kowalski '91 discloses receiving interpreting the electronic message using a rule base and case base knowledge engine. E.g., the system interprets received fact patterns using rules and case-based reasoning (see, e.g., 21, 22-23, 29).</p> <p>Rissland '95 discloses interpreting the electronic message using a rule base and case base knowledge engine. E.g., a hybrid system (Fig. 1) first performs standard case-based reasoning (CBR) by matching the problem case to cases from the case base, then uses the</p>

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	<p>matched cases to generate a rule for searching for additional documents via an information-retrieval (IR) system (see, e.g., p. 53, fifth paragraph in left column). Also e.g., top case matches are used to generate a rule, such as a keyword-based query, for searching documents (see, e.g., p. 55, second and third paragraphs in left column).</p> <p>Hill '95 discloses interpreting the electronic message using a rule base and case base knowledge engine. E.g., rules applied to received email, such as adding unseen movies to recommendation pool and case-matching performed, such as matching user's movie ratings to ratings of other users in a case base; further rule application includes evaluating unseen movies based on case matches to develop recommendations (see, e.g., p. 197, second and third paragraphs in "The Email Interface" section).</p> <p>Allen '664 discloses interpreting the electronic message using a rule base and case base knowledge engine. E.g., a "case-based reasoning system which is smoothly integrated into a rule-based reasoning system, thus coordinating case-based reasoning techniques and rule-based reasoning techniques in a unified automated reasoning system" (see, e.g., Abstract, 1:58-2:2, 2:45-59, and FIG. 1). Also e.g., the software inference engine 111 interprets the electronic message to proceed to an action using the case base 104 and rule base 102 (see, e.g., 2:61-63 and 7:8-16).</p> <p>Rissland '89 discloses interpreting the electronic message using a rule base and case base knowledge engine. E.g., a combination of case-based and rule-based reasoning is used to solve the problem of statutory interpretation of a legal rule (see, e.g., sections 4 and 5, p. 526-529).</p> <p>Golding '91 discloses interpreting the electronic message using a rule base and case base knowledge engine. E.g., a pronunciation of a name is determined by matching cases in a case base and by applying pronunciation rules from a rule base (see, e.g., p. 25, first paragraph in section 3, and section 2 generally).</p> <p>Watson '94 discloses interpreting the electronic message using a rule base and case base knowledge engine. E.g., looking for prominent differences between a retrieved case and</p>

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	<p>the current case contained in the electronic message, and applying rules that take those differences into account when suggesting a solution (see, e.g., p. 9, "Adaptation" section). Also e.g., answers to questions are used to narrow the number of matching cases (see, e.g., p. 11, fifth paragraph).</p> <p>Aamodt '94 discloses interpreting the electronic message using a rule base and case base knowledge engine. E.g., a case from a case base is retrieved based on a match with the problem description, and general domain-dependent knowledge (e.g., rules) is also used (see, e.g., p. 6, col. 2, first and second full paragraphs). Also e.g., integration of case-based and rule-based reasoning (see, e.g., pp. 15-16, section 9).</p> <p>Allen '218 discloses interpreting the electronic message using a rule base and case base knowledge engine. E.g., a software interference engine 125 for reasoning using a set of cases 126 in a case base 127 and a set of rules 128 in a rule base 129 (see, e.g., 5:8-12 and FIG. 1).</p> <p>Fathi-Torbaghan '95 discloses interpreting the electronic message using a rule base and case base knowledge engine. E.g., the system uses rule-based reasoning (RBR) and case-based reasoning (CBR) in the frame of a hybrid fuzzy expert system for diagnostic support (see, e.g., p. 2425, left column, third paragraph). Also e.g., Categorical reasoning (i.e. rule-based reasoning) and Special case reasoning (i.e., case-based reasoning) are used to process the input (see, e.g., p. 2425, right column and p. 2426, left column).</p> <p>Jurisica '96 discloses interpreting the electronic message using a rule base and case base knowledge engine. E.g., the system matches an input to a case from a case base and uses rules to determine which attributes are used for accurate classification of the input (see, e.g., p. 2-3, "The TA3 System" section).</p> <p>Lewis '481 discloses interpreting the electronic message using a rule base and case base knowledge engine. E.g., applies "case-based reasoning" to trouble ticket resolution, retrieving one or more similar trouble tickets from a case library of trouble tickets (see, e.g., 6:33-50). Also e.g., rules in a rules database for determining matching cases (see,</p>

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	<p>e.g., 7:60-62, 8:3-6, and FIG. 5).</p> <p>Manago '93 discloses interpreting the electronic message using a rule base and case base knowledge engine. E.g., integrating induction and case-based reasoning (see, e.g., p. 2, first paragraph of section 3). Also e.g., a decision tree produced by induction can speed up the consultation by the case-based reasoner (see, e.g., p. 4, first paragraph in section 5).</p> <p>Simoudis '206 discloses interpreting the electronic message using a rule base and case base knowledge engine. E.g., forming a query (i.e., determining features that are most important) using semantic knowledge stored in a semantic knowledge database, or rule base (see, e.g., 3:41-48). Also e.g., retrieving cases from the case library 12, or case base, using the semantic knowledge (see, e.g., 3:50-52). Also see 6:39-57.</p> <p>Watson '96 discloses interpreting the electronic message using a rule base and case base knowledge engine. E.g., CasePoint supports a rule-file to improve the speed of case matching (see, e.g., p. 4, paragraph before "Eclipse" section).</p> <p>Surma '95 discloses interpreting the electronic message using a rule base and case base knowledge engine. E.g., if a new case is covered by a rule in a rule base, then apply a solution using the rule, otherwise find the most similar case in a case base, and apply a solution using the case (see, e.g., p. 1, "Introduction" section; also see p. 3, section 3.1, and Fig. 1).</p> <p>Allen '94 discloses interpreting the electronic message using a rule base and case base knowledge engine. E.g., retrieving closest-matching cases stored in a case base and using the current problem and closest-matching cases to generate a solution via adaptation (i.e., rules) (see, e.g., p. 40, top paragraph – "Retrieval" and "Adaptation"). Also e.g., rule-based methods for retrieving cases (see, e.g., p. 40, left column, last full paragraph). Also e.g., hybrid problem-solving architectures combining cases, rules, and models (see, e.g., p. 40, second column, bottom paragraph).</p> <p>Fox '95 discloses interpreting the electronic message using a rule base and case base</p>

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	<p>knowledge engine. E.g., a case-based planner and model based reasoner that uses rules, the planner and reasoner determining directions from an origin to a destination (see, e.g., Figs. 3.3, 3.9, and 3.10, and chapter 3 generally).</p> <p>Leake '96 discloses interpreting the electronic message using a rule base and case base knowledge engine. E.g., integration of case-based and rule-based reasoning (see, e.g., p. 18, "Integrated systems" section).</p> <p>Slator '91 discloses interpreting the electronic message using a rule base and case base knowledge engine. E.g., data values from the form are evaluated (i.e., rules are applied) and features, or indicators, are associated with the case. Using the features, or indicators, the case is matched against a case base of businesses (see, e.g., p. 17, last paragraph).</p> <p>Golding '96 discloses interpreting the electronic message using a rule base and case base knowledge engine. E.g., using rules to obtain a preliminary answer for a problem in the electronic message, and using cases from a case base to handle exceptions to the rules (see, e.g., Abstract and p. 218-220, section 2.1).</p> <p>Sassin '435 discloses interpreting the electronic message using a rule base and case base knowledge engine. E.g., a content analyzer analyzes the message using semantic analysis and rule-based decision-making to identify skills (see, e.g., 6:42-47). Also e.g., determining a "best-fit" between the identified skills and an agent using a database (i.e., case base) of agent's resumes (see, e.g., 7:19-40).</p> <p>Skalak '91 discloses interpreting the electronic message using a rule base and case base knowledge engine. E.g., interleaving case-based and rule based processing (see, e.g., p. 9, section 5, first paragraph). Also, e.g., retrieving cases from a case base based on rules (see, e.g., p. 9, paragraph continued from previous page).</p> <p>Chi '91 discloses interpreting the electronic message using a rule base and case base knowledge engine. E.g., determine if the new case matches a previous case in the case base; if not, then generalize an old case based on rules (see, e.g., p. 259, left column, and</p>

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	<p>Fig. 2).</p> <p>Acom '92 discloses interpreting the electronic message using a rule base and case base knowledge engine. E.g., determine matching cases from a case base and using the input problem and domain-specific rules (see, e.g., p. 8, paragraph continued from previous page; also p. 14, Fig. 9).</p> <p>Whitehead '95 discloses receiving interpreting the electronic message using a rule base and case base knowledge engine. E.g., the system interprets received input questions using rules and cases (see, e.g., abstract, 140).</p> <p>Chang '96 discloses receiving interpreting the electronic message using a rule base and case base knowledge engine. E.g., the system interprets received input problem descriptions using rules and cases (see, e.g., abstract, 116-119).</p> <p>Nguyen '93 discloses receiving interpreting the electronic message using a rule base and case base knowledge engine. E.g., the system interprets received input problem descriptions using rules and cases (see, e.g., 50, 55-56, 58).</p> <p>Rice '96 discloses interpreting the electronic message using a rule base and case base knowledge engine. E.g., combining case-based retrieval with rules for email interpretation (see, e.g., p. 1509-1510, "EZ Reader Hybrid Knowledge Base Approach" section; also see, e.g., example of hybrid processing on p. 1513).</p> <p>Yoshiura '689 discloses interpreting the electronic message using a rule base and case base knowledge engine. E.g., searches for a solution case similar to the problem case (see, e.g., 4:27-30). Also e.g., using rules to calculate a portion of the case that is not solved (see, e.g., 5:32-56).</p> <p>Nguyen '001 discloses interpreting the electronic message using a rule base and case base knowledge engine. E.g., input problem is matched against a case-based knowledge base and information in input problem is reconfigured based on rules (see, e.g., Abstract and</p>

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	<p>4:30 – 5:22).</p> <p>Lenz '93 discloses interpreting the electronic message using a rule base and case base knowledge engine. E.g., model-based and case-based reasoning within a hybrid architecture. Also, integration of domain-specific rules with case retrieval. (see, e.g., Abstract and p. 204-205).</p> <p>Venkataraman '93 discloses interpreting the electronic message using a rule base and case base knowledge engine. E.g., rule-based and case-based techniques are used to classify objects appearing in the image contained in the electronic message (see, e.g., p. 410-411).</p> <p>Dolan '677 discloses interpreting the electronic message using a rule base and case base knowledge engine. (see e.g. Abstract; Col. 2:50-3:18; Col. 4:44-5:46).</p> <p>Bauman '524 discloses interpreting the electronic message using a rule base and case base knowledge engine. (see e.g. Abstract; Col. 12:1-18:29, Fig 4).</p> <p>Nguyen '823 discloses interpreting the electronic message using a rule base and case base knowledge engine. (see e.g. Abstract; Col. 7:33-8:66, Figs. 1, 3).</p> <p>Ho '302 discloses interpreting the electronic message using a rule base and case base knowledge engine. (see e.g. Abstract; Col. 3:30-50; Col. 4:57-5:12; Col. 20:11-61, Figs 1, 9, 10).</p> <p>Redfern '914 discloses interpreting the electronic message using a rule base and case base knowledge engine. (see e.g. Abstract; Col. 2:47-3:45; Col. 4:8-11:30; Fig 1).</p> <p>Nitta '92 discloses interpreting the electronic message using a rule base and case base knowledge engine. (see e.g. pp. 1115-1122)</p>
(c) retrieving one or more predetermined responses corresponding to the interpretation	Auriol '95 discloses retrieving one or more predetermined responses corresponding to the interpretation of the electronic message from a repository for automatic delivery to the

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<p>of the electronic message from a repository for automatic delivery to the source.</p>	<p>source. E.g., the system was designed to be used in a help-desk environment to guide support technicians. (see, e.g., pp. 372, 378-9).</p> <p>Portinale '95 discloses retrieving one or more predetermined responses corresponding to the interpretation of the electronic message from a repository for automatic delivery to the source. E.g., the system retrieves predetermined solutions (see, e.g., Abstract, 285-88).</p> <p>Rissland '91 discloses retrieving one or more predetermined responses corresponding to the interpretation of the electronic message from a repository for automatic delivery to the source. E.g., the system generates an argument or explanation in response to received fact pattern based on case-based and rule-based support (see, e.g., Abstract, 839, 853, 855, 867-976).</p> <p>Lopez '93 discloses retrieving one or more predetermined responses corresponding to the interpretation of the electronic message from a repository for automatic delivery to the source. E.g., Lopez provides diagnostic results using rules and case-based reasoning interpretation (see, e.g., 97, 103-4).</p> <p>Rissland '93 discloses retrieving one or more predetermined responses corresponding to the interpretation of the electronic message from a repository for automatic delivery to the source. E.g., the system uses rule based a case based reasoning to generate reports such as diagnostic medical reports (see, e.g., Abstract, 66-67).</p> <p>Vossos '91 discloses retrieving one or more predetermined responses corresponding to the interpretation of the electronic message from a repository for automatic delivery to the source. E.g., the system retrieves resolved cases (see, e.g., Abstract, 34-35, 36-38).</p> <p>Dutta '91 discloses retrieving one or more predetermined responses corresponding to the interpretation of the electronic message from a repository for automatic delivery to the source. E.g., the system retrieves predetermined responses relevant to the input (see, e.g., Abstract, 282-3, 290-5).</p>

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	<p>Skalak '92 discloses retrieving one or more predetermined responses corresponding to the interpretation of the electronic message from a repository for automatic delivery to the source. E.g., the system perform statutory interpretation on received input case using rules and case based reasoning (see, e.g., Abstract, 3-4, 35-37).</p> <p>Tanaka '985 discloses retrieving one or more predetermined responses corresponding to the interpretation of the electronic message from a repository for automatic delivery to the source. E.g., the system obtains the final conclusion after processing input fact data using rule processing and case processing modules (see, e.g., Abstract, 14:57-15:8).</p> <p>Allen 93/03558 discloses retrieving one or more predetermined responses corresponding to the interpretation of the electronic message from a repository for automatic delivery to the source. E.g., the system retrieves a voice response message and selection menu for the caller and may flag the case for possible human intervention (see, e.g. Abstract, 3, 14).</p> <p>Allen 94/07569 discloses retrieving one or more predetermined responses corresponding to the interpretation of the electronic message from a repository for automatic delivery to the source. E.g., the system processes queries lexically via tan-and-segment-text process and using a case-based reasoning process and generates a predefined response (see, e.g., Abstract 2-4, 6, 9-15).</p> <p>Ho '771 discloses retrieving one or more predetermined responses corresponding to the interpretation of the electronic message from a repository for automatic delivery to the source. E.g., the system receives and processes user's questions using rules and previous questions submitted by the user and retrieves answers to the question and relevant subject matter to be reviewed by the user (see, e.g., Abstract, Fig. 2, 3:12-58, 5:45-55).</p> <p>Popple '96 discloses retrieving one or more predetermined responses corresponding to the interpretation of the electronic message from a repository for automatic delivery to the source. E.g., the system retrieves predetermined responses after processing input fact patterns using rules and case-based reasoning (see, e.g., 44-46, Chapter 3).</p>

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	<p>Allen 92/01835 discloses retrieving one or more predetermined responses corresponding to the interpretation of the electronic message from a repository for automatic delivery to the source. E.g., the system retrieves predefined solutions to present to the user (see, e.g., Abstract, 4-7).</p> <p>Kriegsman '93 discloses retrieving one or more predetermined responses corresponding to the interpretation of the electronic message from a repository for automatic delivery to the source. E.g., the system interprets received input problems using rules and case-based reasoning and retrieves predefined responses such as diagnosis (see, e.g., 18-20, 24-25).</p> <p>Simoudis '92 discloses retrieving one or more predetermined responses corresponding to the interpretation of the electronic message from a repository for automatic delivery to the source. E.g., the system interprets input problems received from a user in a help-desk environment using rules and case-based reasoning and retrieves predetermined solutions to the problem (see, e.g., 7-8).</p> <p>Hall '96 discloses retrieving one or more predetermined responses corresponding to the interpretation of the electronic message from a repository for automatic delivery to the source. E.g., the system interprets received queries submitted to help-desk lists using rules and case-based reasoning and retrieves predefined answers to the queries (see, e.g., 107-108, 110-112).</p> <p>Rissland '87 discloses retrieving one or more predetermined responses corresponding to the interpretation of the electronic message from a repository for automatic delivery to the source. E.g., the system interprets received input fact patterns using rules and case-based reasoning to retrieve predefined cases and arguments (see, e.g., 60, 63-64).</p> <p>Tso '201 discloses retrieving one or more predetermined responses corresponding to the interpretation of the electronic message from a repository for automatic delivery to the source. E.g., the system interprets received draft email messages using rules and previous cases and retrieves predefined templates (see, e.g., Abstract, 1:56-64, 2:59-67, 4:32-6:51).</p>

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	<p>Hall '679 discloses retrieving one or more predetermined responses corresponding to the interpretation of the electronic message from a repository for automatic delivery to the source. E.g., the system interprets received queries submitted to help-desk lists using rules and case-based reasoning and retrieves predefined answers to the queries (see, e.g., Abstract, 8:1-27, 9:50-63, 10:7-50).</p> <p>Kowalski '91 discloses retrieving one or more predetermined responses corresponding to the interpretation of the electronic message from a repository for automatic delivery to the source. E.g., the system interprets received fact patterns using rules and case-based reasoning and retrieves predefined reports (see, e.g., 21, 22-23, 29).</p> <p>Rissland '95 discloses retrieving one or more predetermined responses corresponding to the interpretation of the electronic message from a repository for automatic delivery to the source. E.g., outputting a set of documents relevant to problem case (see, e.g., Fig. 1; p. 54, first paragraph in section 3; and p. 56, first paragraph in left column).</p> <p>Hill '95 discloses retrieving one or more predetermined responses corresponding to the interpretation of the electronic message from a repository for automatic delivery to the source. E.g., emailing back to the user predetermined responses such as recommended movies (see, e.g., p. 197 and sample email responses at p. 197-198).</p> <p>Allen '664 discloses retrieving one or more predetermined responses corresponding to the interpretation of the electronic message from a repository for automatic delivery to the source. E.g., "[i]n the case-matching step 202, the application 601 may attempt to match the customer problem 605 to one or more cases in the case base 104 using just the description 606 of the customer problem 605. If the match quality 315 of the case 105 which are matched is high, the application 601 may perform the best-case step 203 and following steps. The action 309 which the application 601 performs is to provide an advice message 607 to the customer service representative 602, who may then provide advice to the customer 604." (see, e.g., 9:21-29).</p>

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	<p>Rissland '89 discloses retrieving one or more predetermined responses corresponding to the interpretation of the electronic message from a repository for automatic delivery to the source. E.g., the analysis of case, including argument and explanation with supporting cases, rules, facts highlighted (see, e.g., Fig. 1).</p> <p>Golding '91 discloses retrieving one or more predetermined responses corresponding to the interpretation of the electronic message from a repository for automatic delivery to the source. E.g., returning a string of phonetic segments representing the pronunciation of a name (see, e.g., p. 25, first paragraph in section 3).</p> <p>Watson '94 discloses retrieving one or more predetermined responses corresponding to the interpretation of the electronic message from a repository for automatic delivery to the source. E.g., cases are retrieved and a list of ranked solutions is generated from the cases and sent to the user (see, e.g., p. 11, fifth paragraph).</p> <p>Aamodt '94 discloses retrieving one or more predetermined responses corresponding to the interpretation of the electronic message from a repository for automatic delivery to the source. E.g., a proposed solution to the initial description of the problem is applied to the real world environment or evaluated by a teacher (see, e.g., p. 6, col. 2, first full paragraph; also see Fig. 1).</p> <p>Allen '218 discloses retrieving one or more predetermined responses corresponding to the interpretation of the electronic message from a repository for automatic delivery to the source. E.g., a help-desk system 603 provides the stimulus message 104 to the autonomous agent 101. The autonomous agent 101 generates the action message 106 for the help desk system 603 (see, e.g., 8:17-21 and FIG. 6).</p> <p>Fathi-Torbaghan '95 discloses retrieving one or more predetermined responses corresponding to the interpretation of the electronic message from a repository for automatic delivery to the source. E.g., medical diagnoses and similar cases are given to the user (see, e.g., p. 2426, left column, first and second paragraphs).</p>

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	<p>Jurica '96 discloses retrieving one or more predetermined responses corresponding to the interpretation of the electronic message from a repository for automatic delivery to the source. E.g., a letter classification (see, e.g., p. 4, third paragraph). Also e.g., retrieving similar cases (see, e.g., p. 2, second and third paragraphs).</p> <p>Lewis '481 discloses retrieving one or more predetermined responses corresponding to the interpretation of the electronic message from a repository for automatic delivery to the source. E.g., the fault resolution may be transmitted via communications link 36 for use on network 8 (see, e.g., 5:45-47).</p> <p>Manago '93 discloses retrieving one or more predetermined responses corresponding to the interpretation of the electronic message from a repository for automatic delivery to the source. E.g., the classification result (see, e.g., p. 2, section 3, second paragraph; and see p. 3, first paragraph).</p> <p>Simoudis '206 discloses retrieving one or more predetermined responses corresponding to the interpretation of the electronic message from a repository for automatic delivery to the source. E.g., justifiably relevant cases are returned to the user of the system (see, e.g., Abstract and FIG. 1, "to user").</p> <p>Watson '96 discloses retrieving one or more predetermined responses corresponding to the interpretation of the electronic message from a repository for automatic delivery to the source. E.g., a list of ranked solutions with likelihood values is generated from cases and sent to the user (see, e.g., p. 4, description of "Tester").</p> <p>Surma '95 discloses retrieving one or more predetermined responses corresponding to the interpretation of the electronic message from a repository for automatic delivery to the source. E.g., classification results (see, e.g., p. 7, Table 3 and explanation). Also e.g., problem solution (see, e.g., p. 1, "Introduction" section).</p> <p>Allen '94 discloses retrieving one or more predetermined responses corresponding to the interpretation of the electronic message from a repository for automatic delivery to the</p>

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	<p>source. E.g., retrieving cases to generate a solution to the current problem (see, e.g., p. 40, top paragraph – “Retrieval” and “Adaptation”). Also e.g., retrieving the most similar cases and presenting them to a customer service analyst (see, e.g., p. 41, left column, second full paragraph).</p> <p>Fox ‘95 discloses retrieving one or more predetermined responses corresponding to the interpretation of the electronic message from a repository for automatic delivery to the source. E.g., the system generates a plan for moving from start to the goal, described in high-level plan steps. This plan is then provided to a simulated world for execution (see, e.g., p. 47, first and second paragraphs).</p> <p>Leake ‘96 discloses retrieving one or more predetermined responses corresponding to the interpretation of the electronic message from a repository for automatic delivery to the source. E.g., the system presents the user with similar prior questions and answers (see, e.g., p. 17, first full paragraph).</p> <p>Slator ‘91 discloses retrieving one or more predetermined responses corresponding to the interpretation of the electronic message from a repository for automatic delivery to the source. E.g., a client analysis report showing the results of case-based matching (see, e.g., Fig. 4 on p. 20).</p> <p>Golding ‘96 discloses retrieving one or more predetermined responses corresponding to the interpretation of the electronic message from a repository for automatic delivery to the source. E.g., an output pronunciation of a name (see, e.g., p. 237, first full paragraph).</p> <p>Sassin ‘435 discloses retrieving one or more predetermined responses corresponding to the interpretation of the electronic message from a repository for automatic delivery to the source. E.g., determining an appropriate document from a database of documents to be sent in response to the incoming communication (see, e.g. 12:55-62). Also e.g., the response can be an email (see, e.g., 13:11).</p> <p>Skalak ‘91 discloses retrieving one or more predetermined responses corresponding to the</p>

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	<p>interpretation of the electronic message from a repository for automatic delivery to the source. E.g., retrieving cases from the case base, present cases as arguments (see, e.g., p. 9, paragraph continued from previous page).</p> <p>Chi '91 discloses retrieving one or more predetermined responses corresponding to the interpretation of the electronic message from a repository for automatic delivery to the source. E.g., a case from the case base is retrieved based on the new case (see, e.g., p. 259, left column, and Fig. 2).</p> <p>Acom '92 discloses retrieving one or more predetermined responses corresponding to the interpretation of the electronic message from a repository for automatic delivery to the source. E.g., matching cases are retrieved and displayed (see, e.g., p. 8, first and second paragraphs, and Fig. 4 on p. 9).</p> <p>Whitehead '95 discloses retrieving one or more predetermined responses corresponding to the interpretation of the electronic message from a repository for automatic delivery to the source. E.g., the system interprets received input questions using rules and cases and retrieves predetermined answers (see, e.g., abstract, 140).</p> <p>Chang '96 discloses retrieving one or more predetermined responses corresponding to the interpretation of the electronic message from a repository for automatic delivery to the source. E.g., the system interprets received input problem descriptions using rules and cases and retrieves predetermined response (see, e.g., abstract, 116-119).</p> <p>Nguyen '93 discloses retrieving one or more predetermined responses corresponding to the interpretation of the electronic message from a repository for automatic delivery to the source. E.g., the system interprets received input problem descriptions using rules and cases and retrieves predetermined solutions (see, e.g., 50, 55-56, 58).</p> <p>Rice '96 discloses retrieving one or more predetermined responses corresponding to the interpretation of the electronic message from a repository for automatic delivery to the source. E.g., retrieving a prepared reply from a Lotus Notes repository of standard</p>

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	<p>responses (see, e.g., p. 1509, item 3.a. in the “Process Flow” section).</p> <p>Yoshiura '689 discloses retrieving one or more predetermined responses corresponding to the interpretation of the electronic message from a repository for automatic delivery to the source. E.g., displaying solution of solution case (see, e.g., Fig. 1 and 6:64-68).</p> <p>Nguyen '001 discloses retrieving one or more predetermined responses corresponding to the interpretation of the electronic message from a repository for automatic delivery to the source. E.g., locating a procedure to solve the problem (see, e.g., 4:43-51).</p> <p>Lenz '93 discloses retrieving one or more predetermined responses corresponding to the interpretation of the electronic message from a repository for automatic delivery to the source. E.g., selecting the best applicable cases describing past holiday trips and delivering to the user (see, e.g., Abstract and p. 204-205).</p> <p>Venkataraman '93 discloses retrieving one or more predetermined responses corresponding to the interpretation of the electronic message from a repository for automatic delivery to the source. E.g., retrieving similar image cases (see, e.g., p. 413).</p> <p>Dolan '677 discloses retrieving one or more predetermined responses corresponding to the interpretation of the electronic message from a repository for automatic delivery to the source. (see e.g. Col. 6:39-8:29).</p> <p>Bauman '524 discloses retrieving one or more predetermined responses corresponding to the interpretation of the electronic message from a repository for automatic delivery to the source. (see e.g. Col. 31:38-32:36).</p> <p>Nguyen '823 discloses retrieving one or more predetermined responses corresponding to the interpretation of the electronic message from a repository for automatic delivery to the source. (see e.g. Abstract; Col. 7:33-9:31; Figs 1, 2, 3, 4).</p> <p>Ho '302 discloses retrieving one or more predetermined responses corresponding to the</p>

Claims	Prior Art References
	<p>interpretation of the electronic message from a repository for automatic delivery to the source. (see e.g. Abstract; Col. 3:30-50; Col. 17:54-18:8; Figs 1, 9, 10).</p> <p>Redfern '914 discloses retrieving one or more predetermined responses corresponding to the interpretation of the electronic message from a repository for automatic delivery to the source. (see e.g. Abstract; Col. 2:47-3:45; Col. 11:30-16:45; Fig 1).</p> <p>Nitta '92 discloses retrieving one or more predetermined responses corresponding to the interpretation of the electronic message from a repository for automatic delivery to the source. (see e.g. pp. 1116, 1123).</p>
Claim 27	
<p>27. The method of claim 26, wherein the source of the electronic message is not predetermined.</p>	<p>Auriol '95 discloses wherein the source of the electronic message is not predetermined. E.g., the system was designed to receive messages from variety of sources, which were not predetermined (see, e.g., 372, 378-9).</p> <p>Portinale '95 discloses wherein the source of the electronic message is not predetermined. E.g., the system receives input cases from variety of sources (see, e.g., Abstract, 285-88).</p> <p>Rissland '91 discloses wherein the source of the electronic message is not predetermined. E.g., fact patterns are received from not predetermined sources (see, e.g., Abstract, 839, 853, 855, 867-976).</p> <p>Lopez '93 discloses wherein the source of the electronic message is not predetermined. E.g., input information can be received from non-predetermined sources (see, e.g., 97, 103-4).</p> <p>Rissland '93 discloses the source of the electronic message is not predetermined. E.g., input patient symptoms can be received from non-predetermined sources (see, e.g., Abstract, 66-67).</p> <p>Vossos '91 discloses wherein the source of the electronic message is not predetermined.</p>

Claims	Prior Art References
	<p>E.g., the system receives input cases from not predetermined sources (see, e.g., Abstract, 34-35, 36-38).</p> <p>Dutta '91 discloses wherein the source of the electronic message is not predetermined. E.g., the system receives input cases from not predetermined sources (see, e.g., Abstract, 282-3, 290-5).</p> <p>Skalak '92 discloses wherein the source of the electronic message is not predetermined. E.g., the system receives input cases from not predetermined sources (see, e.g., Abstract, 3-4, 35-37).</p> <p>Tanaka '985 discloses wherein the source of the electronic message is not predetermined. E.g., the system receives input cases from not predetermined sources (see, e.g., Abstract, 14:57-15:8).</p> <p>Allen 93/03558 wherein the source of the electronic message is not predetermined. E.g., the system receives input cases from not predetermined sources (see, e.g. Abstract, 3, 14).</p> <p>Allen 94/07569 discloses wherein the source of the electronic message is not predetermined. E.g., the system receives queries from not predetermined sources (see, e.g., Abstract 2-4, 6, 9-15).</p> <p>Ho '771 discloses wherein the source of the electronic message is not predetermined. E.g., the system receives questions from not predetermined sources (see, e.g., Abstract, Fig. 2, 3:12-58, 5:45-55).</p> <p>Popple '96 discloses wherein the source of the electronic message is not predetermined. E.g., the system receives input fact patterns from not predetermined sources (see, e.g., 44-46, Chapter 3).</p> <p>Allen 92/01835 discloses wherein the source of the electronic message is not predetermined. E.g., the system receives input problem from not predetermined sources</p>

Claims	Prior Art References
	<p>(see, e.g., Abstract, 4-7).</p> <p>Kriegsman '93 discloses wherein the source of the electronic message is not predetermined. E.g., the system receives input problem from not predetermined sources (see, e.g., 18-20, 24-25).</p> <p>Manago '93 wherein the source of the electronic message is not predetermined. E.g., no source specified for incoming sponge information (see, e.g., p. 2, section 3).</p> <p>Simoudis '92 discloses wherein the source of the electronic message is not predetermined. E.g., the system receives input problem from not predetermined sources (see, e.g., 7-8).</p> <p>Hall '96 discloses wherein the source of the electronic message is not predetermined. E.g., the system receives queries from not predetermined sources (see, e.g., 107-108, 110-112).</p> <p>Rissland '87 discloses wherein the source of the electronic message is not predetermined. E.g., the system receives queries from not predetermined sources (see, e.g., 60, 63-64).</p> <p>Tso '201 discloses wherein the source of the electronic message is not predetermined. E.g., the system receives email messages from not predetermined sources (see, e.g., Abstract, 1:56-64, 2:59-67, 4:32-6:51).</p> <p>Hall '679 discloses wherein the source of the electronic message is not predetermined. E.g., the system receives queries from not predetermined sources (see, e.g., Abstract, 8:1-27, 9:50-63, 10:7-50).</p> <p>Kowalski '91 discloses wherein the source of the electronic message is not predetermined. E.g., the system receives fact patterns from not predetermined sources (see, e.g., 21, 22-23, 29).</p> <p>Rissland '95 discloses wherein the source of the electronic message is not predetermined.</p>

Claims	Prior Art References
	<p>E.g., message source is not predetermined (see, e.g., Abstract). Also e.g., system is designed to proceed automatically without user-specific information (see, e.g., p. 53, left column, third paragraph); a lawyer inputs the case facts into the system (see, e.g., p. 55, first paragraph in section 4).</p> <p>Hill '95 discloses wherein the source of the electronic message is not predetermined. E.g., the source is any internet participant (see, e.g., p. 197, first paragraph in "The Email Interface" section).</p> <p>Allen '664 discloses wherein the source of the electronic message is not predetermined. E.g., "automated 'help desk'" for a company's customers (see, e.g., 8:64 - 9:1).</p> <p>Rissland '89 discloses wherein the source of the electronic message is not predetermined. E.g., receiving a case for analysis (see, e.g., p. 526, second paragraph in section 3, and FIG. 1).</p> <p>Golding '91 discloses wherein the source of the electronic message is not predetermined. E.g., the incoming message is a person's last name in text form (see, e.g., p. 25, first paragraph in section 3).</p> <p>Watson '94 discloses wherein the source of the electronic message is not predetermined. E.g., the message is sent by an unspecified user (see, e.g., p. 11, fifth paragraph).</p> <p>Aamodt '94 discloses wherein the source of the electronic message is not predetermined. E.g., an initial description of a problem (the electronic message) is received from an unspecified source (see, e.g., p.6, col. 2, first full paragraph; also see Fig. 1).</p> <p>Allen '218 discloses wherein the source of the electronic message is not predetermined. E.g., a software agent 101 receives a stimulus message 104 from a stimulus in the environment (see, e.g., 3:56-62 and FIG. 1). Also e.g., a help desk system 603 provides the stimulus message 104 to the agent 101 (see, e.g., 8:15-19 and FIG. 6).</p>

Claims	Prior Art References
	<p>Fathi-Torbaghan '95 discloses wherein the source of the electronic message is not predetermined. E.g., input data is interpreted (see, e.g., p. 2425, "Interpretation of patient data" section). Also e.g., input data from 200 patients is input to the system (see, e.g., p. 2426, first paragraph in right column).</p> <p>Jurisica '96 discloses wherein the source of the electronic message is not predetermined. E.g., source of the new problem (e.g., an electronic message) not specified (see, e.g., p. 1, second paragraph). Also e.g., a data set consisting of 20,000 instances for letter classification (see, e.g., p. 4, third paragraph).</p> <p>Lewis '481 discloses wherein the source of the electronic message is not predetermined. E.g., a fault resolution system processes a received trouble ticket (see, e.g., 5:36-47). Also e.g., if a network fault is detected, fault detection module 22 may automatically gather and transmit appropriate fault information via communications link 16 to fault processing system 18 (see, e.g., 5:17-20).</p> <p>Simoudis '206 discloses wherein the source of the electronic message is not predetermined. E.g., a new problem is presented to the system 10 (see, e.g., 3:32-35 and FIG. 1). Also e.g., receiving an analyzed crash dump file (see, e.g., 6:35-40).</p> <p>Watson '96 discloses wherein the source of the electronic message is not predetermined. E.g., a user submits a free text query (see, e.g., p. 4, "Tester" section).</p> <p>Surma '95 discloses wherein the source of the electronic message is not predetermined. E.g., a new case or input case is processed (see, e.g., p. 1, "Introduction" section; and see Fig. 4). Also e.g., tests were conducted on three databases (see, e.g., p. 5, first paragraph in section 4).</p> <p>Allen '94 discloses wherein the source of the electronic message is not predetermined. E.g., a description of the current problem (e.g., an electronic message) is input to the system (see, e.g., p. 40, top paragraph). Also e.g., incoming customer problems are presented to the system (see, e.g., p. 41, left column, second full paragraph).</p>

Claims	Prior Art References
	<p>Fox '95 discloses wherein the source of the electronic message is not predetermined. E.g., an index describing a goal or problem (see, e.g., p. 27 and Fig. 2.1). Also e.g., a person selects a starting location and a goal location and provides this to the system (see, e.g., p. 47, first paragraph).</p> <p>Leake '96 discloses wherein the source of the electronic message is not predetermined. E.g., a problem description is formed and used to select a relevant case (see, e.g., p. 8, third paragraph of section 3.4). Also e.g., help desk employees present problems to the system (see, e.g., p. 17, first full paragraph).</p> <p>Slator '91 discloses wherein the source of the electronic message is not predetermined. E.g., user inputs data into a form about a situation of interest (see, e.g., p. 17, second and third paragraphs; see also Fig. 2). Also e.g., various interfaces for inputting data (see, e.g., section 6 generally).</p> <p>Golding '96 discloses wherein the source of the electronic message is not predetermined. E.g., receiving a test set of 10,000 names (see, e.g., p. 242, section 4.1.1).</p> <p>Sassin '435 discloses wherein the source of the electronic message is not predetermined. E.g., message may arrive via email, voice, fax (see, e.g., FIG. 1 and 6:1-29).</p> <p>Skalak '91 discloses wherein the source of the electronic message is not predetermined. E.g., the input problem can be received from any source, such as a taxpayer with a tax problem (see, e.g., p. 8, first and second paragraphs).</p> <p>Chi '91 discloses wherein the source of the electronic message is not predetermined. E.g., a problem is input to the system (see, e.g., p. 259, left column and Fig. 2).</p> <p>Acom '92 discloses wherein the source of the electronic message is not predetermined. E.g., the problem description can be entered into the system by an operator such as a support engineer (see, e.g., p. 7, first paragraph).</p>

Claims	Prior Art References
	<p>Whitehead '95 discloses wherein the source of the electronic message is not predetermined. E.g., the system receives questions from not predetermined sources (see, e.g., abstract, 140).</p> <p>Chang '96 discloses wherein the source of the electronic message is not predetermined. E.g., the system receives problem descriptions from not predetermined sources (see, e.g., abstract, 116-119)</p> <p>Nguyen '93 wherein the source of the electronic message is not predetermined. E.g., the system interprets received input problem descriptions from not predetermined sources (see, e.g., 50, 55-56, 58).</p> <p>Rice '96 discloses wherein the source of the electronic message is not predetermined. E.g., the message is sent by an unspecified customer (see, e.g., p. 1509, item 1 in the "Process Flow" section).</p> <p>Yoshiura '689 discloses wherein the source of the electronic message is not predetermined. E.g., the message is received from an input/output terminal unit (see, e.g., 4:16-19).</p> <p>Nguyen '001 discloses wherein the source of the electronic message is not predetermined. E.g., input provided by an unspecified user of the system (see, e.g., 4:36-42).</p> <p>Lenz '93 discloses wherein the source of the electronic message is not predetermined. E.g., message is received from an unspecified user (see, e.g., p. 204).</p> <p>Venkataraman '93 discloses wherein the source of the electronic message is not predetermined. E.g., image in the electronic message is from any sensor (see, e.g., p. 412).</p> <p>Dolan '677 discloses wherein the source of the electronic message is not predetermined.</p>

Claims	Prior Art References
	<p>(see e.g. Col. 2:24-36).</p> <p>Bauman '524 discloses wherein the source of the electronic message is not predetermined. (see e.g. Abstract; Col. 8:44-59; Fig 4).</p> <p>Nguyen '823 discloses wherein the source of the electronic message is not predetermined. (see e.g. Abstract; Col. 7:18-32, Figs 1, 3).</p> <p>Ho '302 discloses wherein the source of the electronic message is not predetermined. (see e.g. 3:30-50; Col. 4:17-56).</p> <p>Redfern '914 discloses wherein the source of the electronic message is not predetermined. (see e.g. Abstract; Col. 2:47-3:45; Fig 1).</p> <p>Nitta '92 discloses wherein the source of the electronic message is not predetermined. (see e.g. pp. 1116, 1122).</p>
Claim 38	
<p>38. The method of claim 26, wherein the predetermined response is altered in accordance the [sic] interpretation of the electronic message before delivery to the source.</p>	<p>Portinale '95 discloses wherein the predetermined response is altered in accordance the [sic] interpretation of the electronic message before delivery to the source. E.g., the system adapts predetermined solutions to current cases (see, e.g., Abstract, 285-88).</p> <p>Rissland '91 discloses wherein the predetermined response is altered in accordance the [sic] interpretation of the electronic message before delivery to the source. E.g., arguments and explanations returned in response to fact patters are based on rule-based and case-based reasoning (see, e.g., Abstract, 839, 853, 855, 867-976).</p> <p>Lopez '93 discloses wherein the predetermined response is altered in accordance the [sic] interpretation of the electronic message before delivery to the source. E.g., the system performs plan adaptations (see, e.g., 98-100, 102).</p> <p>Dutta '91 discloses wherein the predetermined response is altered in accordance the [sic]</p>

Claims	Prior Art References
	<p>interpretation of the electronic message before delivery to the source. E.g., the system adapts retrieved responses to the current input (see, e.g., Abstract, 282-3, 290-5).</p> <p>Skalak '92 discloses wherein the predetermined response is altered in accordance the [sic] interpretation of the electronic message before delivery to the source. E.g., the system perform statutory interpretation on received input case and adapts predetermined responses to the input case (see, e.g., Abstract, 3-4, 35-37).</p> <p>Allen 94/07569 discloses wherein the predetermined response is altered in accordance the [sic] interpretation of the electronic message before delivery to the source. E.g., the system may provide a response suggesting refinement to the query (see, e.g., Abstract 2-4, 6, 9-15).</p> <p>Ho '771 discloses wherein the predetermined response is altered in accordance the [sic] interpretation of the electronic message before delivery to the source. E.g., the system receives and presents subject matter to the user that related to the types of questions the user previously asked (see, e.g., Abstract, Fig. 2, 3:12-58, 5:45-55).</p> <p>Popple '96 discloses wherein the predetermined response is altered in accordance the [sic] interpretation of the electronic message before delivery to the source. E.g., the system adapts predetermined reports to the current fact pattern (see, e.g., 44-46, Chapter 3).</p> <p>Simoudis '92 discloses wherein the predetermined response is altered in accordance the [sic] interpretation of the electronic message before delivery to the source. E.g., the system modifies predetermined solutions to match the current input problem (see, e.g., 7-8).</p> <p>Hall '96 discloses wherein the predetermined response is altered in accordance the [sic] interpretation of the electronic message before delivery to the source. E.g., the system alters retrieved solutions to the queries (see, e.g., 107-108, 110-112).</p> <p>Rissland '87 discloses wherein the predetermined response is altered in accordance the</p>

Claims	Prior Art References
	<p>[sic] interpretation of the electronic message before delivery to the source. E.g., the system alters retrieved cases and arguments in response to the fact pattern (see, e.g., 60, 63-64).</p> <p>Hall '679 discloses wherein the predetermined response is altered in accordance the [sic] interpretation of the electronic message before delivery to the source. E.g., the system alters retrieved solutions to the queries (see, e.g., Abstract, 8:1-27, 9:50-63, 10:7-50).</p> <p>Kowalski '91 discloses wherein the predetermined response is altered in accordance the [sic] interpretation of the electronic message before delivery to the source. E.g., the system alters predefined reports (see, e.g., 21, 22-23, 29).</p> <p>Rissland '95 discloses wherein the predetermined response is altered in accordance the [sic] interpretation of the electronic message before delivery to the source. E.g., the IR system is impacted by the CBR's interpretation of the problem case sent by the user (see, e.g., Fig. 1)</p> <p>Hill '95 discloses wherein the predetermined response is altered in accordance the [sic] interpretation of the electronic message before delivery to the source. E.g., predetermined responses altered based on specific recommendations presented to user (see, e.g., sample email responses at p. 197-198).</p> <p>Allen '664 discloses wherein the predetermined response is altered in accordance the [sic] interpretation of the electronic message before delivery to the source. E.g., "[t]he action 309 which the application 601 performs is to provide an advice message 607" based on the interpretation of the customer problem (see, e.g., 9:21-29).</p> <p>Rissland '89 discloses wherein the predetermined response is altered in accordance the [sic] interpretation of the electronic message before delivery to the source. E.g., the analysis of case, including argument and explanation with supporting cases, rules, facts highlighted (see, e.g., Fig. 1).</p>

Claims	Prior Art References
	<p>Golding '91 discloses wherein the predetermined response is altered in accordance the [sic] interpretation of the electronic message before delivery to the source. E.g., response altered based on interpretation of message as corresponding to "student," "old driver" or "young driver" (see, e.g., Fig. 1).</p> <p>Watson '94 discloses wherein the predetermined response is altered in accordance the [sic] interpretation of the electronic message before delivery to the source. E.g., a list of ranked solutions with likelihood values is generated from cases retrieved based on the electronic message (see, e.g., p. 11, fifth paragraph).</p> <p>Aamodt '94 discloses wherein the predetermined response is altered in accordance the [sic] interpretation of the electronic message before delivery to the source. E.g., a proposed solution is tested for success, e.g. by being evaluated by a teacher, and repaired if failed (see, e.g., p. 6, col 2., first full paragraph).</p> <p>Allen '218 discloses wherein the predetermined response is altered in accordance the [sic] interpretation of the electronic message before delivery to the source. E.g., the selector 209 may receive the matches message 208 and may also receive a cases message 210 from the case database 205, and may generate the queries message 119 and the commands message 121. A set of effectors 123 may receive the queries message 119 and the commands message 121 and generate the action message 106 (see, e.g., 6:1-6, 4:66-5:1).</p> <p>Fathi-Torbaghan '95 discloses wherein the predetermined response is altered in accordance the [sic] interpretation of the electronic message before delivery to the source. E.g., special cases similar to the case at hand are given to the user in addition to the diagnosis (see, e.g., p. 2426, "Special case reasoning (CBR)" section).</p> <p>Jurisica '96 discloses wherein the predetermined response is altered in accordance the [sic] interpretation of the electronic message before delivery to the source. E.g., retrieved cases are filtered based on context and similarity (see, e.g., p. 3, first to fourth paragraphs).</p>

Claims	Prior Art References
	<p>Lewis '481 discloses wherein the predetermined response is altered in accordance the [sic] interpretation of the electronic message before delivery to the source. E.g., if a trouble ticket is not an exact match, step 104 employs adaptation techniques to adapt the pre-existing solutions to the present fault (see, e.g., 6:66-7:2 and 8:56-60).</p> <p>Manago '93 discloses wherein the predetermined response is altered in accordance the [sic] interpretation of the electronic message before delivery to the source. E.g., branching based on input (see, e.g., p. 2, section 3).</p> <p>Simoudis '206 discloses wherein the predetermined response is altered in accordance the [sic] interpretation of the electronic message before delivery to the source. E.g., once cases have been retrieved, the case retriever 14 may accept or reject certain cases (see, e.g., 3:50-4:3).</p> <p>Watson '96 discloses wherein the predetermined response is altered in accordance the [sic] interpretation of the electronic message before delivery to the source. E.g., answers to questions help narrow the number of cases that match, leading to a more accurate solution that is presented to the user (see, e.g., p. 4, "Tester" section).</p> <p>Surma '95 discloses wherein the predetermined response is altered in accordance the [sic] interpretation of the electronic message before delivery to the source. E.g., if a new case is covered by a rule in a rule base, then apply a solution using the rule, otherwise find the most similar case in a case base, and apply a solution using the case (see, e.g., p. 1, "Introduction" section; also see p. 3, section 3.1, and Fig. 1).</p> <p>Allen '94 discloses wherein the predetermined response is altered in accordance the [sic] interpretation of the electronic message before delivery to the source. E.g., Adaptation: the system uses the current problem and closest-matching cases to generate a solution (see, e.g., p. 40, top paragraph).</p> <p>Fox '95 discloses wherein the predetermined response is altered in accordance the [sic] interpretation of the electronic message before delivery to the source. E.g., the case-based</p>

Claims	Prior Art References
	<p>planner selects a case and the model-based reasoner corrects the case before delivery to the source (see, e.g., p. 51-52, section 3.2 and Fig. 3.3). Also e.g., case retrieval and case adaptation (see, e.g., p. 65-66).</p> <p>Leake '96 discloses wherein the predetermined response is altered in accordance the [sic] interpretation of the electronic message before delivery to the source. E.g., adapting retrieves cases to fit new circumstances and repairing solutions that fail (see, e.g., p. 19, section 5.4).</p> <p>Slator '91 discloses wherein the predetermined response is altered in accordance the [sic] interpretation of the electronic message before delivery to the source. E.g., augmenting indicators found during the case matching phase with indicators associated with matching cases (see, e.g., p. 19, first paragraph in section 5.2.2; see also last paragraph on p. 17).</p> <p>Golding '96 discloses wherein the predetermined response is altered in accordance the [sic] interpretation of the electronic message before delivery to the source. E.g., matched cases from a case-base are used to alter an initial response based on rule application (see, e.g., p. 222-223, "Example"; see also Abstract).</p> <p>Sassin '435 discloses wherein the predetermined response is altered in accordance the [sic] interpretation of the electronic message before delivery to the source. E.g., retrieving information that can be transmitted in response to the message and then analyzing the information to provide an intelligent response (see, e.g., 13:3-7).</p> <p>Skalak '91 discloses wherein the predetermined response is altered in accordance the [sic] interpretation of the electronic message before delivery to the source. E.g., choosing cases that satisfy a rules filter (see, e.g., p. 9, paragraph continued from previous page).</p> <p>Chi '91 discloses wherein the predetermined response is altered in accordance the [sic] interpretation of the electronic message before delivery to the source. E.g., a suggested solution from an old case is applied to the new case to generate a new solution (see, e.g., p. 259, left column, steps 3-4 and Fig. 2).</p>

Claims	Prior Art References
	<p>Acom '92 discloses wherein the predetermined response is altered in accordance the [sic] interpretation of the electronic message before delivery to the source. E.g., a degree of relevance is assigned to retrieved cases, and the cases are displayed with the degree of relevance (see, e.g., p. 8, second paragraph, and Fig. 4 on p. 9).</p> <p>Rice '96 discloses wherein the predetermined response is altered in accordance the [sic] interpretation of the electronic message before delivery to the source. E.g., standard replies are altered if necessary (see, e.g., p. 1509, items 3.b and 4 in the "Process Flow" section).</p> <p>Yoshiura '689 discloses wherein the predetermined response is altered in accordance the [sic] interpretation of the electronic message before delivery to the source. E.g., the retrieved solution case is modified based on a modification case (see, e.g., 5:32-56).</p> <p>Nguyen '001 discloses wherein the predetermined response is altered in accordance the [sic] interpretation of the electronic message before delivery to the source. E.g., determining results based on a series of searches (see, e.g., 5:10-22).</p> <p>Lenz '93 discloses wherein the predetermined response is altered in accordance the [sic] interpretation of the electronic message before delivery to the source. E.g., excluding certain retrieved cases that match specified criteria (see, e.g., p. 206-207).</p> <p>Venkataraman '93 discloses wherein the predetermined response is altered in accordance the [sic] interpretation of the electronic message before delivery to the source. E.g., retrieved images are combined with textual description (see, e.g., p. 410-411).</p> <p>Dolan '677 discloses wherein the predetermined response is altered in accordance the [sic] interpretation of the electronic message before delivery to the source. (see e.g. Col. 5:47-58).</p> <p>Nguyen '823 discloses wherein the predetermined response is altered in accordance the</p>

Claims	Prior Art References
	<p>[sic] interpretation of the electronic message before delivery to the source. (see e.g. Col. 8:7-24).</p> <p>Ho '302 discloses wherein the predetermined response is altered in accordance the [sic] interpretation of the electronic message before delivery to the source. (see e.g. Col. 17:54-18:7).</p> <p>Redfern '914 discloses wherein the predetermined response is altered in accordance the [sic] interpretation of the electronic message before delivery to the source. (see e.g. Abstract; Col. 2:47-3:45; Col. 11:31-16:45 Fig 1).</p> <p>Nitta '92 discloses wherein the predetermined response is altered in accordance the [sic] interpretation of the electronic message before delivery to the source. (see e.g. pp. 1122, 1123).</p> <p>Tanaka '985 discloses wherein the predetermined response is altered in accordance the [sic] interpretation of the electronic message before delivery to the source. (see e.g. Col. 7:57-9:29; Col. 19:54-61).</p>
Claim 39	
<p>39. The method of claim 26, wherein the electronic message includes fixed data.</p>	<p>Rissland '93 discloses wherein the electronic message includes fixed data. E.g., the system receives user selection from a hierarchy of report type the type of report the system is to generate (see, e.g., Abstract, 66-67).</p> <p>Vossos '91 discloses wherein the electronic message includes fixed data. E.g., the system receives input submitted in a form (see, e.g., Abstract, 34-35, 36-38).</p> <p>Tanaka '985 discloses wherein the electronic message includes fixed data (see, e.g., Abstract, 14:57-15:8, Fig. 11).</p> <p>Allen 94/07569 discloses wherein the electronic message includes fixed data (see, e.g., Abstract 2-4, 6, 9-15).</p>

Claims	Prior Art References
	<p>Ho '771 discloses wherein the electronic message includes fixed data. E.g., the system presents user with an interface prompting for questions (see, e.g., Abstract, Fig. 2, 3:12-58, 5:45-55).</p> <p>Popple '96 discloses wherein the electronic message includes fixed data. E.g., the system presents user with an interface prompting for fact patterns (see, e.g., 44-46, Chapter 3).</p> <p>Allen 92/01835 discloses wherein source the electronic message includes fixed data. E.g., the system receives user input via a user interface such as a form (see, e.g., Abstract, 4-7).</p> <p>Kriegsman '93 discloses wherein source the electronic message includes fixed data. E.g., the system receives input problem entered by a user via a window with fields (see, e.g., 18-20, 24-25).</p> <p>Simoudis '92 discloses wherein the electronic message includes fixed data. E.g., the user inputs the problem via a defined user interface (see, e.g., 7-8).</p> <p>Hall '96 discloses wherein the electronic message includes fixed data. E.g., the received queries include with fixed data (see, e.g., 107-108, 110-112).</p> <p>Rissland '87 discloses wherein the electronic message includes fixed data. E.g., the user inputs the problem via a user interface (see, e.g., 60, 63-64).</p> <p>Tso '201 discloses wherein the electronic message includes fixed data. E.g., the system receives email messages with fixed data (see, e.g., Abstract, 1:56-64, 2:59-67, 4:32-6:51).</p> <p>Hall '679 discloses wherein the electronic message includes fixed data. E.g., the received queries include with fixed data (see, e.g., Abstract, 8:1-27, 9:50-63, 10:7-50).</p> <p>Kowalski '91 wherein the electronic message includes fixed data. E.g., the received fact patterns are submitted via a user interface and include fixed data (see, e.g., 21, 22-23, 29).</p>

Claims	Prior Art References
	<p>Rissland '95 discloses wherein the electronic message includes fixed data. E.g., the system takes as input a standard frame-based representation of a problem case or case template filled by facts (see, e.g., p. 53, fourth paragraph in left column).</p> <p>Hill '95 discloses wherein the electronic message includes fixed data. E.g., the electronic message is an email. The email contains fixed data, such as "subject: ratings" as well as fixed fields such as the "from address", etc. (see, e.g., p. 197, first and second paragraphs in "The Email Interface" section).</p> <p>Allen '664 discloses wherein the electronic message includes fixed data. E.g., "the user 119 may enter data relating to the problem by means of the user interface 118, and data are shown to include fields for customer name, address. (see, e.g., 3:59-65 and Fig. 6A). Also e.g., an "automated 'help desk' application 610 may perform a flow diagram like that disclosed with FIG. 2, with some modifications. In the description step 201, the application 601 may retrieve a text string description 606 of the customer problem 605. In the case-matching step 202, the application 601 may attempt to match the customer problem 605 to one or more cases in the case base 104 using just the description 606 of the customer problem 605," (see, e.g., 9:16-29). The text string description is fixed data.</p> <p>Rissland '89 discloses wherein the electronic message includes fixed data. E.g., the system takes as input two standard fields, one containing facts and the other indicating top level purpose (see, e.g., Fig. 1).</p> <p>Golding '91 discloses wherein the electronic message includes fixed data. E.g., the incoming message includes fields for name, address, sex, age, occupation, make and value (see, e.g., Fig. 2).</p> <p>Watson '94 discloses wherein the electronic message includes fixed data. (see, e.g., the fixed fields in FIG. 3A on p. 11.</p> <p>Aamodt '94 discloses wherein the electronic message includes fixed data. E.g., an</p>

Claims	Prior Art References
	<p>appropriate structure for describing case contents (see, e.g., p. 9, first paragraph in section 4).</p> <p>Allen '218 discloses wherein the electronic message includes fixed data. E.g., the features message 110 may comprise touch-tone commands from the user 601 (see, e.g., 8:34-35).</p> <p>Jurisica '96 discloses wherein the electronic message includes fixed data. E.g., a case (e.g., an input problem case) is represented as a structured object with a finite set of attribute/value pairs (see, e.g., p. 2, first paragraph in section 2).</p> <p>Lewis '481 discloses wherein the electronic message includes fixed data. (see e.g., FIG. 3 illustrating a trouble ticket with fixed fields).</p> <p>Manago '93 discloses wherein the electronic message includes fixed data. E.g., body shape (see, e.g., p. 2, section 3, fig. 1).</p> <p>Simoudis '206 discloses wherein the electronic message includes fixed data. E.g., a condition code and program counter (see, e.g., 6:40-41).</p> <p>Watson '96 discloses wherein the electronic message includes fixed data. E.g., users specify knowledge in a structured way (see, e.g., p. 5, "ReCall" section).</p> <p>Surma '95 discloses wherein the electronic message includes fixed data. E.g., attribute values and class belong to finite, prenumerated set (see, e.g., p. 4, last paragraph).</p> <p>Allen '94 discloses wherein the electronic message includes fixed data. E.g., case representations range from free-text documents to database records (see, e.g., p. 40, left column, last full paragraph).</p> <p>Fox '95 discloses wherein the electronic message includes fixed data. E.g., input index includes field-value pairs, each pair having a fixed structure (see, e.g., sample index on p. 73).</p>

Claims	Prior Art References
	<p>Leake '96 discloses wherein the electronic message includes fixed data. E.g., task domains that are especially natural for CBR (see, e.g., p. 3, second paragraph under knowledge acquisition section).</p> <p>Slator '91 discloses wherein the electronic message includes fixed data. E.g., fixed fields in data entry form such as income and assets (see, e.g., p. 18, Fig. 3).</p> <p>Golding '96 discloses wherein the electronic message includes fixed data. E.g., an input name spelling (see, e.g., p. 237, first full paragraph). Also e.g., a target case with fixed fields (see, e.g., p. 219, Fig. 4).</p> <p>Sassin '435 discloses wherein the electronic message includes fixed data. E.g., text information is presented in an appropriate format for the content analyzer (see, e.g., 6:27-29).</p> <p>Chi '91 discloses wherein the electronic message includes fixed data. E.g., the frame used to describe a case (see, e.g., sample case at p. 260, right column).</p> <p>Acom '92 discloses wherein the electronic message includes fixed data. E.g., answers to questions are provided (see, e.g., p. 8, first paragraph).</p> <p>Whitehead '95 discloses wherein the electronic message includes fixed data. E.g., the system receives questions inputted via a user interface (see, e.g., abstract, 140).</p> <p>Chang '96 discloses wherein the electronic message includes fixed data. E.g., the system receives questions inputted via a user interface (see, e.g., abstract, 116-119).</p> <p>Nguyen '93 discloses wherein the electronic message includes fixed data. E.g., the system receives problem descriptions inputted via a user interface (see, e.g., 50, 55-56, 58).</p>

Claims	Prior Art References
	<p>Rice '96 discloses wherein the electronic message includes fixed data. E.g., fixed fields such as state and zip code (see, e.g., p. 1513, sample received email at bottom of left column).</p> <p>Lenz '93 discloses wherein the electronic message includes fixed data. E.g., numerical features (see, e.g., p. 205).</p> <p>Yoshiura '689 discloses wherein the electronic message includes fixed data. E.g., the room into which apparatuses are to be arranged (see, e.g., 7:47-18:17).</p> <p>Nguyen '001 discloses wherein the electronic message includes fixed data. E.g., a case having a title field (see, e.g., 6:22-24).</p> <p>Venkataraman '93 discloses wherein the electronic message includes fixed data. E.g., commands from image processing toolbox (see, e.g., p. 411-412).</p> <p>Dolan '677 discloses wherein the electronic message includes fixed data. (see e.g. Col. 3:19-32).</p> <p>Bauman '524 discloses wherein the electronic message includes fixed data. (see e.g. Col. 8:34-59; Col. 16:45-17:45; Col. 28:15-32; Col. 29:20-30:25; Figs. 16, 17).</p> <p>Nguyen '823 discloses wherein the electronic message includes fixed data. (see e.g. Col. 7:18-32).</p> <p>Ho '302 discloses wherein the electronic message includes fixed data. (see e.g. Col. 3:30-50; Col. 4:17-56).</p> <p>Redfern '914 discloses wherein the electronic message includes fixed data. (see e.g. Abstract; Col. 2:47-3:45; Col. 4:8-43; Fig 1).</p> <p>Nitta '92 discloses wherein the electronic message includes fixed data. (see e.g. pp.</p>

Claims	Prior Art References
	1122).
Claim 40	
40. The method of claim 26, wherein the electronic message includes variable data.	<p>Auriol '95 discloses wherein the electronic message includes variable data. E.g., the system was designed to be used in a help-desk environment to guide support technicians in variable situations. (see, e.g., pp. 372, 378-9).</p> <p>Portinale '95 discloses wherein the electronic message includes variable data. E.g., the input cases include variable information (see, e.g., Abstract, 285-88).</p> <p>Rissland '91 discloses wherein the electronic message includes variable data. E.g., input fact patters include variable data (see, e.g., Abstract, 839, 853, 855, 867-976).</p> <p>Lopez '93 discloses wherein the electronic message includes variable data. E.g., the system receives input of variable patient data (see, e.g., 97, 98-100, 102, 103-4).</p> <p>Rissland '93 discloses wherein the electronic message includes variable data. E.g., the system receives input of variable patient symptoms (see, e.g., Abstract, 66-67).</p> <p>Vossos '91 discloses wherein the electronic message includes variable data. E.g., the system receive input cases of variable facts (see, e.g., Abstract, 34-35, 36-38).</p> <p>Dutta '91 discloses wherein the electronic message includes variable data. E.g., the system receive input cases of variable facts (see, e.g., Abstract, 34-35, 36-38).</p> <p>Skalak '92 discloses wherein the electronic message includes variable data. E.g., the system receive input cases of variable facts (see, e.g., Abstract, 3-4, 35-37).</p> <p>Tanaka '985 discloses wherein the electronic message includes variable data. E.g., the system receives input cases of variable facts (see, e.g., Abstract, 14:57-15:8).</p> <p>Allen 93/03558 discloses wherein the electronic message includes variable data. E.g., the system receives input cases of variable data (see, e.g. A bstract, 3, 14).</p>

Claims	Prior Art References
	<p>Allen 94/07569 discloses wherein the electronic message includes variable data. E.g., the system receives queries with variable data (see, e.g., Abstract 2-4, 6, 9-15).</p> <p>Ho '771 discloses wherein the electronic message includes variable data. E.g., questions submitted by users include variable data (see, e.g., Abstract, Fig. 2, 3:12-58, 5:45-55).</p> <p>Popple '96 discloses wherein the electronic message includes variable data. E.g., the received fact patters include variable data (see, e.g., 44-46, Chapter 3).</p> <p>Allen 92/01835 discloses wherein the electronic message includes variable data. E.g., the received fact patters include variable data (see, e.g., Abstract, 4-7).</p> <p>Kriegsman '93 discloses wherein source the electronic message includes variable data. E.g., the system receives input problem entered by a user via a window with fields and the user also enters text (see, e.g., 18-20, 24-25).</p> <p>Simoudis '92 discloses wherein the electronic message includes variable data. E.g., the received fact patters include variable data (see, e.g., 7-8).</p> <p>Hall '96 discloses wherein the electronic message includes variable data. E.g., the received queries include variable data (see, e.g., 107-108, 110-112).</p> <p>Rissland '87 discloses wherein the electronic message includes variable data. E.g., the received fact patterns include variable data (see, e.g., 60, 63-64).</p> <p>Tso '201 discloses wherein the electronic message includes variable data. E.g., the system receives email messages with variable data (see, e.g., Abstract, 1:56-64, 2:59-67, 4:32-6:51).</p> <p>Hall '679 discloses wherein the electronic message includes variable data. E.g., the received queries include variable data (see, e.g., Abstract, 8:1-27, 9:50-63, 10:7-50).</p>

Claims	Prior Art References
	<p>Kowalski '91 wherein the electronic message includes variable data. E.g., the received fact patterns include variable data (see, e.g., 21, 22-23, 29).</p> <p>Rissland '95 discloses wherein the electronic message includes variable data. E.g., the system takes as input a standard frame-based representation of a problem case – a case template filled by facts (see, e.g., p. 53, fourth paragraph in left column).</p> <p>Hill '95 discloses wherein the electronic message includes variable data. E.g., the electronic message is an email. The body of the email contains movie ratings in any order, i.e., variable data. The email is sent through a parser to extract content (see, e.g., p. 197, second paragraph in “The Email Interface” section).</p> <p>Allen '664 discloses wherein the electronic message includes variable data. E.g., “the user 119 may enter data relating to the problem” (see, e.g., 3:59-65).</p> <p>Rissland '89 discloses wherein the electronic message includes variable data. E.g., the system takes as input the particular facts of a problem case (see, e.g., Fig. 1).</p> <p>Golding '91 discloses wherein the electronic message includes variable data. E.g., the surname of a person (see, e.g., page 25, first paragraph in section 3.1)</p> <p>Watson '94 discloses wherein the electronic message includes variable data. E.g., a user submits a free form text entry (see, e.g., p. 11, fifth paragraph).</p> <p>Allen '218 discloses wherein the electronic message includes variable data. E.g., the motives message 117 may reflect a set of goals, such as responding to user inquiries with appropriate information (see, e.g., 8:31-34).</p> <p>Fathi-Torbaghan '95 discloses wherein the electronic message includes variable data. E.g., patient data provided to the system (see, e.g., page 2426, right column, first paragraph).</p>

Claims	Prior Art References
	<p>Jurica '96 discloses wherein the electronic message includes variable data. E.g., high variability of values (see, e.g., p. 3, sixth paragraph)</p> <p>Lewis '481 discloses wherein the electronic message includes variable data. E.g., any additional data that may be helpful is entered in data field 62M (see, e.g., 6:27-28).</p> <p>Manago '93 discloses wherein the electronic message includes variable data. E.g., methods for handling unknown values (see, e.g., p. 2, section 3).</p> <p>Simoudis '206 discloses wherein the electronic message includes variable data. E.g., analyzed information of a system dump (see, e.g., 6:37-38).</p> <p>Watson '96 discloses wherein the electronic message includes variable data. E.g., a user's free form text query is used to match titles and descriptions of cases (see, e.g., p. 4, description of "Tester").</p> <p>Surma '95 discloses wherein the electronic message includes variable data. E.g., unknown attribute values (see, e.g., p. 5, text above fig. 2).</p> <p>Allen '94 discloses wherein the electronic message includes variable data. E.g., case representations range from free-text documents to database records (see, e.g., p. 40, left column, last full paragraph).</p> <p>Fox '95 discloses wherein the electronic message includes variable data. E.g., input index includes various fields in unspecified order (see, e.g., sample index on p. 73).</p> <p>Leake '96 discloses wherein the electronic message includes variable data. E.g., cases described with natural language text (see, e.g., p. 3, third paragraph under knowledge acquisition section).</p> <p>Slator '91 discloses wherein the electronic message includes variable data. E.g., it is not</p>

Claims	Prior Art References
	<p>necessary for the user to answer every question (see, e.g., third paragraph on p. 17).</p> <p>Golding '96 discloses wherein the electronic message includes variable data. E.g., domains vary from completely codified to those for which no rules are known (see, e.g., p. 215, first paragraph in section 1).</p> <p>Sassin '435 discloses wherein the electronic message includes variable data. E.g., the message can include substantial "content freedom", i.e., independence in describing the subject matter of interest (see, e.g., 5:56-59). Also e.g., a freeform voicemail is converted into text for inclusion in the message (see, e.g., 6:23-25).</p> <p>Chi '91 discloses wherein the electronic message includes variable data. E.g., several values given for a case field (see, e.g., sample cases on p. 264, right column).</p> <p>Acom '92 discloses wherein the electronic message includes variable data. E.g., a support engineer enters a textual description of the problem (see, e.g., p. 7, first paragraph).</p> <p>Whitehead '95 discloses wherein the electronic message includes variable data. E.g., the system receives questions with variable data (see, e.g., abstract, 140).</p> <p>Chang '96 discloses wherein the electronic message includes variable data. E.g., the system receives problem descriptions with variable data (see, e.g., abstract, 116-119).</p> <p>Nguyen '93 discloses wherein the electronic message includes variable data. E.g., the system receives problem descriptions that include variable data (see, e.g., 50, 55-56, 58).</p> <p>Rice '96 discloses wherein the electronic message includes variable data. E.g., freeform text (see, e.g., p. 1513, sample received email at bottom of left column).</p> <p>Yoshiura '689 discloses wherein the electronic message includes fixed data. E.g., the apparatuses to be arranged in the room (see, e.g., 7:47-18:17).</p>

Claims	Prior Art References
	<p>Nguyen '001 discloses wherein the electronic message includes variable data. E.g., a natural language description of a problem (see, e.g., 4:36-38).</p> <p>Lenz '93 discloses wherein the electronic message includes variable data. E.g., symbolic features (see, e.g., p. 205).</p> <p>Venkataraman '93 discloses wherein the electronic message includes variable data. E.g., image content (see, e.g., p. 411-412).</p> <p>Dolan '677 discloses wherein the electronic message includes variable data. (see e.g. Col. 3:19-32).</p> <p>Bauman '524 discloses wherein the electronic message includes variable data. (see e.g. Col. 8:34-59; Col. 16:45-17:45; Col. 28:15-32; Col. 29:20-30:25; Figs. 16, 17).</p> <p>Nguyen '823 discloses wherein the electronic message includes variable data. (see e.g. Col. 7:18-32).</p> <p>Ho '302 discloses wherein the electronic message includes variable data. (see e.g. Col. 3:30-50; Col. 4:17-56).</p> <p>Redfern '914 discloses wherein the electronic message includes variable data. (see e.g. Abstract; Col. 2:47-3:45; Col. 4:8-43; Fig 1).</p> <p>Nitta '92 discloses wherein the electronic message includes variable data. (see e.g. pp. 1122).</p>

Improving Accuracy by Combining Rule-based and Case-based Reasoning

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TR94-19a December 1995

Abstract

An architecture is presented for combining rule-based and case-based reasoning. The architecture is intended for domains that are understood reasonably well, but still imperfectly. It uses a set of rules, which are taken to be only approximately correct, to obtain a preliminary answer for a given problem; it then draws analogies from cases to handle exceptions to the rules. Having rules together with cases not only increases the architecture's domain coverage, it also allows innovative ways of doing case-based reasoning: the same rules that are used for rule-based reasoning are also used by the case-based component to do case indexing and case adaptation. The architecture was applied to the task of name pronunciation, and, with minimal knowledge engineering, was found to perform almost at the level of the best commercial systems. Moreover, its accuracy was found to exceed what it could have achieved with rules or cases alone, thus demonstrating the accuracy improvement afforded by combining rule-based and case-based reasoning.

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