

Document number: N3351=12-0041  
Date: 2012-01-13  
Working group: Evolution  
Reply to: Bjarne Stroustrup <bs@cs.tamu.edu>  
Andrew Sutton <asutton@cs.tamu.edu>

# A Concept Design for the STL

B. Stroustrup and A. Sutton (Editors)

Jan, 2012

## Participants:

Ryan Ernst, A9.com, Inc.  
Anil Gangolli, A9.com, Inc.  
Jon Kalb, A9.com, Inc.  
Andrew Lumsdaine, Indiana University (Aug. 1-4)  
Paul McJones, independent  
Sean Parent, Adobe Systems Incorporated (Aug. 1-3)  
Dan Rose, A9.com, Inc.  
Alex Stepanov, A9.com, Inc.  
Bjarne Stroustrup, Texas A&M University (Aug. 1-3)  
Andrew Sutton, Texas A&M University  
Larisse Voufo <sup>†</sup>, Indiana University  
Jeremiah Willcock, Indiana University  
Marcin Zalewski <sup>†</sup>, Indiana University

## Abstract

This report presents a concept design for the algorithms part of the STL and outlines the design of the supporting language mechanism. Both are radical simplifications of what was proposed in the C++0x draft. In particular, this design consists of only 41 concepts (including supporting concepts), does not require concept maps, and (perhaps most importantly) does not resemble template metaprogramming.

## Contents

<b>1</b>	<b>Introduction</b>	<b>5</b>
1.1	Motivation	5
1.2	Approach	7
1.3	Design Ideals	8
1.4	Organization	9
<b>2</b>	<b>Algorithms</b>	<b>10</b>
2.1	Non-modifying Sequence Operations	12
2.1.1	All, Any, and None	12
2.1.2	For Each	14
2.1.3	The Find Family	15
2.1.4	The Count Family	18
2.1.5	Mismatch and Equal	18
2.1.6	Permutations	19

---

<sup>†</sup>Participated in editing of this report.