

UNITED STATES PATENT AND TRADEMARK OFFICE  
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BEFORE THE PATENT TRIAL AND APPEAL BOARD  
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APPLE, INC., MICROSOFT CORPORATION,  
MICROSOFT MOBILE OY, and MICROSOFT  
MOBILE INC.,  
Petitioner,

v.

EVOLVED WIRELESS LLC,  
Patent Owner.

\_\_\_\_\_  
Case IPR2016-01208  
Patent 7,746,916 B2  
\_\_\_\_\_

Before CHRISTOPHER L. CRUMBLY, PATRICK M. BOUCHER, and  
TERRENCE W. McMILLIN, *Administrative Patent Judges*.

McMILLIN, *Administrative Patent Judge*.

DECISION  
Institution of *Inter Partes* Review  
35 U.S.C. § 314(a) and 37 C.F.R. § 42.108

## I. INTRODUCTION

Apple, Inc., Microsoft Corporation, Microsoft Mobile OY, and Microsoft Mobile Inc. (f/k/a Nokia, Inc.) (collectively, “Petitioner”) filed a Petition requesting an *inter partes* review of claims 1–10 of U.S. Patent No. 7,746,916 B2 (Ex. 1001, “the ’916 patent”). Paper 2 (“Pet.”). Evolved Wireless, LLC (“Patent Owner”), the assignee of the ’916 patent, filed a Preliminary Response to the Petition. Paper 6 (“Prelim. Resp.”).

Pursuant to 35 U.S.C. § 314(a), an *inter partes* review may not be instituted unless the information presented in the Petition and any Preliminary Response shows “there is a reasonable likelihood that the petitioner would prevail with respect to at least 1 of the claims challenged in the petition.” Taking into account the information presented, we conclude the record establishes there is a reasonable likelihood that Petitioner will prevail with respect to at least one of the challenged claims of the ’916 patent. Accordingly, we institute trial as set forth below.

### A. *Related Matters*

The ’916 patent has been asserted in several actions, captioned *Evolved Wireless, LLC v. Apple, Inc.*, C.A. 15-cv-542-SLR (D. Del.); *Evolved Wireless, LLC v. HTC Corp.*, C.A. 15-cv-543-SLR (D. Del.); *Evolved Wireless, LLC v. Lenovo Group Ltd.*, C.A. 15-cv-544-SLR (D. Del.); *Evolved Wireless, LLC v. Samsung Electronics Co. Ltd.*, C.A. 15-cv-545-SLR (D. Del.); *Evolved Wireless, LLC v. ZTE Corp.*, C.A. 15-cv-546-SLR (D. Del.); and *Evolved Wireless, LLC v. Microsoft Corp.*, C.A. 15-cv-547-SLR (D. Del.). Pet. 1; Paper 5, 2–3.

The '916 patent is also the subject of IPR2016-01209, IPR2016-01277, and IPR2016-01280, in which decisions instituting trial on claims 1–10 are being issued on the same date as this decision.

*B. The '916 Patent*

The '916 patent is titled “Method and Apparatus for Generating and Transmitting Code Sequence in a Wireless Communication System.” Ex. 1001, [54]. According to Patent Owner, “the '916 Patent claims a method of generating a code sequence of a desired length  $L$ , by cyclically extending and then circularly shifting a code sequence of length  $X$ , where the length of  $X$  is the largest prime number smaller than  $L$ .” Prelim. Resp. 5 (citations omitted). The Specification states, “the code sequence or a code sequence set can be applied to 3<sup>rd</sup> Generation Partnership Project (3GPP) system or 3GPP2 system as well as a Wibro system or a Wimax system.” Ex. 1001, 17:22–25. Both parties cite Figure 13, which is reproduced below, as illustrating the invention. Pet. 13; Prelim. Resp. 5.

FIG. 13

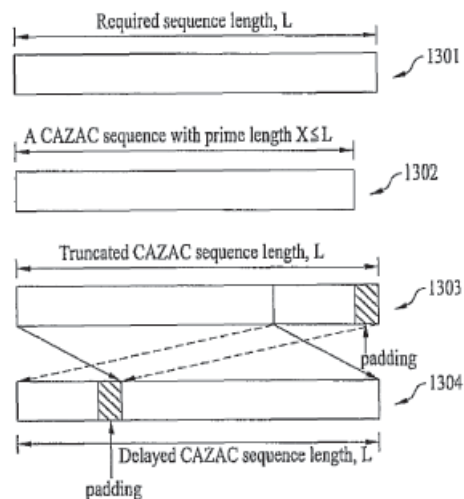


Figure 13 of the '916 patent depicts code sequence 1301 with a “[r]equired sequence length, L”; “CAZAC sequence [1302] with prime length  $X \leq L$ ”; “[t]runcated CAZAC sequence [1303] length, L” with a padding portion added; and “[d]elayed CAZAC sequence [1304] length, L” in which the end portion from code sequence 1303 has been circularly shifted to the start of code sequence 1304. Ex. 1001, 12:37–49.

### *C. The '916 Patent Claims*

Of the challenged claims, claims 1 and 6 are independent. Claims 1 and 6 recite:

1. A method for transmitting a code sequence from a transmitting party to a receiving party in a wireless communication system, the method comprising:

acquiring a code sequence having a second length by a cyclic extension of a code sequence having a first length;

performing a circular shift to the code sequence having the second length; and

transmitting the circular shifted code sequence having the second length to the receiving party,

wherein the first length is a largest prime number smaller than the second length, and

wherein the cyclic extension of the code sequence having the first length is performed such that a part of the code sequence having the first length, having a length corresponding to a difference between the first length and the second length, is added to either a start or an end of the code sequence having the first length, and

wherein the circular shift is performed to the code sequence having the second length such that either a rear portion of the code sequence having the second length moves to a start of the code sequence having the second length, or a front portion of the code sequence having the second length moves to an end of the code sequence having the second length.

6. An apparatus for transmitting a code sequence in a wireless communication system, the apparatus comprising:
  - a code sequence generator for generating a code sequence having a second length by cyclic extension of a code sequence having a first length, and performing a circular shift to the code sequence having the second length; and
  - a transmitting unit for transmitting the circular shifted code sequence having the second length,wherein the first length is a largest prime number smaller than the second length,  
wherein the cyclic extension of the code sequence having the first length is performed such that a part of the code sequence having the first length, having a length corresponding to a difference between the first length and the second length, is added to either the start or an end of the code sequence having the first length, and  
wherein the circular shift is performed to the code sequence having the second length such that either a rear portion of the code sequence having the second length moves to a start of the code sequence having the second length, or a front portion of the code sequence having the second length moves to an end of the code sequence having the second length.

Ex. 1001, 17:35–57, 18:7–28.

Dependent claims 2 and 7 recite, “the part of the code sequence having the first length comprises at least a cyclic prefix or a cyclic postfix.” *Id.* at 17:58–60, 18:29–31.

Dependent claims 3 and 8 recite, “the cyclic extension is performed such that a cyclic postfix of the code sequence having the first length, having the length corresponding to the difference between the first length and the second length, is added to the end of the code sequence having the first length.” *Id.* at 17:61–66, 18:32–37.

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