

MERL-2395

ASSIGNMENT

WHEREAS, We, **LISTED INVENTORS**, have made certain inventions or discoveries (or both) set forth in an Application for Utility Patent of the United States of America entitled "**Cross-Free High Dimensional Constellations for Dual-Polarized Non-Linear Fiber-Optic Communications**," the specification of which:

- ___ was executed by us on the date indicated below;
- x was filed on April 13, 2011 as Application Serial No. 13/086,020
- ___ was patented under U.S. Patent No. ___ on ___;

WHEREAS, Mitsubishi Electric Research Laboratories, Inc., a corporation of the State of Delaware, whose address is 201 Broadway, Cambridge, Massachusetts 02139, and who, together with its successors and assigns is hereinafter called "Assignee", is desirous of acquiring the entire right, title, and interest together with the benefits and privileges hereinafter recited;

NOW, THEREFORE, for valuable consideration furnished by Assignee to us, receipt and sufficiency of which we hereby acknowledge, we hereby, without reservation;

1. Assign, transfer and convey to Assignee the entire right, title and interest together with the benefits and privileges in and to said inventions and discoveries, said Application for Letters Patent or similar forms of protection of the United States of America, and all other applications for Letters Patent on said inventions and discoveries in whatsoever countries, including all divisional, renewal, substitute, continuation and convention applications based in whole or in part upon said inventions or discoveries, or upon said application, and any and all Letters Patent, reissues and extensions of Letters Patent or similar forms of protection granted for said inventions and discoveries or upon said applications, and every priority right that is or may be predicated upon or arise from said inventions, said discoveries, said applications and said Letters Patent;

2. Authorize Assignee to file patent applications in

MERL-2395

any or all countries or groups of countries on any or all of said inventions and discoveries in our name or in the name of Assignee or otherwise as Assignee may deem advisable, under the International Convention or any other relevant convention or treaty or otherwise;

3. Authorize and request the Assistant Commissioner for Patents of the United States of America and the empowered officials of all other governments to issue or transfer all said Letters Patent to Assignee, as Assignee of the entire right, title and interest therein or otherwise as Assignee may direct;

4. Warrant that we have not knowingly conveyed to others any rights in said inventions, discoveries, applications or patents or any license to use the same or to make, use or sell anything embodying or utilizing any of said inventions or discoveries; and that we have good right to assign the same to Assignee without encumbrance;

5. Bind our heirs, legal representatives and assigns, as well as ourselves, to do, upon Assignee's request and at Assignee's expense, but without additional consideration to us or them, all acts reasonable serving to assure that said inventions and discoveries, said patent applications and said Letters Patent shall be held and enjoyed by Assignee as fully and entirely as the same could have been held and enjoyed by us, our heirs, legal representatives and assigns if this assignment had not been made; and particularly to execute and deliver to Assignee all lawful application documents including petitions, specifications, and oaths, and all assignments, disclaimers, and lawful affidavits in form and substance as may be requested by Assignee; to communicate to Assignee all facts known to us relating to said inventions and discoveries or the history thereof; and to furnish Assignee with any and all documents, photographs, models, samples and other physical exhibits in our control or in the control of our heirs, legal representatives or assigns which may be useful for establishing any facts of our conceptions, disclosures, and reduction to practice of said inventions or discoveries.

MERL-2395

IN WITNESS WHEREOF:

DATE I SIGNED INVENTOR'S DECLARATION: April 11, 2011

Toshiaki Koike-Akino Date: Feb. 24, 2012
Toshiaki Koike-Akino

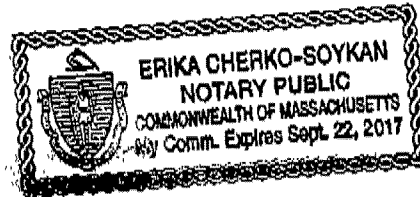
County of Middlesex)ss
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Subscribed and sworn to before me by the above-named Toshiaki Koike-Akino this 24th
Day of February, 2012

Erika Cherkov-Soykan
Notary Public

My Commission Expires:

September 22, 2017



MERL-2395

IN WITNESS WHEREOF:

DATE I SIGNED INVENTOR'S DECLARATION: April 12, 2011

K Parsons
Kieran Parsons

Date: 3/12/2012

County of Middlesex)
) ss

Subscribed and sworn to before me by the above-named Kieran Parsons this 12th Day of March, 2012

Erika Cherko-Soykan
Notary Public

My Commission Expires:

September 22, 2017

