UNPUBLISHED DOCUMENTS RELATED TO THE DEVELOPMENT OF ALGOL 60

with notes written by Peter Naur

in February 1970

The documents are in chronological order.
For each document is given:
1. The date, as day, month, and year.
2. The number of pages.
3. The author.
4. Further notes, where relevant.

En kopi af de her
nævnte dokumenter er
sendt til Donald Knuth
den 12. febr 1970.

A copy of all these documents was sent to Donald Knuth on 1970 Febr 12.

14. dec. 59, 7 p, Naur, drafts for committee report.
14.- 16. dec. 59, 4 p, European Representatives to the Algol 60 conference. Document 2, according to the numbering of basic documents used during the Algol 60 conference.
19. dec. 59, 2 p, European Algol Committee, doc. 4A, aide-memoir on revisions of the Zürich Report. The Zürich report (Algol 58) is document 4B.
2. jan. 60, 8 p, Naur, cover letter plus 7 pages, dok. 3.
9. jan. 60, 18 p, Naur, draft report used as basis for final report, dok. 5. The date "1960 Jan 14" at the top gives the date of a particular set of corrections.
10. Jan. 60, 12 p, US representatives' proposals, dok. 6. The date written on my copy is wrong, I believe. I think the document was sent by mail and received before Jan. 9th.

The following documents were distributed during the Algol 60 meeting, although some of them may have been written before.

11. jan. 60, 2 p, Turanski, dok. 7 for clause
11. jan. 60, 1 p, Katz, dok. 8 switch - do
12. jan. 60, 2 p, Perlis, dok. 9. global
11. jan. 60, 3 p, Naur, dok. 10. = 5c, procedure declar.
13. jan. 60, 1 p, Backus, Green, Samelson, v.Wijngaarden, dok. 11. local, block
13. jan. 60, 2 p, subcommittee of, I think, Bauer and Rutishauser plus ? An attempt to save the distinction between input and output parameters, without having all the horrible rules given in dok. 3, pages 5 to 7.Dok.12.
13. jan. 60, 1 p, Vauquois, dok. 13. Serial Subscript
13. jan. 60, 1 p, Naur, dok. 14. proc - call
13. jan. 60, 1 p, Naur, dok. 15. type conversion
13. jan. 60, 3 p, Naur, dok. 16. IAP types of expressions
14. jan. 60, 1 p, Katz, v. Wijngaarden, Woodger, dok. 17. proc. call
14. jan. 60, 3 p, Perlis, dok. 18. proc call
14. jan. 60, 2 p, Naur, dok. 19. = 5c conditional statem.
14. jan. 60, 1 p, Rutishauser?, dok. 20. double return
14. jan. 60, 1 p, McCarthy, dok 21. name change
14. jan. 60, 1 p, Rutishauser, dok 22. array functions
15. jan. 60, 1 p, Naur, dok. 23. syntax of compound stat. and block
? 1 p, ? dok 24 name change
? 2 p, ? dok 25 for statements
? 2 p, ? dok 26 procedure stat
? 2 p, ? dok 27 " decl
? 3 p, Bauer ?,dok 28 introd. to report
? 1 p, Wegstein, dok 29 " "
? 2 p, Samelson ?,dok 30 syntax of expr. statem.

Dok 31 13. - 16. jan. 60, 33 p, members of the Algol 60 committee. These items, numbered 101 to 175, form the expression of the committee's wishes about the details of the final report. They all refer to the document 5, of Jan. 9th. They came into being as part of the following committee process: a) In full sessions the text of document 5 was read silently by all members, section by section. Prior to the reading the editor indicated any late changes to the existing text. b) In a subsequent period the committee members wrote out proposals for alternative wordings of any passage which they would like to see changed. These proposals were written on separate sheets, with reference

to section numbers of document 5 and the name of the proponent. c) All proposals produced individually by the committee members in process b were collected by the editor. He sorted them according to section number and gave them numbers, from 101 and up. d) The sorted proposals were typed in 13 copies and distributed to the committee members. e) In a full session the proposals for changes were worked through in order and decided about.

Doks

201 17. jan. 60, 2 p, Naur.
202 19. jan. 60, 1 p, van Wijngaarden
203 20. jan. 60, 1 p, McCarthy
204 20. jan. 60, 2 p, Rutishauser
205 20. jan. 60, 1 p, Perlis
206 21. jan. 60, 1 p, Wegstein
207 22. jan. 60, 1 p, Bauer and Samelson
208 25. jan. 60, 8 p, Woodger, letter of 3 pages, syntax of 5. This contribution arrived too late to be of substantial help - by this time I had the report so far worked out that the conciliation of detailled nomenclature with the syntax produced by Mike Woodger would only cause a delay. There are quite substantial differences also, e.g. Woodges has no specifications of procedure parameters, nor any strings. I also noticed that his definition 73 would allow indefinite repetition of the operator not.
209 25. jan. 60, 1 p, Katz.
210 25. jan. 60, 1 p, Rutishauser.
211 26. jan. 60, 1 p, Green and Backus (telegram)
212 4. febr. 60, 27 p, Naur, circular letter of 1 page, and
213 ——— draft of Algol 60 report, 26 pages.
214 4. febr. 60, 4 p, van Wijngaarden.
215 10. febr. 60 approx., 7 p, Perlis, Holt, and McCarthy.
216 12. febr. 60, 2 p, Bauer and Samelson.
217 12. febr. 60, 5 p, Rutishauser (signed by H. R. Schwarz).
218 16. febr. 60, 3 p, Woodger.
219 17. febr. 60, 2 p, Rutishauser.
220 18. febr. 60, 1 p, Naur
221 26. febr. 60, 4 p, Rutishauser

The next document in my collection is Report on the Algorithmic Language Algol 60, distributed as Algol Bulletin Supplement no. 2 on 1st March 1960. This has been reprinted in several places.

Probably the most interesting issue which is not clarified by the present documents is the admission of recursive procedures. These were recommended strongly by the U.S. representatives in document 6. In Paris they were the subject of a hot debate, but finally ruled out by a narrow margin, if I remember right. Then, some day in February, when the draft report of Febr. 4th had been studied by the other committee members, I had a telephone call from Van Wijngaarden, seconded by E. W. Dijkstra, in Amsterdam. They dictated to me the crucial sentence of section 5.4.4: "Any other occurrence of the procedure identifier within the procedure body denotes activation of the procedure." and assured me that just by this simple statement recursive procedures would be possible, while without it the matter would be unclear. I got charmed by the simplicity of this suggestion and decided to follow it, in spite of the risk of subsequent trouble on the issue.

The differences between the preliminary notes produced during the Paris conference and the draft report of 4th February 1960 are partly my elaborations of more or less general agreements (e.g. try to remove redundant parentheses from the syntax), partly my own invention. Thus I invented many of the details of the syntax of procedure declarations, including the terms "specification"*) and "procedure body". Not that I do not wish that I had done a neater job!

As to the detailled events taking place during meetings the best source must, I think, be Mike Woodger. He usually wrote detailled minutes of the discussion.

Peter Naur

*) I note now that this appears already in my dok. 10 of Jan. 11th.

11.2.70 PN