

# ***Commonwealth of Virginia's Enterprise Information Architecture & NIEM Integration Strategy***

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# Questions

***– Please use Chat – send to Eric Sweden***



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# Commonwealth of Virginia's Enterprise Information Architecture & NIEM Integration Strategy

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Commonwealth of Virginia

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NASCIO Webinar  
July 16, 2013



# Presentation Agenda

- Overview of the Commonwealth's Enterprise Information Architecture (EIA) Strategy
- Review of new statutory requirements for data standardization
- Highlight use of the National Information Exchange Model (NIEM) Engagement Process
  - Cost Model
  - Project Schedule
  - NIEM Core Person Data Exchange Standard
- Discuss NIEM Scope and Compliance Methodology
- Questions & Answers



# Commonwealth of Virginia Enterprise Information Architecture (EIA) Strategy



## EIA Strategy – Purpose

- Articulate a strategic vision for EIA aligned with business drivers and focused on achieving EIA outcomes
- Establish measurable EIA goals and objectives designed to track progress toward the desired EIA “future state”
- Serve as a roadmap for EIA to fully align solutions and technical infrastructure, data management, and business processes and objectives
- Provide a strategic EIA framework that will support development of agency-level implementation plans across the Commonwealth

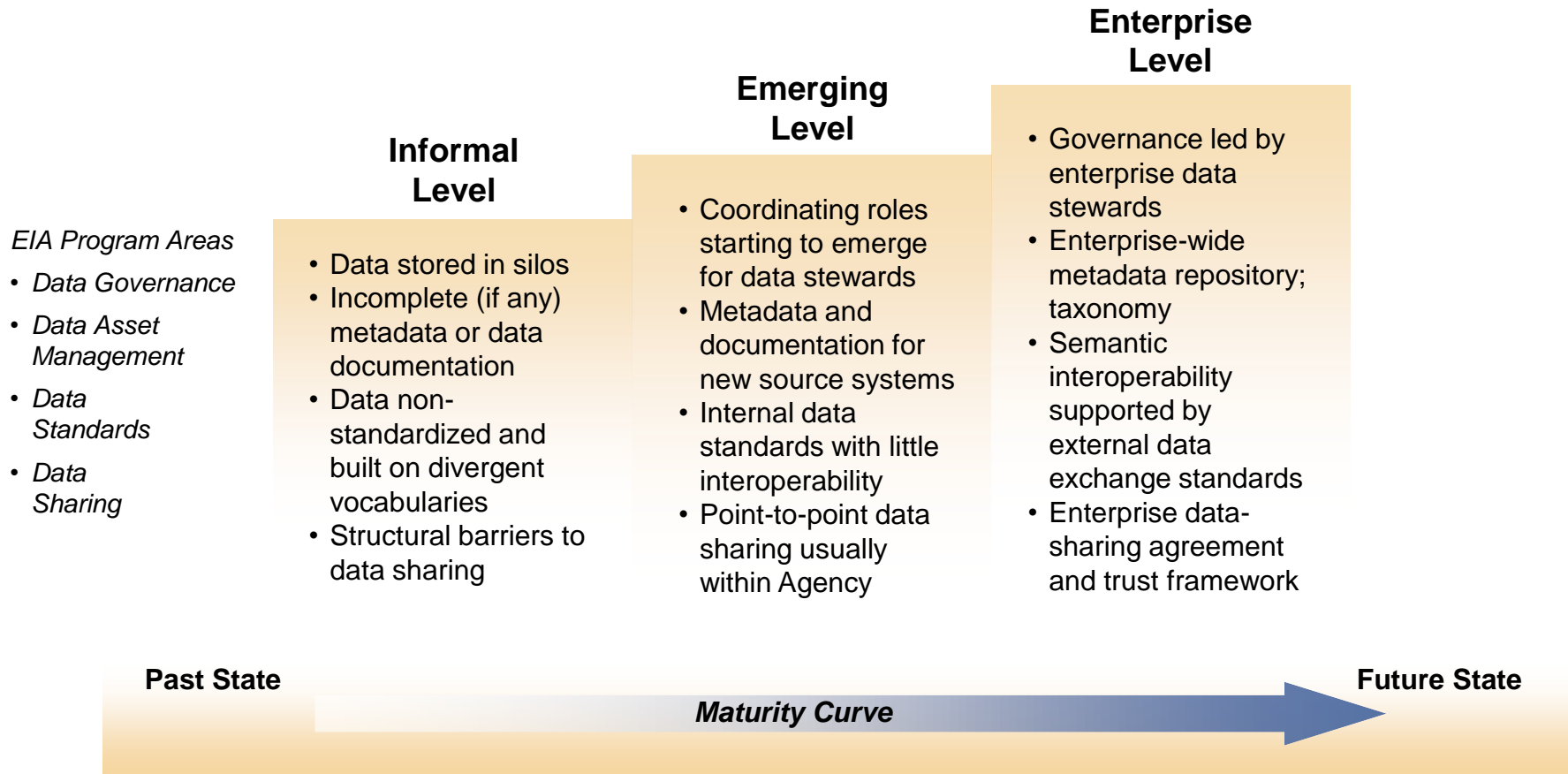




## EIA Scorecard – “Current State”

- Modeled on Gartner’s ITScore methodology
- Adapted to align with the Commonwealth’s EIA elements of the IT Resource Management Policies, Standards and Guidelines
- Measured agency activity in the core EIA program areas:
  - Data Governance
  - Data Standards
  - Data Asset Management
  - Data Sharing

# EIA Maturity Model



Graphic Source: AMR Research, 2006

# EIA Strategy – Process





## EIA Strategy – Process

- Planning Preparation/Stakeholder Engagement
  - Strategic Planning Committee/Data Stewards
- Analysis & Baseline Scorecard
  - Quantitative Analysis on EIA Scorecard
  - Identification of Performance Constraints
- Goals & Objectives
  - High-level EIA Goals Owned by Data Stewards
  - Performance Targets in Primary EIA Domains



## EIA Strategy – Process

- Implementation/Business Plans
  - Implementation Strategies at the Agency, Program and Source Data System Level
  - Performance Metrics tied to Strategies and Aligned with EIA Domains
- Performance Monitoring
  - Ongoing Application of EIA Scorecard
  - Evaluation of Progress along EIA Maturity Curve based on Performance Metrics



## Vision & Mission

### Vision:

*The Commonwealth of Virginia will achieve the highest level of excellence in its enterprise approach to managing, securing, sharing, and using its information assets.*

### Mission:

*The Commonwealth of Virginia's Enterprise Information Architecture (EIA) approach promotes availability of consistent, secure, high quality, timely and accessible information to enable quality service to citizens of the Commonwealth.*



## Business Drivers

- Business Driver 1: Data Quality
- Business Driver 2: Standardized Data and Shared Definitions
- Business Driver 3: Data Accessibility, Reuse, and Reduced Data Redundancy
- Business Driver 4: Informed Decision Making and Public Service



## Goals & Objectives

*Goal 1: Data Governance. Forge a disciplined approach to data governance across the Commonwealth with formal roles for data stewards and other stakeholders.*

Objective 1.1: Formally adopt an EIA governance framework with enterprise-level policies, standards, guidelines, and performance metrics.

Objective 1.2: Establish clearly defined enterprise-level roles for data stewards and other EIA stakeholders across Commonwealth agencies.

Objective 1.3: Provide training, technical assistance, and other resources to enhance the EIA knowledge, skills, and abilities Commonwealth data stewards, particularly those in small agencies.

Objective 1.4: Support agency-level implementation planning and data governance activities.





## Goals & Objectives

*Goal 2: Data Standards. Promote the use of standardized data and shared data definitions as a means of supporting business-driven information exchange across agency systems, government domains, and levels of governance.*

Objective 2.1: Continue to develop policies, standards, and guidelines to promote data standardization and the use of standardized data.

Objective 2.2: Continue to develop and submit for adoption data standards for the seven business areas pursuant to Chapter 879 of the 2008 Appropriation Act ("the Act"), as amended.

Objective 2.3: Refine and implement the governance and process model established for developing, identifying, accessing, adopting, and maintaining Commonwealth standards.

Objective 2.4: Support agency-level implementation planning and agency use of Commonwealth standards.



## Goals & Objectives

*Goal 3: Data Asset Management. Manage information as an enterprise asset, with an emphasis on quality, security, efficiency, accessibility, reduced redundancy, and a higher return on investment.*

Objective 3.1: Complete an inventory of enterprise data assets across the Commonwealth and compile metadata on each enterprise asset.

Objective 3.2: Develop a taxonomy with information classes to structure the metadata from the enterprise data asset inventory.

Objective 3.3: Design, develop, and implement an enterprise metadata repository to support discovery and reuse of enterprise data assets.

Objective 3.4: Map metadata on agency systems to business, solutions, technology architecture, and adopted Commonwealth data standards.



## Goals & Objectives

*Goal 4: Data Sharing. Leverage the sharing of information based on business need and in compliance with governing laws, statutes, and regulations to increase government performance, improve service to citizens and more effectively achieve business outcomes.*

Objective 4.1: Secure an executive-level directive to Commonwealth agencies to establish a trust framework – a formal agreement among participants implemented through common policies and procedures – in support of business-driven, compliant data sharing.

Objective 4.2: Form a governance committee to develop, implement, and maintain an enterprise trust framework to support business-driven, compliant data sharing.

Objective 4.3: Identify applicable legal, regulatory, policy, and technical constraints impacting data sharing and orient the trust framework to address these requirements.

Objective 4.4: Develop policies, standards, guidelines, and procedures to govern the operations, onboarding, maintenance, breach resolution, and certification processes associated with the implementation of the trust framework.



# Statutory Requirements for Data Standardization



## Item 427 Requirements – Background

- Item 427 of the 2012 & 2013 Appropriation Acts set requirements for data standardization
- Budget language closely related to the findings from the Auditor of Public Accounts (APA) audit completed in May 2012
- Item 427 requirements went beyond the original statutory requirements to standardized data in the seven core “business of government” domains
- New requirements included standardization of all “citizen-centric” data



## Item 427 Requirements

- Item 427 C.1 Requirement – Standardization of all “citizen-centric” data
  - Standards via conformance with the National Information Exchange Model (NIEM)
  - Scope, schedule and cost estimate
- Item 427 C.2 Element – Standardization of data for projects cited in the Item
  - Engagement with the agencies to identify what projects would be in scope and a strategy for adopting/aligning with standards



## Item 427 – Final Plan

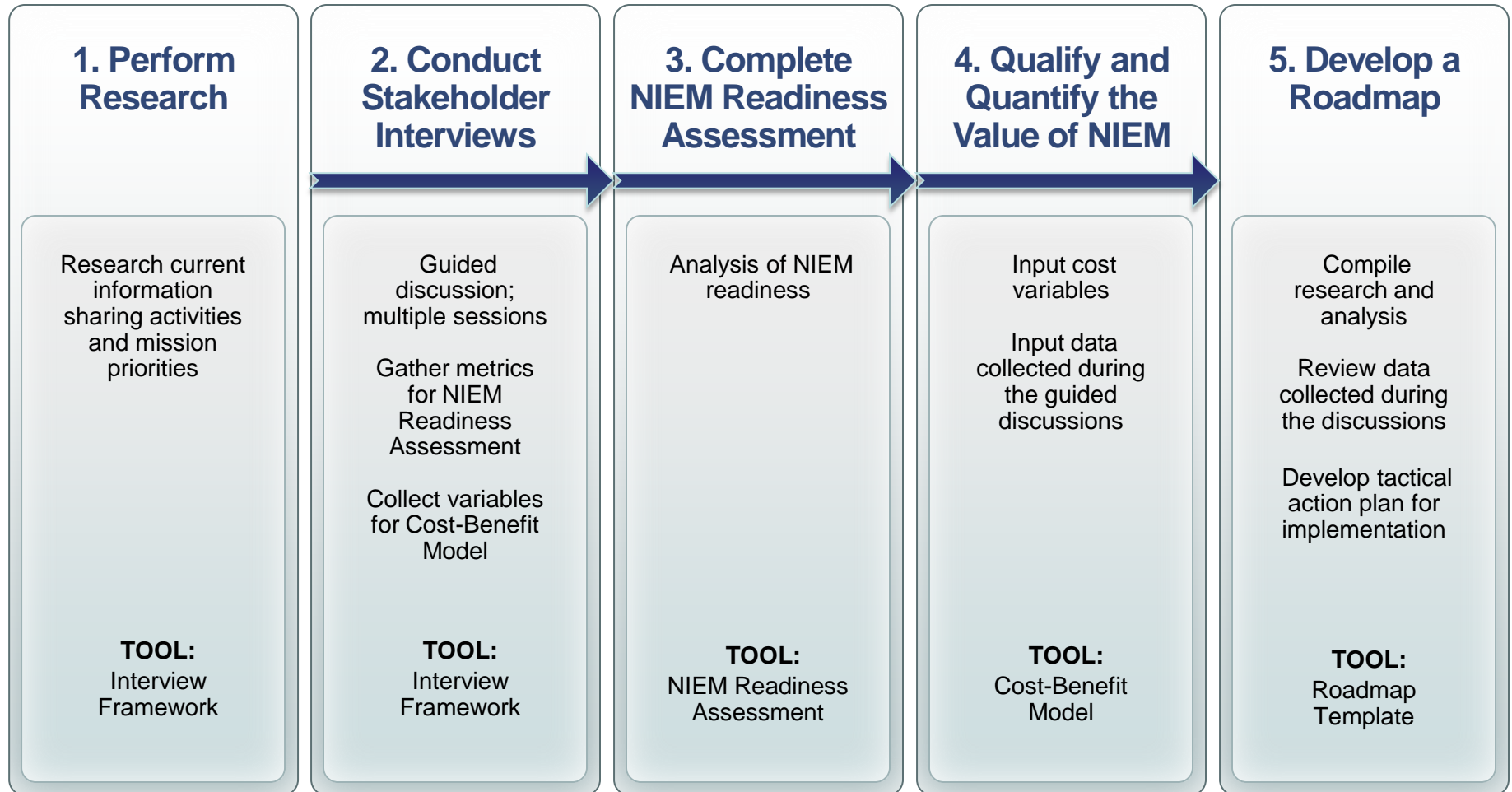
- Compliance plan for meeting the Item 427 C.1 and C.2 requirements
- Governance structure for adopting and supporting compliance with data standardization
- Alternatives to data standards, including data-exchange standards, Web services and Enterprise Data Management solutions
- Overview of NIEM integration plan, including scope, cost estimate and project schedule



# NIEM Engagement Process

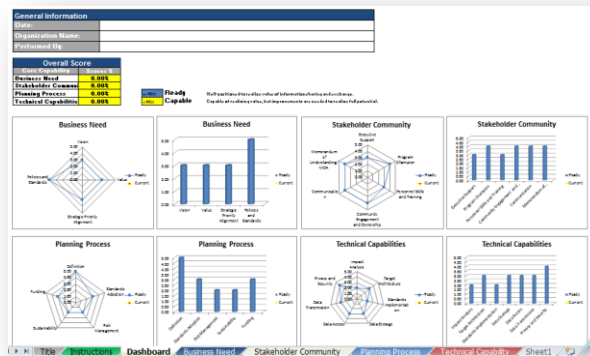


# NIEM Engagement Process



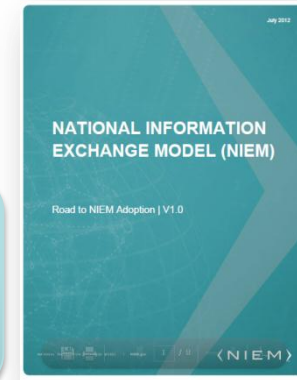
# NIEM Resources

## Readiness Assessment



Evaluates organization's readiness to adopt NIEM

## Roadmap to NIEM Adoption



Assists organizations with quantifying the general costs associated with NIEM implementation

## Cost Model

< NIEM >

NIEM Cost Model v. 2.0  
Exchange Variables

Exchange Factors	Base Year	Year 1	Year 2	Year 3
RPO Reuse	0	0	0	0
Number of Additional Exchanges	0	0	0	0
Governance	0	0	0	0
Number of Elements	0	0	0	0
Exchange Complexity	0	0	0	0

Level of Effort in Hours per Complexity Level	Level of Effort in Hours per Complexity Level		
	Simple	Moderate	Complicated
NA	0	0	0
Low	0	0	0
Medium	0	0	0
High	0	0	0

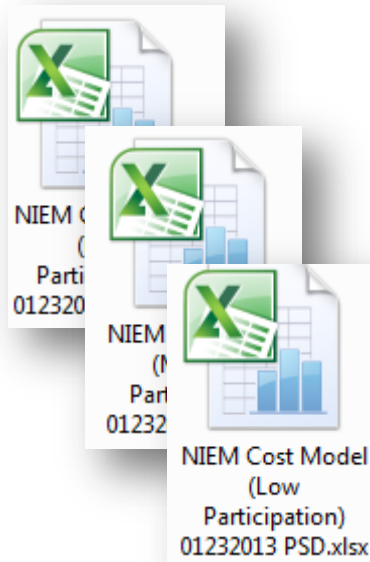
Terms Definition (3.0) and Extension Schema (4.2.2) Extension Factors Model Overlay

Discount Factors	Does an EPD already exist	NO
Reuse of NIEM Data Elements	Number of new elements that do not exist in the NIEM model	Some <50% Elements Already

Supports organizations with preparing, adopting, and continuously engaging their community with NIEM and NIEM-related processes

# Virginia's Implementation

## Business Case Development



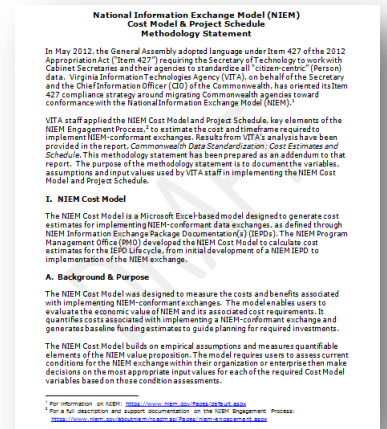
Developed three unique cases based on potential participation

## Project Planning

Task Name	Duration	Start
Scenario Planning	40 days	Fri 5/1/12
Establish a Vision	15 days	Fri 5/1/12
Establish a Process	15 days	Fri 5/22/12
Develop Scenarios	10 days	Fri 4/12/12
Requirements Analysis	30 days	Fri 4/26/12
Define Information Content and Context	15 days	Fri 4/26/12
Build Domain Model	15 days	Fri 5/1/12
Mapping and Modeling	30 days	Fri 6/7/12
Mapping	15 days	Fri 6/7/12
Define Terms with Exchange Partner	15 days	Fri 6/26/12
Building and Validating	60 days	Fri 7/6/12
Identify Reference Schemas	10 days	Fri 7/19/12
Create Subset Schema	5 days	Fri 8/2/12
Create Extension Schema	15 days	Fri 8/6/12
Create Exchange Schema	10 days	Fri 8/20/12
Build Constraint Schema	10 days	Fri 9/13/12
Validate Schema	10 days	Fri 9/27/12
Assemble and Document	20 days	Fri 10/11/12
Develop Meta-Data Schema	10 days	Fri 10/1/12
Assemble Required EPO Artifacts	10 days	Fri 10/1/12
Publish EPO	10 days	Fri 11/5/12
Publish EPO to Repository	10 days	Fri 11/5/12
Data Exchange Design Implementation	65 days	Fri 11/22/12
Design Instance Creation Rules (Sender)	10 days	Fri 11/22/12
Design Instance Processing Rules (Receiver)	10 days	Fri 11/22/12
Design Instance middleware routing rules based on data exchange	10 days	Fri 12/20/12

Developed detailed project schedule

## Methodology Documentation



Documented variables, assumptions, and input values



## NIEM Engagement Milestones

- NIEM Onsite Training (November 2012)/ Executive Briefing (December 2012)
- NIEM Core Person Data Exchange Standard (March – June 2013)
- Commonwealth Data Standardization (Item 427): Final Plan (Eff. July 2013)
- NIEM/Item 427 Implementation and Compliance Schedule (Begins July 2013)



# NIEM Core Person Data Exchange Standard Scope & Compliance Schedule



## NIEM Person Standard – Purpose

- To adopt as a Commonwealth Data Standard the NIEM Core Person data elements
- To foster semantic interoperability among Commonwealth Agency data systems based on adopted Federal standards/specifications and industry best practices
- To meet the statutory requirements under Item 427 of the 2012 & 2013 Appropriation Acts, requiring standardization of “all citizen-centric” data



# NIEM Person Standard – Components

- NIEM Normative Specifications as published and maintained by the NIEM Program Management Office:  
<https://www.niem.gov/technical/Pages/references-specs.aspx>

- NIEM Core Person Data Elements, Definitions and Specifications as published and maintained in the NIEM Reference Schemas:  
<http://release.niem.gov>

and as available in the NIEM Subset Schema Generation Tool (SSGT) at

<http://tools.niem.gov/niemtools/ssgt/index.iepd>



## NIEM Person Standard – Scope

- New Systems: Agencies proposing new in-scope systems, including replacement of existing (“legacy”) systems, on or after July 1, 2013, must comply with the standard or have an approved exception at the time the system goes into production.
- Item 427 Systems: Agencies with systems cited as projects in Item 427 (“Item 427 systems”) must comply with the standard. Agencies responsible for the Item 427 systems will be required to submit to VITA by July 1, 2014, a plan for compliance with the standard or have an approved exception.





# Question & Answer



## For More Information

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