# IN THE HIGH COURT OF JUSTICE BUSINESS AND PROPERTY COURTS OF ENGLAND & WALES INTELLECTUAL PROPERTY LIST (ChD)

CRYPTO OPEN PATENT ALLIANCE	<u>Claimar</u>
-and-	
DR CRAIG STEVEN WRIGHT	
	<u>Defendar</u>
WITNESS STATEMENT OF	
PROFESSOR BJARNE STROUSTRUP	

Claim No: IL-2021-000019

I, PROFESSOR BJARNE STROUSTRUP, of , will say as follows -

1. I prepared this statement myself, with input from Bird & Bird on structure and formatting following my exchanges with them, though I am told by Bird & Bird that our exchanges are considered privileged. This statement uses my own words and sets out facts and matters that are within my own knowledge unless otherwise stated: Where I refer to facts within my own knowledge, I believe them to be true. Where I refer to information from other sources, I have identified my sources and the information it is true to the best of my knowledge and belief.

### My background

2. I am a Professor of Computer Science at Columbia University, New York, USA and an honorary fellow of Churchill College, Cambridge. I am the designer and original implementer of the C++ programming language. I am also the author of the C++ Programming Language (1st edition 1985, 2nd Edition 1991, 3rd edition 1997, "special" edition 2000, 4th edition 2013), A Tour of C++ (1st edition 2014, 2nd edition 2018, 3rd edition, 2022), Programming: Principles and Practice using C++ (1st Edition 2008, 2nd edition 2014), and The Design and Evolution of C++ (1994), as well as other publications. I remain involved in the standardization of C++ and have received many international honors for my work, including The Charles Stark Draper Prize from The US National Academy of Engineering. This is the NEA's highest honor and one of the world's highest honors for an engineer.

### **Creation of C++**

3. I started on what became C++ in April 1979 and supported its first user in October 1979. It was then called "C with Classes" and there were only a handful of users in 1980 and I think I knew them all. All were employees of Bell Labs and I think all worked in Bell Labs, Murray Hill, New Jersey. I began to develop a successor to "C

with Classes" in 1982. The name C++ was first used in December 1983. This is documented in a reviewed paper: B. Stroustrup: A History of C++: 1979-1991. Proc ACM History of Programming Languages conference (HOPL-2). ACM Sigplan Notices. Vol 28 No 3, pp 271-298. March 1993 (Exhibit BS1).

#### Libraries in C++11

4. Bird & Bird has asked me whether the libraries "<chrono>", "<thread>" and "<random>" were in use by 2007-2008. I believe that is unlikely. <chrono>, <thread>, and <random> are part of C++11 (released in 2011) and not – to my knowledge – deployed then. The first reference to what became <chrono> I could find in the standards committee's archives (https://www.open-std.org/jtc1/sc22/wg21/docs/papers/) is from June 2008. It was new to me then when it was presented in the standards committee. The first proposal for what became <random> is from November 2002; it was based on Boost::random from 2000. <thread> was based on Boost::thread from 2007. Before C++11 these libraries was called differently: chrono.h, thread,h, and random.h. Howard Hinnant is the main designer of <chrono> and may know.

I have not referred to any documents in the course of this evidence other than those mentioned above.

## **DECLARATION**

I understand that the purpose of this witness statement is to set out matters of fact of which I have personal knowledge. I understand that it is not my function to argue the case, either generally or on particular points, or to take the court through the documents in the case. This witness statement sets out only my personal knowledge and recollection, in my own words.

On points that I understand to be important in the case, I have stated honestly (a) how well I recall matters and (b) whether my memory has been refreshed by considering documents, if so how and when.

I have not been asked or encouraged by anyone to include in this statement anything that is not my own account, to the best of my ability and recollection, of events I witnessed or matters of which I have personal knowledge. I believe the facts stated in this statement are true. I understand that proceedings for contempt of court may be brought against anyone who makes, or causes to be made, a false statement in a document verified by a statement of truth without an honest belief in its truth.

SIGNED:



DATED: 21/11/2023