.NET Code Review for Crash Analysis Reports

On October 3rd 2011, a Formal Code Review was completed for the Staff Repository System / Emergency Notification Information process.

The .Net Coding Standards are available at:
http://infonet.dot.state.fl.us/bsso/NetCodeReviewStandards.docx

Standards Violations

Two (2) Standard Violations were found.

2. All objects that implement the IDisposable interface or inherits from a class that implements this interface must have their dispose method called either in a try finally block or by using a ‘using’ block when the dispose method is not automatically called and where NOT calling Dispose results in a Resource Leak.

Project FDOT.Application.Model, Compressor.cs:

```csharp
public static byte[] Compress(byte[] data)
{
    var output = new MemoryStream();
    using (var gzip = new GZipStream(output, CompressionMode.Compress, true))
    {
        gzip.Write(data, 0, data.Length);
        gzip.Flush();
    }
    return output.ToArray();
}
```

8. General Shared Resource Addresses should not be hard coded.

IRISExport\Program.cs, Line 314:
```csharp
string buildings = System.IO.File.ReadAllText(@"\dotcosan02\CO\OIS\BSSO\Private\Applications\SRS\EmergencyNotification\BuildingComparisonCommaDelimited.csv");
```

IRIS.Web\Pages\Help.aspx.cs, Line 14:
```csharp
string serviceDeskUrl = "http://fdotsharepoint.dot.state.fl.us/fa/OIS/FDOTServiceDesk/default.aspx";
```

IRIS.Web\Global.asax.cs, Line 16:
```csharp
SqlDebugHelper.Initialize(@"C:\irisSqlLog.txt");
```

Recommendations

1. Remove from SVN the following folders since they cause uncommitted changes upon a successful build:

   https://dotcosvnp1.co.dot.state.fl.us/svn/IRIS/trunk/FDOT.Application.Model/bin/
   https://dotcosvnp1.co.dot.state.fl.us/svn/IRIS/trunk/FDOT.Application.Model/obj/
2. Can FDOT.Application.Model be an external reference to a tagged version instead of being embedded in the solution?

3. Can access to PPSTBL37 be done through the ORM?

4. Remove unnecessary reference Microsoft.HostIntegration.MsDb2Client.dll from IRIS, why this assembly needs to be included and deployed?

5. Fix all the warnings such references not available and the FEL 2.0 and FEL 3.0 conflict

    c:\Windows\Microsoft.NET\Framework\v4.0.30319\Microsoft.Common.targets(1360,9): warning MSB3245: Could not resolve this reference. Could not locate the assembly "UltimateSpell". Check to make sure the assembly exists on disk. If this reference is required by your code, you may get compilation errors.


    IRISExport - > C:\VS 2010\IRIS\IRISExport\bin\Debug\IRISExport.exe

6. Remove the large blocks of commented code

7. Reduce traffic from the persistence layer whenever possible...

```csharp
IRIS.BusinessObjects\Adapters\StaffServiceAdapter.cs, Lines 218-219:

    var searchResults = client.Proxy.SearchStaffBySearchCriteria(staffSearchCriteria);
    results.AddRange(searchResults.Where(s => s.StaffType.Value != STAFF_TYPE_EXTERNAL_CONSULTANT));
```

```csharp
IRIS.BusinessObjects\Adapters\StaffServiceAdapter.cs, Lines 237-250:

    sbSql.AppendFormat("select * from {0}.{1} ", conn.DefaultSchemaName, "BSST033_EMRG_CNTCT");
    //sbSql.AppendFormat("ON  A.STAF_MBR_SQ   = B.STAF_MBR_SQ  ");
    //sbSql.AppendFormat("where a.STAT_CD = 'A' and STAFF_TYP_CD <> 'EXTCNSLT'");

    using (DbCommand cmd = conn.CreateCommand())
    {
        cmd.CommandText = sbSql.ToString();
        using (DbDataReader dr = cmd.ExecuteReader())
        {
            while (dr.Read())
            {
                int srsId = (int)dr["STAF_MBR_SQ"];
                ApplicationUser user = users.SingleOrDefault(u => u.Staff.ExternalIds.Contains(srsId));
            }
        }
    }
```
select * from {0}.{1}  

(sbSql.AppendFormat("select * from {0}.{1} WHERE STAFF_TYP_CD <> {2}", conn.DefaultSchemaName, "BSST033_EMRG_CNTCT", STAFF_TYPE_EXTERNAL_CONSULTANT);

8. Synchronous web service calls.
Synchronous web service calls in ASP.NET applications can tie up the pool’s threads to the point where it reduces the number of requests that can be serviced. This is usually only an issue if the service calls take much time and/or with sufficient traffic. If either of those conditions apply (or are likely to apply), then consider making the calls asynchronously.

9. Put email address coded in markup in a configuration file
IRIS.Web\Site.Master, Line 64:
If you have any questions about emergency notifications, please send an email to <a href="mailto:EOC@dot.state.fl.us?subject=Emergency Notification Information Question">EOC@dot.state.fl.us</a>.<br/>